



Ministerstvo financií
Slovenskej republiky

**National Strategy of the Slovak Republic
for [Digital Integration](#)**

Bratislava, November 2008

CONTENT

1. Introduction
 - 1.1. Background
 - 1.2. European dimension
 - 1.3. Current state of play
 - 1.4. Scope of the document
 - 1.5. Defining population groups at the risk of digital exclusion
2. Priority areas
 - 2.1. Accessibility of information and communication technologies
 - 2.2. Inclusive e-Government
 - 2.3. Enhancing digital literacy and ICT skills
 - 2.4. Reducing geographical digital divides
 - 2.5. Information and communication technologies for the elderly
3. Organisational and financial arrangements
 - 3.1. Organisational arrangements for digital integration
 - 3.2. Financial arrangements and sources of funding for digital integration

1. Introduction

In compliance with the key EU initiative in the area of information society concerning digital integration and ageing¹, the Ministry of Finance of the Slovak Republic has prepared this document in order to provide information on the current state of play with respect to the digital integration efforts in Slovakia, define the priorities, recommend the measures and activities to be taken in order to address the existing situation, and present particular steps to be implemented in this area in the near future.

The document is divided into three sections. The first section gives the reasons for the drafting of this document, briefly describes the current state of play and the target groups of digital integration in Slovakia, presenting this issue in the European context. The second, core part of the document, describes the priority areas in more detail, with focus on the definition of the measures that may facilitate the inclusion of certain groups at the risk of digital exclusion. Where a particular measure falls within the remit of a relevant ministry, a reference is made to that ministry in brackets behind the measure. Examples of successful projects are given in boxes at the end of each sub-chapter on a particular priority area. The third section sets out the organisational and financial arrangements.

1.1. Background

Governments in EU Member States are confronted with numerous complex problems, such as population ageing, unemployment-related issues, public health, or social imbalances. People are demanding still better services, better security and a stronger participation in democratic decision-making. The transition towards information society is accompanied by problems relating to the growing social imbalances, which is reflected in a so-called “digital divide”². Advanced applications of the information and communication technologies (hereinafter referred to as “ICT”) imply the risk of “digital exclusion” from society.

By addressing the issues of digital integration for all citizens, along with e-Government issues across public administration, opportunities open up to mitigate the impacts of these problems on society and accommodate the growing requirements among citizens who expect the state to improve their quality of life. At present, digital integration is necessary to ensure social justice. This requires actions and measures to be taken in order to build an integrated information society for all citizens, regardless of their individual or social disadvantages. Therefore, the public administration has to accept the challenge to combat the digital divide in society and reduce the digital exclusion of the groups at risk through measures and actions aimed at digital integration. In line with the EU priorities, the National Strategy of the Slovak Republic for Digital Integration invites the central and local government bodies, NGOs and the business sector to engage in addressing these issues and implement the proposed actions and measures. The present document further elaborates on the National e-Government

¹ Ministerial Declaration on e-Inclusion, Riga, June 2006; Commission Communication on Ageing well in the Information Society, Action Plan, COM(2007)332.

² OECD(2001): Understanding the Digital Divide. The OECD defines the term “digital divide” as the gap between individuals, households, businesses and geographic areas at different socio-economic levels with regard both to their opportunities to access information and communication technologies (ICTs) and to their use of the Internet.

Strategy of the Slovak Republic³, and adapts and complements individual steps and principles for the development of information society from the perspective of digital inclusion.

1.2. European dimension

Digital integration is necessary in order to safeguard an economic and social progress the EU Member States seek to achieve through i2010 – A European Information Society for growth and employment⁴, an initiative implemented as part of the Lisbon agenda. The i2010 initiative specifies the key issues pertaining to digital convergence and primarily focuses on creating a European information space as a single market for digital economy, strengthening of innovation and investments in ICT research activities, and promoting digital inclusion.

Members States and the Commission have adopted a whole range of measures to support e-Inclusion under the i2010 initiative. The crucial step in this respect was a declaration adopted by 34 ministers of European countries at the “ICT for an Inclusive Society” conference held in Riga in 2006¹, the so-called Ministerial Declaration on e-Inclusion. The declaration defined particular policy objectives concerning the accessibility of broadband access, access to ICT, digital literacy and inclusive e-Government, with an emphasis put on the needs of the ageing population, to be achieved until 2010. The National Strategy of the Slovak Republic for Digital Integration defines individual priority areas (see Chapter 2) that respect the objectives and priorities set by the ministerial declaration. Achievements made in the fulfilment of the Riga objectives in all areas is regularly monitored and assessed by the European Commission both on the EU and Member States levels⁵. It seems that while the current trends prevail it will be extremely difficult to accomplish a majority of these objectives at the EU level until 2010 as scheduled, since the implementation of necessary measures falls 50% short of the pace required to meet the target. Problematic areas remain and differences have even deepened in some of them. It should be noted, however, that there are large differences in the accomplishment of the set objectives within the EU; some regions can even boast of above-average results.

Further strategic guidelines to facilitate the digital inclusion of disadvantaged groups by means of an Inclusive e-Government were published in the Commission Communication “i2010 e-Government Action Plan: Accelerating e-Government in Europe for the Benefit of All”⁶. The action plan points out that one of major objectives for e-Government is the principle that no citizen is left behind. The document specifies in more detail one of the crucial tasks of digital integration, i.e. the provision of public and specialised electronic services and information content. It provides framework definitions of measures and actions towards digital integration in this area, such as implementing high-impact key services for citizens and businesses and strengthening participation and democratic decision-making. The document notes that e-Government services respecting the needs of specific groups at the risk of digital exclusion may only be successful if measures are implemented on the demand side to support digital skills of users and broadband access. Such e-Government services have the potential to increase employment rates, in particular if accompanied by the possibility of teleworking or working in a sheltered work environment.

³ Slovak Government Resolution No. 131/2008 of 27 February 2008.

⁴ <http://ec.europa.eu/i2010>

⁵ Measuring progress in e-Inclusion Riga Dashboard 2007, <http://www.epractice.eu/document/4121>.

⁶ COM(2006) 173.

The most up-to-date key EU document in this area, the Commission Communication “To be part of the information society”⁷, evaluates the existing situation in the area of digital integration, as well as solutions and recommendations for the identified problems in the form of an EU initiative. It involves a targeted campaign for 2008 entitled “e-Inclusion, be part of it!” designed to promote the ongoing digital integration efforts and their outcomes. The campaign will be concluded by a ministerial conference scheduled for December 2008, which is expected to formulate a vision for the future direction of digital integration. The most serious causes behind the high portion of potential users who do not use ICT include: fragmented and insufficiently integrative ICT-based solutions provided by the industry and services providers, poor coordination and low effectiveness of the policy measures taken by public authorities.

The tasks in individual areas of the information society building are addressed in further communications prepared by the European Commission under the i2010 Initiative⁸; their conclusions are reflected in the National Strategy of the Slovak Republic for Digital Integration, as well as in digital integration processes in general. Major initiatives are in place at EU level aimed at funding the research, development and innovation efforts, such as the Seventh Framework Programme for Research and Technological Development (FP7), or the ICT Policy Support Programme under the Competitiveness and Innovation Programme. These programmes promote new areas of digital integration through the implementation of targeted projects, as well as through the exchange of good practices. In order to set the right course for the strategy and monitor the progress achieved in its implementation, mutual comparisons based on relevant and reliable indicators will be essential. The activities of individual central government bodies participating and represented in the EU working parties and expert groups play an important role in terms of having direct impact on the drafting of EU legislation; which in turn facilitates its implementation at the national level and, by the same token, prevents the time and funds from being spent on unviable national solutions in areas where cross-border and interoperable solutions are required.

The National Strategy of the Slovak Republic for Digital Integration is built on the aforementioned strategic documents and respects the priorities set at the EU level. At the same time, it takes into account the situation in Slovakia, along with its specificities and problems which differ from the European ones to a certain degree. This fact is reflected in the proposals for specific measures.

1.3. Current state of play

The penetration of information and communication technologies into all walks of life is an undeniable fact also in the Slovak Republic. While the issue of social inclusion receives adequate attention⁹, digital integration of the disadvantaged groups of population is only slowly getting into the focus of the competent institutions. Identification of the barriers that contribute to a digital divide in society represents the first step towards their elimination.

⁷ COM(2007) 694.

⁸ Commission Communication on eAccessibility, COM(2005) 425. Commission Communication on Bridging the Broadband Gap, COM(2006) 129. Commission Communication: i2010 eGovernment Action Plan: Accelerating eGovernment in Europe for the Benefit of All, COM(2006) 173. Commission Communication on Ageing well in the Information Society, action plan, COM(2007) 332. Commission Communication on E-skills, COM(2007) 496.

⁹ The National Report on the Strategies for Social Protection and Social Inclusion for 2008-2010, Slovak Government Resolution No. 619/2008 of 10 September 2008.

Particularly people with disabilities, the elderly, and the geographically disadvantaged or economically vulnerable groups of population are most exposed to the risk of being excluded from the use of new technologies due to ICT unavailability and, consequently, impaired access to e-Government services. These groups often neither own nor have access to a computer. Furthermore, people with disabilities often encounter barriers in accessing individual web sites due to non-compliance with the basic standards. Even the information appearing on the websites of state institutions is not legible and accessible to everyone, which is alarming.

The number of active Internet users is dynamically growing in general. The situation in the usage of broadband technologies is also relatively favourable. On the other hand, there are certain identifiable groups which use the Internet only scarcely, if at all, and can thus hardly benefit from e-Government services or tap on the Internet as a source of information. This applies in particular to those living in geographically disadvantaged regions, but also the low-income groups, including the elderly, are at risk. The growing problem of their digital exclusion results primarily from their low digital literacy and the related lack of motivation to use ICT and electronic services. The lack of motivation to use e-Government services can also be attributed to the feeble supply of specialised services designed for or adjusted to the needs of the disadvantaged and last, but not least, to the insufficient quality of the already available services.

The National Strategy of the Slovak Republic for Digital Integration gives the issues of digital integration a new level of prominence and raises the profile of a need to embark on the initiatives conducive the digital integration of socially disadvantaged groups of citizens. The current situation in the field of digital integration and the progress achieved thus far in the Slovak Republic is discussed in more detail in part 2 of this document.

1.4. Scope of the document

The National Strategy of the Slovak Republic for Digital Integration (“e-Inclusion”) defines the priority areas for which measures need be formulated aimed at achieving the maximum possible digital integration of the socially disadvantaged and those at the risk of digital exclusion. The definition of these areas has been inspired by the Ministerial Declaration on e-Inclusion adopted at the “ICT for an Inclusive Society” ministerial conference in Riga in 2006. **Chyba! Záložka nie je definovaná.** The options for the maximum possible digital integration of the socially disadvantaged and those at the risk of digital exclusion are cumulated in six basic areas which are almost identical with the outstanding issues and solutions within the Slovak context as described in the previous chapter:

- ICT accessibility;
- Inclusive e-Government;
- Enhancing digital literacy and ICT skills;
- Reducing geographical digital divides;
- Promoting cultural diversity;
- ICT for the elderly.

The aspects of cultural diversity are not discussed in the present document separately since the solutions adopted in other areas generate synergies that create solutions for this particular area as well.

1.5. Defining the groups of population at the risk of digital exclusion

The particular groups of population at which the digital integration measures are targeted have been specified based on the reasons and causes of their being at disadvantage or risk. On the one hand, these include physical and mental faculties and capacities (disability, lower education, age); on the other hand, the social environment in which they live, either on a short-term or permanently (geographic and demographic characteristics of the area – region, social status, financial standing).

Groups of population at the risk of digital exclusion:

Groups of population at the risk of digital exclusion	defined by physical and mental faculties and capacities	People with disabilities	handicapped people, people with impaired hearing or sight, immobile people...
		Undereducated people	people incapable of attaining a higher education level, people with poor digital literacy and poor ICT competences...
		Older workers and elderly people	people actively ageing in work, at home, in thematic communities...
	defined by social conditions	People living in geographically and demographically disadvantaged areas (regions)	people living in geographically remote regions, in sparsely populated regions...
		People at disadvantage due to their social status	unemployed, members of marginalised groups...
		People below the minimum subsistence level	people dependent on social assistance

2. Priority areas

2.1. Accessibility of the information and communication technologies

Electronic barrier-free access (eAccessibility) is one of the important priorities of digital integration and constitutes a part of standardisation in the process of society informatisation. The area of eAccessibility takes on prominence in cases when the content, functionalities and other aspects of ICT-enabled products and services make it difficult for disadvantaged groups of population to access and use them. The ICT-enabled products and services that apply the principles of eAccessibility help these groups to overcome day-to-day challenges they are confronted with when using the technologies and services of the information society

With a view to enabling the people with disabilities to use and benefit from ICT-based products and services, an inter-disciplinary theoretical framework of recommendations has been established, so-called Design for All¹⁰. It lays down the principles for designing an environment or a product that could be used by any individual without any need for its further modifications. The application of the Design for All principles in practice should make the products, services and technologies accessible to as wide range of users as possible, particularly in terms of improving their employability skills and social inclusion.

As far as the ICT accessibility by users is concerned, proper attention should be paid to the development and availability of assistive technologies, such as screen readers, touch displays, magnification programmes, special control devices which facilitate the access by people with disabilities to information kiosks, ATMs, mobile phones, digital television, electronic ballot equipment, eBooks, eLearning, eCommunication services, etc. Also new technologies (e.g. digital television, new generation mobile phones), which are gaining a wider footprint, should comply with the compatibility and hardware and services design requirements.

As much as 40% of EU population has never used the Internet due to their disabilities, and more than 95% of websites are not customised for users with disabilities¹¹. Particularly for this group it is important that web pages¹² are accessible, that is free and clear of any barriers to users irrespective of their handicaps, knowledge, skills or experience. As far as the website accessibility is concerned, this issue is often narrowed down to visually impaired users only. It is important to bear in mind that the term *disadvantaged user* means any user who, in general, has difficulties in working with a website which the user himself cannot overcome. Such a user does necessarily not have to fall within the category of people with disabilities. On the other hand, it is mainly people with sight and hearing impairments who are confronted with numerous obstacles when accessing websites, which result from unsuitable technologies and inappropriate presentation of the visual and audio content. Even fully accessible web pages often contain documents the content of which are difficult if not impossible to access. The websites that lack such elementary tools as, for example, a change text size option or a simplified text mode option are often illegible for the visually impaired. Only a tiny fraction of websites includes assistive technologies such as audio text reading or speech-to-text conversion functions. The absence of such technologies may have various reasons, including poor awareness, website owners' lack of interest in providing such services, low standardisation of Internet protocols, or the lack of knowledge of basic standards.

The websites cannot be fully utilised by people with disabilities if not adjusted to their special needs which should be anchored in the industry standards. The Act on Information Systems in

¹⁰ www.designforalleurope.org

¹¹ A European Commission survey of March 2008, <http://www.euractiv.sk/informacna-spolocnost/clanok/zdravotne-postihnuti-a-internet>.

¹² Web pages, as Internet locations with on-line access, are components of a website.

Public Administration¹³ requires the system administrators to bring, by 1 June 2008, public administration information systems into compliance with the standards¹⁴ that specifically define the mandatory requirements for web page accessibility. In order to map the situation with respect to the compliance with the aforementioned Act, the Ministry of Finance of the Slovak Republic carried out a survey in 2007 on a representative sample of 200 public and private sector websites¹⁵. The results were extremely unsatisfactory. Only four websites fully complied with the accessibility rules. The survey results showed that the remaining websites were more or less difficult to access, or even inaccessible for certain users. One of the main reasons is website designers' poor awareness of the need to design websites that would be accessible for disadvantaged users with respect to the promotion of equal opportunities and anti-discrimination. Since the legislation imposes the obligation to harmonise the systems in the public administration sector only, it is extremely difficult to enforce that these standards be also used by the private sector without the public pressure. In this context, the European Union seeks to see the websites of all public institutions being in compliance with the web content accessibility guidelines¹⁶ by 2010, and the continuously increasing utilisation of the Internet by those groups of population that cannot use the benefits of the information society in the full extent. To that end, the Ministry of Finance of the Slovak Republic wishes to regularly monitor the accessibility of websites, with the focus on their compliance with the standards, in particular those operated by the public administration authorities. The monitoring results published in September 2008 are available.

Measures:

- Raising the awareness among website users and designers of the standards the websites should comply with in order for them to be fully accessible to all users – through trainings, conferences, articles in print and electronic media, etc. To be done in cooperation with secondary schools and universities that educate/train future web designers (the Ministry of Finance of the Slovak Republic, the Ministry of Education of the Slovak Republic);
- Supporting innovation in designing products, services, technologies and applications suitable for users with various disabilities (private and public sector, research and development organisations);
- Performing regular surveys on the accessibility of websites in the public and private sectors. Where serious and recurring shortcomings are identified, §10 of Act No. 275/2006 Coll. **Chyba! Záložka nie je definovaná.** should be applied. (Ministry of Finance of the Slovak Republic).

¹³ Act No. 275/2006 Coll. on Information Systems in Public Administration and on amendments to certain acts, as amended by Act No. 678/2006 Coll.

¹⁴ Decree No. MF/013261/2008-132 on the standards for information systems in public administration. An explanatory methodology guideline has also been issued to this regulation.

¹⁵ The 2007 report on the accessibility of website in the public and private sectors, <http://www.informatizacia.sk/monitorovanie-pristupnosti-webovych-stranok/2824s>.

¹⁶ The Web Accessibility Initiative (WAI) group, established as part of the World Wide Web Consortium (W3C), has developed the Web Content Accessibility Guidelines (WCAG 1.0). These guidelines are not laws; they are only recommendations on which all other methodologies have been built in this area. A draft WCAG 2.0 version was published in April 2008. Labelling the websites with the W3C, BlindFriendly and similar logos (so-called Accessibility labelling) help the users to identify the level of accessibility of a given website.

One of successful eAccessibility activities is the Blind Friendly Web initiative (www.BlindFriendly.sk) launched by two civic organisations, Únia nevidiacich a slabozrakých Slovenska (Slovak Blind and Partially Sighted Union) and eSlovensko, with the significant support of the Ministry of Transport, Post and Telecommunication of the Slovak Republic and Sjednocená organizace nevidomých a slabozrakých Česká republika/Czech Blind United (www.blindfriendly.cz). The aim of the initiative is to contribute to ensuring that web pages are accessible to people with sight impairments or other disabilities through the assessment of those components of website design that directly affect their accessibility to users. It helps the disadvantaged users to better navigate through web pages by means of an accessible sites portal and encourages, through references to the principles of accessible web content, the website designer to follow these rules. The aim is to enable and encourage all web designers to self-testing their web designs using a methodology instruction. The Blind Friendly methodology rules accept, in addition to visually impaired users, also other disadvantaged user groups (e.g. users with disabilities; users who use other than the majority internet browser, as well as users with alternative displays).

2.2. Inclusive e-Government

Inclusive e-Government constitutes the provision of electronic public services in a way that will render them beneficial also for citizens lacking access to ICT, the necessary skills, as well as special tools and equipment. It is important that e-Government be able to cater for the needs of all citizens interested in using it, regardless of their disadvantage.

There are several factors affecting the digital exclusion of disadvantaged groups. They can relate to financial issues, education, health or geography; however, there can also be technical barriers. It is the use of e-Government services that would improve the quality of life of these disadvantaged groups, provide them with access to education, work and participation in the public administration's decision-making process. It would also raise their awareness and social inclusion. The possibility of providing higher-quality social services and healthcare is equally important.

Although electronic services help reduce the administrative burden, there is a risk that, instead of becoming easier, interaction with public administration will become more complicated for those who do not have easy access to ICT or for those who lack the necessary skills. Issues such as the inaccessibility of ICT infrastructure, low ICT skills and inadequate availability of communication channels may represent barriers that prevent these people from fully harnessing the potential of electronic services. Skills associated with ICT and digital literacy rate among the conditions most vital to the successful utilisation of e-Government services. These factors are even more important than the socio-economic indicators such as wage, sex, social status or education.

The European Commission's studies⁵ show that only approximately 20% of public administration service users rely on digital communication channels. In the countries surveyed, most citizens preferred direct contact, telephone or post when contacting public administrations. It was also ascertained that 42% of the citizens who use the e-Government are accessing electronic services on behalf of their friends and family members. They thus act as intermediaries employing ICT to provide a service for final users or on their behalf. The experience of advanced EU Member States suggests that a large proportion of people prefer telephonic contact when communicating with the public administration. The fact that a majority of the people from the vulnerable groups owns a mobile telephone represents major

opportunity to improve their contact and communication with the public administration. Through the development of the so-called multi-channel strategies, it is possible to provide for alternative options of selecting the means of communication with the public administration. The types of communication channels via which the services will be made available to the public could include traditional means such as personal contact (be it actual offices or human mediators), telephone call centres, mobile telephones or electronic means such as the Internet, e-mail, SMS and digital television. The so-called integrated service centres are an important alternative as well. Here, assisted electronic services will be physically provided by the respective centre's personnel. They will act as intermediaries – after identifying the applicant through the public administration's portals, they will have used the eServices as if it were the actual applicant accessing them directly.

Importantly, inclusive e-Government must also integrate the support of cultural and language diversity. Across-the-board utilisation of ICT, especially among young people including refugees and ethnic groups, could help overcome the existing ethnic, cultural and language barriers. Although multilingual content is still limited in the digital space and language mutations rather tend to target tourists, scientists and/or investors, it is vital that its development enhance the economic and social participation of vulnerable groups in the information society.

In Slovakia the transformation of the e-Government (which is currently being developed) into inclusive e-Government is central to addressing the issues of digital inclusion. The Ministry of Finance of the Slovak Republic declares this course of action in the basic documents describing the process – namely the National e-Government Strategy of the Slovak Republic³ and the National Concept for Informatisation of Public Administration¹⁷. The documents declare the Slovak Government's clear support of inclusive e-Government, the objective of which is to allow all citizens including the disabled and those from socially disadvantaged population groups to benefit from the possibilities e-Government has to offer. The provision of equal opportunities for all constitutes the cornerstone of both the above strategic documents. The implementation of ICT and of the key e-Government services will employ principles and adhere to standards that will ensure the accessibility of the websites to disabled or otherwise disadvantaged persons (see Chapter 2.1). Consideration will also be given to the differences in the socio-economic status among the individual regions and citizen groups, with a view to attaining a comparable level of the information society development in all the regions as well as all citizen groups.

Measures:

- Expanding the portfolio of e-Government services, including services provided via the Central Public Administration Portal, to also comprise specialised electronic services intended for the disadvantaged and vulnerable citizen groups – e.g. services designed for the handling of marginalised citizen-specific issues, tools facilitating public discourse and the participation in democratic decision-making, the setting up and provision of key e-Government services in a way that would not exclude any citizen group (the Ministry of Finance of the Slovak Republic);
- Supporting a more flexible approach to the utilisation of various ICT and to the multi-channel provision of public administration services, with a view to ensuring the best possible accessibility of ICT for the citizens from disadvantaged groups (building of public Internet access points, first-contact rooms providing the citizens with the

¹⁷ Resolution of the Government of the Slovak Republic No. 331/2008 of 21 May 2008

possibility to handle an issue by themselves without the presence of a third person, setting-up of special rooms with PC and Internet access at workplaces, in facilities providing social services and healthcare facilities, public cultural institutions, etc.) (the Ministry of Finance of the Slovak Republic);

- supporting pluralism, cultural identity and language diversity when setting up the key eServices (the Ministry of Finance of the Slovak Republic);
- Providing for the implementation of inclusive e-Government principles during the switchover to electronic public procurement (the Office for Public Procurement of the Slovak Republic).

In the context of Slovak libraries, the digitisation of and provision of access to library and information services is not always addressed in a way that would satisfy all the citizen groups. Since public libraries rate among the 20 basic categories of e-Government services, the need to make library services accessible also to those users who have difficult access to information is that much more pressing. The Slovak Library for the Blind of Matej Hrebenda is an institution providing library and information services to visually impaired users in Slovakia, which had implemented a project entitled the Digital Network for the Blind (www.skn.sk/dk). The project addresses the digitisation and the provision of free-of-charge access to library and information services for users with difficult access to information. It is aimed at simplifying the use of digital services by means of a website, where the blind can listen to audio magazines from an archive and to audiobooks. The project implementation resolved the provision of access to digital books in line with the Copyright Act, as well as the restriction of audiobook use exclusively for the blind and the vision-impaired users.

2.3. Enhancing digital literacy – the information and communication technology competences.

The digital literacy of a population is defined as the ability to understand information and use it in different formats from different sources presented by the means of information and communication technologies¹⁸. The readiness of people to use modern information and communication technologies represents one of the cornerstones of building a knowledge-based economy and may play a decisive role in the digital integration of those at the risk of exclusion from information society. Digital illiteracy has an adverse impact on, for example, opportunities to receive high-quality education, get an attractive job or improve one's qualification and specialisation which, in turn, naturally impairs the overall quality of citizens's life. Although the enhancement of digital literacy should be one of the basic tasks addressed in a concerted effort across the entire society, Slovakia is more-or-less lagging behind the advanced EU countries in this respect.

One of Slovakia's specificities affecting the level of digital literacy lies in considerable regional disparities. The socio-cultural and macroeconomic differences among the country's regions (e.g. in terms of foreign investment, economic performance, average wage, unemployment, ethnic structure, etc.) are causing that the levels of pressure within society to improve digital literacy differ. In order for the process of improving digital literacy to take the desirable course, we must also bear in mind the scope, digital content, availability of the ICT services provided, and the degree in which communication infrastructure is developed in individual territories. From a sociological viewpoint, the differences in digital literacy levels

¹⁸ Digital Literacy in Slovakia 2007, a survey conducted by the Institute for Public Affairs.

are mainly due to education, language skills, type of economic activity, age, disabilities and qualification level. Apart from lacking realistic opportunities to overcome their handicap, the groups at the risk of exclusion lack the motivation and, frequently, also access to modern ICT. On the other hand, the level of digital literacy of some citizen groups is fairly satisfactory and continues to improve (younger, better educated persons with higher qualification, urban segments of population).

Digital literacy is closely linked mainly to the level of education –higher education nearly always implies higher digital literacy. This is because every educational process nowadays is very demanding in terms of the ability of both students and pedagogues to make use of digital technologies and ICT in the process of teaching and learning. Although the educational system is nowadays confronted with a plethora of problems (insufficient information and communication infrastructure, schools being insufficiently equipped with educational software and specialised literature, absence of a central educational portal and own digital resources), the Ministry of Education is actively promoting the use of ICT in the educational process and in ensuring computer literacy of both students and pedagogues at all levels of education. The amendment to the Act on Education and Training also supports the idea to equip children with ICT skills already at the primary school¹⁹. The Government of the Slovak Republic has also approved a document entitled “Strategy for Informatisation of the Regional Education System”²⁰, the aims of which is to bring the Slovak education system in a four years’ time closer to modern European schools preparing pupils for a knowledge-based society. The current computer literacy level of pedagogues should also improve significantly.

Digital literacy is also being improved through the promotion of employee education at workplaces (especially small and medium enterprises have the potential for a more intensive and efficient use of ICT equipment). Intensive activities are underway, e.g. offices of labour, social affairs and the family are organising retraining courses for the unemployed. In addition, local authorities organise training activities for the elderly – e.g. through educational academies, libraries, and clubs for senior citizens. Also other special-interest communities pursue activities in this sphere, such as mothers’ centres which organise computer courses for mothers on maternity leave, etc. Some have taken the development and enhancement of their digital literacy in their own hands (e.g. self-study, eLearning, taking of courses). In this respect, public institutions, municipalities, private sector and non-profit organisations play a significant role, since their activities substantially contribute to the readiness of citizens to use modern information and communication technologies.

Moreover, progress in this field can be also be boosted by raising public awareness of the possibilities and advantages of using modern ICT, focusing not only on general public, but particularly on the groups of citizens at the risk of digital exclusion, as well as by increasing motivation to use ICT through the creation of interesting digital content.

Measures:

- Raising public awareness of the information society and of the possibilities and advantages of using ICT with a view to improving the quality of life of those at the risk of digital exclusion, namely through the implementation of awareness-raising activities, a system of training and education (Ministry of Finance of the Slovak Republic, Ministry of Education of the Slovak Republic, regional and local administration bodies, thematic communities);

¹⁹ Act No. 245/2008 Coll. on Education and Training and on the amendment of certain acts (the School Act).

²⁰ Resolution of the Government of the Slovak Republic No. 112/2008 of 20 February 2008.

- Supporting new projects in the area of digital literacy enhancement which would harness the existing potential of previous projects in line with the approved Strategy for Informatisation of the Regional Education System; supporting a more efficient utilisation of human resources and computer equipment at schools in Slovakia (Ministry of Education of the Slovak Republic, Ministry of Finance of the Slovak Republic);
- Supporting digital literacy enhancement and the reduction of disparities in the levels of digital literacy among the population through the establishment of and provision of access to eLearning applications and through the organisation of courses, lectures, seminars and trainings; creating conditions for the acquisition of skills and competences in ICT use, especially for citizen groups at the highest risk of digital exclusion (Ministry of Finance of the Slovak Republic, Ministry of Education of the Slovak Republic, regional and local administration bodies, thematic communities).

Successful projects aiming at the support of digital literacy improvement include the *Digitálne štúrovstvo* project. Education centres have been set up at primary and secondary schools, thus giving citizens access to the Internet, e-Government services, as well as expert advisory support. The project aimed mainly at increasing the level of education in the field of ICT among specific population groups that could be excluded or otherwise disadvantaged in the process of developing the information society on account of their social, economic, health or ethnic status. At the international ITAPA 2006 Congress, the project was awarded the best IT project in the area of public administration in the category of new services; approximately 70 000 Slovak inhabitants participated (the duration of education was about 30 hours per participant on average).

2.4 Reducing geographical digital disparities

The disparities in the access of individuals and businesses to ICT and in possibilities for their utilisation, identified specifically in connection with the geographically disadvantaged areas, are often referred to as the geographical digital divide. Apart from disparities in access to the high-speed Internet using broadband connections, the geographical digital disparities are significant mainly in the area of digital literacy (see Chapter 2.3) and in the area of e-Government services provision (see Chapter 2.2).

Unavailability of broadband connection hampers faster economic and social development and growth of individual regions and groups of citizens and exposes the thus disadvantaged groups to the risk of progressive isolation. On the other hand, the availability of broadband services represents one of the crucial elements in the provision of assistance to local communities in terms of supporting the setting up of new business activities, in allowing for telecommuting, in the provision of healthcare, and in improving education and public services. In view of the rapid progress in the development of new media, it represents a technically reliable means of access to media products (Internet television broadcasts or Internet telephone services), while also being a key prerequisite for improving public services. Availability of broadband Internet will ultimately help make rural areas more attractive, support tourism and improve opportunities for the marketing and sale of products and services.

Even though the market in electronic communications in the Slovak Republic is developing rapidly, in 2008 Slovakia continued to rank among the countries with the lowest density of

broadband Internet connections in the population and with a considerable geographic digital divide. The geographical specificities of Slovakia affect the costs of network infrastructure in the regions and represent a major factor affecting broadband connection penetration.

Apart from problems with broadband Internet availability, the connection speed is markedly lower in rural areas (housing fewer than 100 inhabitants per km²), which are home to approximately 30% of Slovaks; this fact, combined with a lower purchasing power and the still relatively limited offer of useful content and e-Government services, discourages prospective users and curbs demand. A larger proportion of citizens in post-productive age, along with lower employment rates and the associated lower level of digital skills, count among the factors that undermine the motivation of rural population to obtain broadband connection. On the part of broadband access providers, the problem with more remote and rural areas lies in the high costs associated with the low population density, remoteness of the area, and the low return on investment. The experience of EU Member States shows that investments of private companies in the introduction of broadband connections in these areas are not sufficient and that support from the state budget or EU Structural Funds is necessary.

Ensuring sustainable economic and social development of rural areas requires strategic approach to the development of information society along with clearly expressed political support. The strategic approach will provide for a comprehensive solution to the geographic digital divide problem – on the one hand, through actions at the user level designed to support the skills, availability and motivation to use online services, on the other, through the implementation of political steps and public interventions aimed at bridging the geographic digital gap. In its Manifesto, the Government of the Slovak Republic declared support to the facilitation of broadband access by encouraging competition, efficient use of the frequency spectrum, and supporting high-speed broadband networks construction also in rural regions. The annually updated National Broadband Strategy of the Slovak Republic stipulates the targets and procedures of developing broadband access to electronic services in the Slovak Republic (until 2008), as well as specific support measures. The strategy also reflects the requirement to ensure cross-the-board availability of the broadband to all citizens, commercial sector and public administration, including the support of rural and remote areas' access to electronic services.

In terms of technology, the solution of major problems in broadband coverage of the rural, sparsely populated and hardly accessible areas can be supported through innovative technologies which will facilitate the development of high-capacity broadband connection, thus allowing disadvantaged regions to skip several development stages. The development of such innovative technologies needs to be supported at all levels; in this respect, the role of the state is to support access to the market and create a level playing field for fair competition.

Measures:

- Encouraging the increase in citizens' demand for broadband connection by stimulating the generation of content, developing e-Government, electronic healthcare (eHealth) and electronic education (eLearning) applications. (the public administration);
- Improving the availability of broadband connection through measures initiated at the local level, built on the cooperation of the public and the private sector (regional and local public administration bodies);
- Facilitating broadband Internet access for all citizens and public administration bodies through the support of broadband access infrastructure development in the areas unattractive for commercial operators. This issue will be addressed by the

implementation of Measure 3.1. “Development of Broadband Access Infrastructure” under the third priority axis “Improvement of Broadband Internet Access” within the “Operational Programme Information Society” falling under the National Strategic Reference Framework. (Office of the Government of the Slovak Republic, Ministry of Finance of the Slovak Republic).

Pursuant to the Action Plan of the Competitiveness Strategy for the Slovak Republic until 2010, a project entitled Internet for Education was launched in 2006. The Project aims to increase the penetration of high-speed Internet access and information literacy by supporting 40,000 households. A monthly subsidy of SKK 234 for a period of two years was granted to each applicant without high-speed Internet access. The Project ends in December 2008.

2.5. Information and communication technologies for the elderly

The ageing of the population is nowadays perceived as a global phenomenon in advanced societies. Demographic changes are beginning to show virtually in every sphere of social life. The constant increase in the number of people in the oldest age categories has had a profound impact on the social, cultural and economic aspects of every country’s social development. In Slovakia, people over 65 years of age currently account for over 12% of the population. According to the prognoses drawn up by the Statistical Office of the Slovak Republic with regard to the demographic development of the population by age groups, this percentage is to increase to 20% by 2030. This will inevitably affect mainly the country’s economy, size and structure of its labour force, as well as the pension system and other national insurance schemes. Equally importantly, it will lead to a substantial growth in healthcare expenditure.

The answer to the needs of the ageing population in information society lies in the possibility to give the elderly a chance to lead more independent lives and support their active participation in society. Sensible utilisation of ICT can help senior citizens improve the quality of their life and health, and can also have a positive impact on their life expectancy. Innovative solutions offer a way to address the most common difficulties of ageing that are associated with the impairment of memory, sight and hearing, reduced mobility and loss of independence; this includes the provision of support at work, at home or in a broader community. ICT can offer new applications and services for elderly citizens (such as intelligent houses with built-in technologies allowing for automatic or remote control of the house systems and equipment, new generations of memory and portable media which can, in combination with other devices and the GPS technology, help provide access to e.g. mobile hospitals or allow for immediate access to medical records...). Digital technologies for ‘ageing well’ will also be of use in social interaction. For example, access to the Internet, telephone via the Internet or video conversation will make contact with the family and friends easier and will help overcome social isolation; it will also make shopping, travelling, social life and the use of public services easier. Equally importantly, it will also help increase safety and a sense of security (monitoring of water and gas, lights switch-off, reminders for timely medication, some technologies and devices will ensure that the doors and windows are locked at night or upon leaving the house). In the field of information and communication technologies, the current demographic development can open the door for a new emerging market in new goods and services to cater for the needs of elderly persons.

The factors contributing to the barriers that prevent the elderly from availing themselves of the benefits of information society include insufficient access to ICT, inadequate skills, lack of motivation and, sometimes, also lack of the willingness to use new technologies. Since this

mostly concerns lower-income citizens who can barely afford even the basic conveniences of information society, such as the home use of the Internet, the cost of ICT and electronic services can also be an obstacle. Another threat rendering this group yet more exposed to the risk of exclusion from information society is the ever-increasing technological and scientific advancement which inherently places higher demands on the proficiency and computer competences. On the other hand, the generations gradually entering the 55+ category are expected to be more and more digitally competent and open to new technologies so as to reap the benefits of information society.

Demographic changes pose a major challenge to Slovak society. Long-term solutions in the field of ICT for the elderly are not simple and do not generate results immediately. The group of the ageing population is very vulnerable and the measures aimed at preventing its digital exclusion must be implemented in close cooperation with the competent state institutions, the Ministry of Labour, Social Affairs and the Family of the Slovak Republic, Social Insurance Agency and non-profit organisations – in particular the non-government organisations associating the elderly (e.g. the Slovak Pensioners Union, the Forum to Help the Aged). It is equally important to engage the groups of citizens active in thematic communities and the citizens ageing at home and at work. With respect to all the groups of citizens of older age, the measures to curb digital exclusion are largely associated with the development of inclusive e-Government (see Chapter 2.2), proper selection of precisely targeted electronic services, and the creation of an information content that reflects the requirements of this age category.

It should also be emphasised that all the information and recommendations described in this Chapter also pertain to the persons with disabilities and all the measures and technologies intended for the persons with disabilities are also useful for senior citizens who are becoming disabled in various respects.

Measures:

- Supporting the accession of the Slovak Republic to the European Community's initiative entitled "The Ambient Assisted Living Programme" (hereinafter referred to as the "AAL Programme") in compliance with the joint programme of research and development in the field of ICT for ageing well in the information society (Ministry of Education of the Slovak Republic);
- Promoting the awareness and raising the interest of commercial companies in the manufacturing and distribution of ICT-based innovative products, services and systems designed to make ageing at home, in the community and at work easier, which can also have an indirect effect on the reduction of healthcare and social care costs. (Ministry of Health of the Slovak Republic, Ministry of Labour, Social Affairs and Family of the Slovak Republic, private sector, regional and local public administration bodies, thematic communities);
- In cooperation with representatives of the population groups at the risk of digital exclusion due to age (e.g. the Slovak Pensioners Union), use the awareness-raising activities to inform the elderly on the advantages of information society and the possibilities and benefits of using ICT with a view to improving their quality of life. Using measures in the field of education to gradually improve digital literacy of the older age groups and establish conditions for the acquisition of competences in ICT use (thematic communities, regional and local public administration bodies);
- Supporting the expansion and development of new e-Government services, while taking into account the specific needs of citizens in the retirement and pre-retirement age based on a survey of this population age group. (Ministry of Finance of the Slovak Republic).

The MonAMI Project (Mainstreaming on Ambient Intelligence) implemented within the 6th Framework Programme for Research and Technological Development focuses on services provided by means of digital television, mobile telephones and the Internet, which will support the daily activities and improve the quality of life of the elderly and the disabled in their homes. This Project, currently the largest of its kind in Europe in the field of ICT for the elderly and the disabled, will demonstrate accessible and useful services and technological aids. The Project implementation will continue until 2010 with the participation of fourteen universities and industrial institutions from seven countries, including Slovakia.

3. Organisational and financial arrangements

3.1. Organisational arrangements for digital integration

The proposed division is determined by the competencies of the relevant institutions in the provision of services to citizens and by their responsibility for ensuring social justice and providing information to the public. The role of the coordinator in the field of digital integration is performed by the Ministry of Finance of the Slovak Republic which, under the law²¹, is a central government body competent for the development of information society.

The organisation and implementation of the measures leading to the digital integration of citizens at the risk of digital exclusion falls under the remit of the central government bodies represented by the Government of the Slovak Republic, in particular the Ministry of Finance of the Slovak Republic, Ministry of Labour, Social Affairs and Family of the Slovak Republic, Ministry of Health of the Slovak Republic, Ministry of Culture of the Slovak Republic and Ministry of Education of the Slovak Republic, local government bodies and thematic communities associating citizens according to the type of social disadvantage. The central government bodies are also responsible for the management of activities of their subordinated organisations which perform a significant number of tasks with respect to the implementation of measures leading to digital integration. Such subordinated organisations include, for example, specialised state administration bodies, social service facilities, healthcare facilities, schools and school facilities, educational institutions and cultural facilities. The activities of thematic associations are carried out on a voluntary basis and on their own initiative.

3.2. Financial arrangements and sources of funding for digital integration

State budget

The budgetary chapter of the Ministry of Finance of the Slovak Republic allocated SKK 30 million in 2009 and further SKK 30 million in 2010 for the provision of subsidies for the development of information society. Following amendment to the Decree²², these funds will be provided for projects supporting accessibility of ICT and for the provision of training and

²¹ Act No. 678/2006 Coll. amending Act No. 575/2001 Coll. on the Organisation of Activities of the Government and on the Organisation of Central State Administration, as amended, and on amendments to certain acts

²² Decree of the Ministry of Finance of the Slovak Republic No. MF/25915/2007-132 of 17 October 2007 on the provision of subsidies for the development of the information society.

awareness-raising activities in the area of ICT for the groups at the risk of digital exclusion, as well as for projects supporting the accessibility of ICT for the elderly.

Additional funds for projects implemented in line with the priority areas of the document will potentially be provided within the approved limits of the general government budget.

EU Structural Funds

The National Strategic Reference Framework 2007 – 2013 (NSRF) represents a reference document laying down the framework for the drawing of EU funds. The strategy, priorities and objectives of the NSRF will be implemented through 11 operational programmes within individual objectives of the EU cohesion policy.

A contribution in the amount of EUR 993,095,405 was allocated by the Community within the Operational Programme ‘Information Society’ (OPIS) for the development of information society. The overall objective of this OP is to create an inclusive information society as an instrument for the development of a high-performance knowledge economy.

The first priority axis is designated for the development of e-Government and electronic services. This axis should facilitate the building of an efficient public administration which represents a minimum burden on citizens and businesses and is accessible to all citizens.

The third priority axis of the OPIS focuses on facilitating access to broadband Internet. The aim is to achieve a high penetration of broadband Internet comparable to the level of the EU-15 advanced member states, give all Slovak citizens a possibility of access to the broadband Internet, and develop regional and local broadband networks in areas unattractive for commercial operators.

The overall objective of the Operational Programme ‘Employment and Social Inclusion’ is to increase employment, reduce unemployment, and facilitate social inclusion and capacity building. The second and third priority axes of this Operational Programme focus on the support of social inclusion; the third priority axis specifically focuses on the support of employment growth and social inclusion in the Bratislava Region.

Other sources

The prospective sources of funding to support activities in the field of digital integration include funds from the EU community programmes, in particular from the Competitiveness and Innovation Framework Programme – a programme to support the Information and Communication Technologies Policy Support Programme²³. Further funds may be allocated from the revenues of local government bodies designated for the financing of activities falling under their original competencies. Additional resources may also include the funds of foundations, grants, funds from the non-government sector’s activities, international institutions and, last, but not least, private investments.

²³ Decision No. 1639/2006/EC of the European Parliament and of the Council of 24 October 2006.