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Digital Switzerland Strategy



Schweizerische Eidgenossenschaft
Confédération suisse
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Confederaziun svizra

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1. Purpose

Today digitalisation increasingly defines our lives. For a country such as Switzerland which lacks natural resources it is important to make the best use of the opportunities which arise for society and the economy from digital change, for the well-being of all. With its stable political system and its proven high innovative capability, Switzerland has a good starting point to continue in the digital future to apply the successful model of an open and modern Switzerland which is fit to live in. Digital transformation makes a key contribution to the sustainable development of our country and the achievement of the UN's Agenda 2030 Sustainable Development Goals (SDGs).

To ensure that everyone living in Switzerland can benefit from the advantages of digital transformation, the authorities at all federal levels, civil society, businesses, science and the world of politics must tackle change together. Constant dialogue between all stakeholder groups helps to anticipate future challenges.

Against this background the Federal Council, with its strategy, defines the guidelines for a “digital Switzerland” and urges all stakeholders in digital Switzerland to approach relevant implementation projects and cross-sectional topics together. The action plan includes as an integral part of the strategy the specific measures to achieve the strategic goals.²

This document supersedes the Federal Council's “Digital Switzerland” strategy of 5 September 2018³. The text of the strategy with all links to further documentation is published at www.digitaldialog.swiss.

² The digital Switzerland action plan can be consulted at: <https://www.digitaldialog.swiss/>

³ Federal Gazette 2018 5961

2. Principles

2.1. Putting people at the forefront

The Confederation's digital policy places people at the forefront of an inclusive democratic information and knowledge-based society. So that they can contribute to shaping digital society, they must be included in the digital transformation processes, along with their desires and fears. These include greater empowerment for independent and self-determined action, the protection of people and their rights, social cohesion and solidarity among groups of the population, as well as more opportunities to participate actively in political and social life under digital conditions.

2.2. Providing room for development

For Switzerland it is crucial for society and the economy to have room for digital development. Political entities and authorities facilitate digital transformation as far as they are able to support it, where necessary. Appropriate general conditions are therefore being created to this end.

2.3. Facilitating structural change

The digital transformation of existing structures demands a change in thinking at all federal levels and brings into question traditional forms of living together and economic activity. This strategy lays down the foundations for promoting the social cohesion of the regions and cultural diversity and for strengthening the resilience of infrastructures. It contributes to the inclusive and equal-opportunity development of digital Switzerland. The state wishes to actively facilitate the structural change which digitalisation involves.

2.4. Networking the shaping of transformation processes

In order to exploit the opportunities associated with structural change and to overcome new challenges successfully, these must be approached in a cross-sectoral manner which is integrated nationally and internationally. In this connection, Switzerland can build on a position of strength, with particular reference to its multicultural character, its readiness to engage in dialogue and to achieve a consensus and its direct democratic processes which are characterised by pragmatism.

3. Key objectives

3.1. Enabling equal participation for all and strengthening solidarity

Switzerland is taking advantage of the opportunities of digitalisation for the well-being of its population and is tackling the risks of digitalisation in a consistent fashion. The participation of all Switzerland's inhabitants in social, political and economic life is also being guaranteed in the digital space. The fair distribution of opportunities and perspectives strengthens social solidarity as a major pillar of living together.

3.2. Guaranteeing security, trust and transparency

In Switzerland, inhabitants must be able to move within the digital world just as safely as in the real world and they must be protected from digital abuse and from unwarranted persecution. Transparent, data-based services strengthen trust and respect in relation to individual development and people's self-determination.

3.3. Continuing to strengthen people's digital empowerment and self-determination

The skills of the Swiss population must be further strengthened so that people can take part in digital life actively and as self-reliantly as possible. Thanks to lifelong learning, people should be able to participate competently, in their everyday lives and in crisis situations, in digitalised political, social, cultural and economic processes and to assess the consequences of their own actions as appropriately as possible. In this context, special attention is being given to protecting the basic and human rights of all citizens in both the analogue and digital arenas.

3.4. Ensuring value creation, growth and prosperity

Switzerland is developing its strengths as an innovative and globally networked national economy and creating the framework conditions for innovations and digital business models in such a way that value creation, economic growth, prosperity and international exchanges can be strengthened in the long term. Obstacles to entry into the market and barriers to trade will continue to be removed so that innovative companies can prosper and competition is strengthened. Where necessary, the general legal conditions will be further optimised. In this way the common good is strengthened and the sustainability of public finances is maintained.

3.5. Reducing the environmental footprint and energy consumption

Digitalisation can make a crucial contribution to Switzerland achieving its climate and environmental goals. To ensure that this happens, the consumption of energy and materials by the information and communication technologies (ICT) must not grow in line with the increasing use of these technologies. They must be used in an intensive and targeted way to reduce the consumption of energy and materials in all areas of life and work and to improve protection of the climate and the environment.

4. Fields of action

4.1. Education, research and innovation

Good education is an indispensable cornerstone for each individual and for society and the economy as a whole. The process of digital transformation greatly affects our lives and our work routines. It requires skills in handling the new technologies as well as creative and critical thinking. The dissemination of appropriate skills and the provision of appropriate education and professional development facilities therefore assume great importance.

For Switzerland to remain among the most capable countries in terms of the development and use of digital technologies, it must promote the necessary skills – in the sense of lifelong learning. In order to achieve the goal of equal opportunities and the participation of all residents in the possibilities of digitalisation, framework conditions are required which enable the necessary skills to be acquired. Participants in the education system have already undertaken major developments in the context of digitalisation and are starting out from an excellent position. It will be crucial to continue along this path without undue delay.

Science and research have a crucial role to play in terms of generating, disseminating and using knowledge. The new technologies constitute an essential basis for digital change and digital innovation, for example in the area of artificial intelligence or the processing of large amounts of data. Research and innovation are considered to be the central basis for Switzerland's high level of competitiveness and the basis for successfully managing structural change. They must be strengthened and further developed. In the process, the needs of the population, the economy and the environment must be taken into consideration, especially in an extraordinary situation such as the Covid-19 pandemic.

Switzerland's high level of innovation is made possible by a stable innovation system, which offers very good general conditions for innovators (in particular: access to national and European funding instruments), which allows participants to define key areas as far as possible and which is able to tackle important topics such as digitalisation and react to challenges. The Confederation is active in accordance with its subsidiary responsibility, creates favourable basic conditions and also observes developments in the international environment.

Contribution of the field of action to the UN's sustainable development goals:

- Goal 4: to ensure inclusive and equitable education and promote lifelong learning for all
- Goal 5: to achieve gender equality and empower all women and girls
- Goal 8: to promote long-term, inclusive and sustainable economic growth, productive full employment and decent work for all
- Goal 9: to build resilient infrastructures, promote broad-based and sustainable industrialisation and foster innovation

4.1.1. Appropriate framework conditions make it possible to exploit the opportunities of digitalisation in the education sector

Good framework conditions allow digital innovations in the education sector and promote the acquisition of the skills which are essential in the digital age. A coherent policy on the use of data for education in Switzerland is established and facilitates the correct use of data generated in the learning process. The ever more rapidly changing requirements and new challenges in crisis situations, such as the Covid-19 pandemic, demand constant improvements in the education system. The strengths of the diversified Swiss education system, with its equal-opportunity, practically oriented and generally formative offerings, provide the best conditions for this. To achieve their goals, the Confederation and cantons are coordinating their respective strategies in the sphere of digitalisation within the education sector.

Key documents:

- Message of 26 February 2020⁴ on the promotion of education, research and innovation in the years 2021-2024 (SBFI message)
- Exploiting opportunities optimally - 2019 statement on the common education policy goals for the education sector in Switzerland of 27 June 2019
- Report "Data in education - Data for education" of 31 August 2019, educa.ch
- Strategy of the Conference of Cantonal Ministers of Education for handling changes due to digitalisation in the education system. Goals (CCME resolution of 21 June 2018)
- CCME measures on the digitalisation strategy of 27 June 2019
- Report of 5 July 2020: "Challenges of digitalisation for education and research in Switzerland" and "Digitalisation action plan in the education, research and innovation sector in the years 2019 and 2020"
- Education Cooperation Act of 30 September 2016⁵
- Sustainable development strategy 2030 (*consultation process in summer 2020*)

4.1.2. Research and innovation are being strengthened

In view of the increasing pace of technological development across all sectors of the economy and the structural change accompanying digitalisation, skills in research play a key role. In order to maintain Switzerland's leading ranking as a location for innovation and research, skills relating to digital technologies in their entirety must be strengthened and the transfer of knowledge into the economy must be accelerated. New offerings in the sphere of promotion of innovation are being used, in particular to support knowledge transfer with reference to the digital transformation. Switzerland's participation in international programmes related to digitalisation in the area of research and innovation is also being promoted.

To strengthen skills in research and innovation, the action fields from the "Digitalisation action plan in the education and research sector in the years 2019 and 2020" are being consolidated within the framework of the Confederation's education, research and innovation policy (BFI message 2021-2024). The established instruments for the promotion of research and innovation will continue to be used. Education and professional development offerings, chairs at universities and research centres and international networking in teaching and research must continue to be

⁴ Federal Gazette 2019 3681

⁵ CC 410.2

developed independently, taking into account the dissemination of skills within the framework of the autonomy of the universities. The universities play a central role in the continuing development of education and professional development offerings in all specialist areas as well as in the critical analysis of the effects of digitalisation on society, the economy, and the environment.

Key documents:

- Message of 26 February 2020⁶ on the promotion of education, research and innovation in the years 2021-2024 (BFI message)
- Report of 5 July 2020: “Challenges of digitalisation for education and research in Switzerland” and “Digitalisation action plan in the education, research and innovation sector in the years 2019 and 2020”
- Sustainable development strategy 2030 (*consultation process in summer 2020*)

4.1.3. Switzerland has attractive framework conditions for a broad-based start-up ecosystem

The existence of a strong start-up ecosystem is of key importance for a country's innovation capability and innovation strength. Start-ups, in particular those which follow on from scientific research, are important drivers of disruptive innovations. As the Confederation's agency for promoting innovation, Innosuisse focuses on supporting start-ups, in order to position Switzerland as an internationally competitive nation for start-ups. Promotion of entrepreneurship and start-ups will be further intensified and appropriately supplemented by Innosuisse. On the one hand the internationalisation of start-ups is to be promoted in order to further facilitate their access to foreign markets from their Swiss home base. On the other hand there is a focus at the national level on the exploitation of synergies with the regional innovation systems (RIS) and their local contact points for businesses.

Key documents:

- Innosuisse 2021-2024 multi-annual programme
- Message of 26 February 2020⁷ on the promotion of education, research and innovation in the years 2021-2024 (BFI message)

⁶ Federal Gazette 2019 3681

⁷ Federal Gazette 2019 3681

4.2. Infrastructure

A nation-wide, financeable and secure universal service provision in the infrastructure sector is and remains a Swiss trade mark. The Confederation makes sure that the services forming part of the universal service are adapted to changing requirements and needs and in this way contributes to the population's quality of life, national cohesion and the attractiveness of Switzerland as a business location. High-quality, efficient and secure network infrastructures are the backbone for the successful functioning of the economy and society in the digital age. A reliable, internationally competitive and affordable communications infrastructure is a prerequisite for the development of new ways of living and working and new services and products. In addition there is a need for adequate spectrum resources as well as general conditions which promote innovation and investment for the ongoing development of communications infrastructures which operate as smoothly as possible. To this end, the basic conditions must be shaped in such a way that in the telecommunications sector the most efficient internationally recognised technologies can be used in both the fixed and mobile telephone networks.

Other central and indispensable location factors for the economy and society of Switzerland include the high quality of an efficient and environmentally-friendly entire transport system and its integration into international developments. The increase in automated vehicles on road and rail, the increasing electrification of vehicles, drones, new mobility services and digitalisation in logistics will change passenger and goods transport in the next few years and will also affect spatial development. Working independently of a location makes it possible to use existing infrastructures to capacity by avoiding traffic or shifting it to less congested times of the day. In order to be able to meet these challenges successfully, cooperation between all federal levels is essential.

Multimodal mobility services have great potential for users, the economy and the public sector. Thanks to more information about the various mobility offerings, mobility users can compare these more easily and combine them individually. Mobility decisions are becoming more rational as a whole and are contributing to energy and resource efficiency. Digital selling enables new forms of customer interaction. Overall, this creates the basis for the development and provision of new products by businesses.

Digitalisation in the energy networks, i.e. in the electricity, gas, and heating networks, supports the transformation to an energy supply system which is based on decentralised renewable energies. Digitalisation is essential and will enable new functionalities as well as closer coordination between the hitherto separate networks. In this way cost-efficiency can be improved and secure and reliable operation of the energy networks can be ensured.

Contribution of the field of action to the UN's sustainable development goals:

- Goal 7: to ensure access to affordable, reliable, sustainable modern energy for all
- Goal 9: to build resilient infrastructure, promote broad-based and sustainable industrialisation and foster innovation
- Goal 11: to make cities and settlements inclusive, safe, resilient and sustainable

4.2.1. Switzerland has a nation-wide, competitive, reliable, efficient and sustainable communications infrastructure

The dynamics of the market-driven expansion of communications networks will be maintained through the provision of resources such as frequencies and the further development of regulatory instruments. In addition, the universal service provides a basic offering of communication services for all sectors of the population. Switzerland is expanding its communications network infrastructure in order to maintain its leading position compared to other countries. To ensure this, the Confederation is providing a framework to attract investment. With the development of innovative solutions and standardisation, the security of communications infrastructures will also be guaranteed in the future. The design of the mobile radio network will also take into account sustainability aspects and environmental compatibility. Switzerland also exploits the economic and social potential of the internet domain name system (".ch" and ".swiss"), which is used for the benefit of Switzerland and its international positioning and in the virtual domain.

Key documents:

- Telecommunications Act of 30 April 1997⁸
- Confederation strategy for dealing with domain names of 27 February 2013
- Report of the group of experts "Mobile radio and radiation" of 28 November 2019

4.2.2. Mobility in Switzerland is intelligent, networked and efficient in all areas

Switzerland is striving to establish an entire transport system which is efficient in all aspects and in which the available infrastructure and technology are used optimally, fewer natural and financial resources are used and maximum benefit accrues to society. The Confederation promotes the provision of the data infrastructure for multimodal mobility and is developing appropriate general conditions for digital selling. The exchange of mobility data is being specifically and actively promoted and the corresponding structures for simplified data exchange are being created. This is so that in the end-customer solutions sector, barriers to market access are dismantled and diversity can be developed, allowing a broader layer of the population to sustainably meet their individual mobility needs. In addition, there is a need for action in the area of the public transport data infrastructure. This is to be homogenised, optimised, made connectable and made available to the public within the framework of "Transport Network CH" in the spirit of "Open Government Data". In this way Switzerland can assume a leading international role in terms of innovations in the area of mobility. The state uses the increasing need for integration of transport operators in order to strengthen interdisciplinary departmental and inter-office cooperation across all federal levels.

Key documents:

- Position paper of the Coordinating Agency for Federal Geographic Information (GCG) of 5 July 2018
- Multimodal mobility services - action plans: Mobility data and opening up sales by other mobility providers outside of public transport, 7 December 2018
- Supply and exchange of data for automated driving in road traffic - DETEC report of 7 December 2018
- Data as infrastructure for multimodal mobility services, Ecoplan report of 26 November 2019

⁸ CC 784.10

4.2.3. The energy networks in Switzerland are intelligent, secure and efficient

The energy networks (electricity, gas and heating) generate digital data and information and use these for data-intensive optimisation of network planning and operation. For example, the networks are developing new functionalities and form the intelligent link between energy production and energy consumption. Intelligent energy networks make it possible to cope efficiently with the increasing complexity of the decentralised, renewable energy production system. They support open energy markets as well as consumers by meeting the needs of digital business models in the market and transporting energy safely. Digitalisation enables close interaction among the networks, resulting in efficiency gains as well as cost savings.

Key documents:

- Digitalisation in the energy sector: Dialogue paper on the transformation process of 11 December 2018
- Smart Grid Roadmap Switzerland of 27 March 2015
- Energy strategy 2050
- Electricity networks strategy
- Revision of the Electricity Supply Act ESA
- Sustainable development strategy 2030 (*consultation process in summer 2020*)

4.3. Security

Maximum priority is to be given to protection from the risks of digitalisation, so that its opportunities can be best exploited for the well-being of the population in Switzerland. Key areas are the availability, integrity and confidentiality of information in the complex environment which results from the interaction of people, programmes and services. Protection and security aspects are therefore a priority in the configuration of digitalisation. Resilient design and the protection of critical infrastructures themselves are not the only key element for ensuring their longevity within the framework of digitalisation. Rather, this protection also extends to other areas of public life, in order to ensure the population's confidence in the efficiency of the state. Highly effective cooperation of all competent entities (Confederation and cantonal authorities, businesses and society) and systematic international networking are crucial for creating a safe environment. Individuals and businesses are being required to extend their security-related skills through their own efforts and to establish a security culture in the workplace. The protection of children and young people from harmful content and abusive behaviour in the online arena is also afforded a high priority. However, digitalisation does not only involve risks but can also contribute to earlier detection of dangers and a faster, more efficient response to crises.

Contribution of the field of action to the UN's sustainable development goals:

- Goal 9: to build resilient infrastructure, promote broad-based and sustainable industrialisation and foster innovation
- Goal 16: to promote peaceful and inclusive societies for sustainable development

4.3.1. Protection from cyber risks is ensured

Protection from dangers in cyberspace is a collective task for the Confederation, the cantons, businesses and society. The structures and processes for effective protection of the information and communications infrastructures which are critical for businesses, the population and the government are established in the respective areas of competency. The Confederation is increasing Switzerland's cybersecurity in cooperation with the cantons, the universities and the private sector, as well as at the international level. In this context it is essential that not only *ex-post* measures, but also *ex-ante* measures are envisaged, for example data security checks on components before they are deployed.

Key documents:

- National strategy of 18 April 2018 for the protection of Switzerland from cyber risks (NCS) 2018–2022
- Implementation plan of 15 May 2019 on the national strategy for the protection of Switzerland from cyber risks
- National strategy of 8 December 2017 for the protection of critical infrastructures 2018–2022

4.3.2. The opportunities of digitalisation will be used to increase security

Guaranteeing internal and external security is a collective task for the Confederation, the cantons, cities and municipalities, as well as the army. Participants exploit the opportunities of digitalisation to improve the prevention, repulsion and overcoming of state-backed or criminally motivated threats and actions and to deal with natural and man-made disasters and emergencies, among other things by increasing the resilience of infrastructures. Digitalisation has special importance in relation to prevention (the simulation of crisis situations or the representation of the situation on geo-information systems). When dealing with extraordinary events such as the Covid-19 pandemic, statistical data, real-time data from sensors and geo-information can contribute to a better understanding of the situation and to improving the effectiveness of the work of the security and law enforcement authorities of the Confederation and the cantons, the emergency services, the army and civil defence forces, within the framework of the Swiss Security Network. The Confederation ensures that digitalisation in the security sector takes place in a coordinated manner.

4.4. Environmental protection, natural resources and energy

Switzerland makes use of the opportunities of digitalisation by creating good general conditions for increased resource efficiency and improved security of supply, cost-efficiency and the environmental compatibility of the energy supply system. The production and consumption of electrical and electronic products and services are constantly growing. It is essential to limit to the socially desirable minimum the environmental and social effects by taking appropriate measures. ICT resource efficiency must therefore be further optimised. However, above all, ICT must assist in a targeted way to reduce consumption of resources in other areas.

Switzerland consistently takes measures to increase ICT resource and process efficiency, in order to reduce the negative effects on the climate and the environment. These include the targeted use of ICT, building up know-how specific to professions, new forms of funding and adaptations in the public procurement system. Digital products and services are being designed sustainably and produced cost-effectively in terms of technical challenges, health aspects, resource-saving aspects and energy consumption. In the case of long-term investments, an attempt is being made to consider their entire life cycle, so that investment, environmental impact and efficiency can be balanced.

Energy supply and the energy industry will become smarter, more flexible, more efficient and more sustainable thanks to the use of ICT. The technologies are being used to master the increasing complexity which results from the transition to the increased use of renewable energy sources. Digitalisation enables cost savings, e.g. via higher degrees of automation. The efficiency of the energy system as a whole is being continuously improved through new instruments, business models and transparency. Automated processes are well established in the energy industry. High availability and quality of data, as well as simplified access to information, allow new value-added services. The opportunities of digitalisation to increase flexibility, i.e. active control of production, decentralised storage and consumption, are being exploited and coordinated between participants and infrastructures (electricity, gas and heat) for stable, reliable and efficient operation.

Contribution of the field of action to the UN's sustainable development goals:

- Goal 7: to ensure access to affordable, reliable, sustainable and modern energy for all
- Goal 12: to ensure sustainable consumer and production patterns

4.4.1. The resource consumption of digitalisation is optimised

Switzerland's inhabitants are being informed about the opportunities and risks of digitalisation in relation to the consumption of resources. The life span of digitalised products must be extended, not deliberately shortened. Consideration must be given as early as the design stage to their possible re-use, recyclability and, where necessary, disposal. The potential economies of increased efficiency must be realised and not lost as a result of higher consumption at a different location. For a significant reduction of resource consumption and the associated environmental impact, however, there is an increased need for a holistic approach, particularly within the areas of nutrition, housing and mobility which are especially relevant to the environment. The opportunities and resource consumption of digital developments must be taken into consideration. The state, the private sector, science and society as a whole are needed in order to develop solutions which make a good life possible within the limits of the planet's resilience.

Key documents:

- Measures of the Confederation for a resource-efficient, sustainable Switzerland (the green economy), 19 June 2020
- "Environment Switzerland 2018" report of 3 December 2018
- Sustainable development strategy 2030 (*consultation process in summer 2020*)

4.4.2. The energy supply system is efficient, secure and reliable

Energy production and energy consumption are becoming increasingly easier to control, flexible and smart, thanks to the use of digital tools. On the basis of digital tools, the energy economy must be able to better link together the construction industry, the mobility sector and other areas of the economy in order to exploit the potential of achieving a system based on renewable energy, with added value, and to use it efficiently. For the digital transformation, obstacles must be constantly identified and dismantled, and constant risk assessments must be performed. Measures to disseminate knowledge about the potential of digitalisation create further incentives for this transformation. The state provides good, flexible basic conditions for a smarter digital energy supply system and ensures its ongoing further development. New innovative solutions and energy services will be supported and the basic regulatory conditions will be constantly examined and adapted.

Key documents:

- Digitalisation in the energy sector: Dialogue paper on the transformation process of 11 December 2018
- Sustainable development strategy 2016-2019 of 27 January 2016
- Smart Grid Roadmap Switzerland of 27 March 2015
- Energy strategy 2050
- Sustainable development strategy 2030 (*consultation process in summer 2020*)

4.4.3. The use of resources and energy is more efficient and more sustainable

Resource consumption can be limited and energy can be used more efficiently through the use of digital platforms, the use of data and the application of artificial intelligence. One prerequisite is data infrastructures in the energy sector on which applications can be developed for the more efficient use of resources and energy. Incentives for consumers to make decisions with greater awareness on the basis of digital tools, applications or platforms contribute to increasing energy efficiency. The framework conditions and digital solution approaches in the energy sector are increasingly based on sustainability.

Key documents:

- Energy strategy Switzerland (2021-2030)
- Sustainable development strategy 2030 (*consultation process in summer 2020*)

4.4.4. The basis for calculating environmental assessments has been improved

Digitalisation allows new possibilities in the sphere of protection of the climate and the environment. To enable digital technologies to be used more, and in a more targeted fashion, to reduce energy and materials consumption in all areas of life and work, the basis for calculation of environmental assessments and footprints in the area of ICT technologies and services must be improved. The data fundamentals are to be improved by Switzerland's participation in European and international programmes for earth observation, e.g. the "Copernicus" programme. Among other things they are to be able to be used with an environmental assessment database such as, for example, "ecoinvent" so that in future the increasing ICT share in the value-creation and supply chains for traditional products and services can be measured so that targeted measures can be taken.

Key documents:

- Measures of the Confederation for a resource-efficient, sustainable Switzerland (the green economy), 19 June 2020
- Green Economy action plan of 8 March 2013
- Sustainable development strategy 2030 (*consultation process in summer 2020*)

4.5. Political participation and e-government

Political participation reflects the participation of citizens in democratic life. Technological developments make new forms of participation in political processes possible and change the needs of citizens. At the same time, the processes of political participation are changing and forming new forums, which function differently and influence different participants than previously. These changes must be taken into consideration. Unrestricted access to instruments of political involvement allows all citizens to participate autonomously in political and public life.

The media make a substantial contribution to the functioning of democracy, to informing the population, to democratic opinion-forming and to control over state activity. Emerging online platforms and social media affect these important functions of the media for the public debate in a sustainable manner, by making possible new channels of communication, interactive exchange with the population and new differentiated business models.

The digitalisation of political rights is continuing to progress in accordance with the principle of “security before speed”. The transparency and trustworthiness of deployed systems are being supported on an ongoing basis.

It is a requirement of e-government to use technological developments to optimise administrative activity, in particular in the interaction between the authorities and the population as well as businesses. e-government contributes to Switzerland continuing to be one of the most attractive locations for organisations and businesses in the future and having an efficient administration.

Contribution of the field of action to the UN's sustainable development goals:

- Goal 10: to reduce inequality within and between states
- Goal 16: to promote peaceful and inclusive societies for sustainable development
- Goal 17: to strengthen the means of implementation and revitalise the Global Partnership for Sustainable Development

4.5.1. The public service in the media sphere promotes political participation and strengthens democracy

The media make an essential contribution to democratic opinion-forming. Balanced information, transparency and comprehensibility of sources of information constitute the foundation for this and enable people in Switzerland as well as Swiss citizens abroad to form an opinion independently and on an informed basis and to engage politically.

In the digitalised, globalised and increasingly fragmented media world, in which the population is increasingly turning away from traditional media and embracing internet offerings, there are also new risks. The functioning of the media for democratic opinion-forming is increasingly being challenged by the mass dissemination of deliberate misinformation and hate speech on social media. The trustworthiness of journalistic content can be reduced by these phenomena, and in the long term this can have a negative effect on trust in the democratic constitutional structure and democratic institutions.

In this context, the public service media are more important than in the past as a point of orientation for a better understanding of the political and social environment. This presupposes trustworthy, independent and high-quality media offerings on the internet too, addressing the population as a whole. The public service promotes understanding, cooperation and exchanges between the regions, different language communities, cultures, religions and social groupings and takes into consideration the characteristics of the country and the needs of the cantons. It sup-

ports independent political participation and strengthens democracy as well as guaranteeing fundamental rights. Switzerland has also opted for high-quality and ethical responsibility in journalism.

Key documents:

- Federal Council Report of 5 December 2014 “Securing the political and democratic functions of the media”
- Report of 17 January 2016 on the public service in the media sector
- Media perspectives report, estimates of future developments in the media landscape of Switzerland, of 17 April 2020
- Message of 29. April 2020⁹ on the package of measures for the benefit of the media

4.5.2. New technologies are used to strengthen political participation by the population and businesses

Switzerland sees new technologies as an opportunity for democracy. Digitalisation can contribute to broader political participation on the part of the population and groups in civil society. The main task of the state is to prepare and make available to the public the data necessary for ICT applications in the political arena (Civic-Tech applications). In addition, it must guarantee the basic regulatory and institutional conditions so that political participants, civil society and private enterprises can take advantage of digitalisation in the political sphere. The basic regulatory and institutional conditions must also serve to prevent or correct undesirable developments. In addition, digital access to its archived documents also ensures that the Confederation’s documents can be consulted at any time and regardless of location.

The digitalisation of political rights in the narrower sense (electronic voting, e-collecting) is continuing in accordance with the byword of “security before speed”. ICT applications in this area must be secure and trustworthy. The task of the state is to define the relevant essential requirements and to ensure they are met. The effects of the new participatory channels on democratic decision-making must be examined and risks which threaten confidence in majority decisions must be tackled promptly. Adequate consideration is given to full accessibility as early as the commencement of technical developments: full accessibility of digital products and services must permit equal-opportunity access to the exercising of the political rights of people with disabilities.

Key documents:

- Federal Council Report on electronic voting of 14 June 2013
- Final report of the team of experts on electronic voting (EXVE) of April 2018
- Press release of 27 June 2019: e-voting: Federal Council reframes trial phase and delays introduction as a regular voting channel
- Federal Council report on disability policy of 9 May 2018
- Federal Council report of 8 May 2020 on “Civic Tech”
- Swiss federal archives strategy 2016-2020

⁹ Federal Gazette 2020 4485

4.5.3. The population and the economy can use digital methods to conduct their business with the authorities

To enable the population and businesses to conduct their business with the authorities electronically and efficiently regardless of their location, the electronic services provided by authorities will be provided in such a way that they can be used centrally, without barriers, without any specific knowledge of official competencies and without specialised technical knowledge. The business processes of the administration are being matched consistently to customers' needs, simplified, standardised and optimised in terms of their efficiency. ICT support is being further developed in order to optimise the digital transformation of the administration. To this end the electronic offerings for businesses are being enhanced, in particular via EasyGov.swiss. Individuals and businesses provide the administration with the same information only once (implementation of the "once only" principle). The administration uses the information across different organisations, giving due consideration to data protection and the decentralised federal structures.

Key documents:

- E-government strategy Switzerland 2020-2023 of 1 January 2020
- ICT strategy of the Confederation 2020-2023 of 3 April 2020
- Federal Council report on disability policy of 9 May 2018
- e-government Switzerland implementation plan 2020-2023 of 14 October 2019
- Public law agreement of 1 January 2020 on e-Government co-operation in Switzerland 2020
- Tallinn e-Government Declaration of 6 October 2017
- Confederation message of 20 February 2019¹⁰ on promoting Switzerland as a location 2020-2023
- Multiple use of data: Swiss statistics system and the data management system of the Confederation

4.5.4. The basis modules and infrastructure for a country-wide expansion of the digital administration are available nationally

Basic services in digital administration are fundamental for user-friendly and efficient conclusion of electronic processes. The provision of services and infrastructures for identity and access management and for the use and management of data are key. The goal of the common activities of the Confederation, the cantons and municipalities is to establish the most important national basic services such as a nationally recognised electronic identity and to draw up a strategy for common data administration. Where necessary, the administration provides the appropriate preliminary services, opts for open interfaces and the construction of services which can be used collectively.

Key document:

- e-Government strategy Switzerland 2020-2023 of 1 January 2020
- Final "Digital administration" report: Project to optimise federal state control and co-ordination of 24 October 2019

¹⁰Federal Gazette 2019 2365

4.5.5. Networking is strengthened at all federal levels

In Switzerland's federal system, exchanges of experiences and cooperation are particularly important. Special attention must therefore be paid on the one hand to coordination between the Confederation, the cantons and the municipalities and on the other hand to cooperation between the organisations which are active in the area of digitalisation throughout Switzerland. Harmonisation of the various official programmes and projects is being strengthened in order to combine resources and avoid redundancies.

Key document:

- e-Government strategy Switzerland 2020-2023 of 1 January 2020
- Message of 21 November 2018¹¹ on the funding commitment for the national secure data exchange system SDVS
- Pilot project for a mobile broadband security communication system MSK, 29 January 2020
- Final report "Digital management: Project to optimise federal state control and coordination" of 24 October 2019

¹¹ Federal Gazette 2018 241

4.6. The economy

Digitalisation is changing the economy and the world of work. It is having a substantial effect on constantly changing structures and economic growth. Markets and value-creation chains are changing. There is hardly any sector of the economy which remains unaffected, although not all sectors are affected to the same extent. For a country like Switzerland which is lacking in natural resources, it is therefore important to exploit the potential arising from digitalisation in the best possible way. Optimal positioning and the ongoing development of Switzerland as an attractive location for businesses is of great interest: with a pro-active approach within the area of digitalisation and innovative concepts, Switzerland can position itself ahead of the pack and strengthen its attractiveness as a location for businesses. This will be achieved by creating the most favourable framework conditions for digital business models and innovations that contribute to the sustainability of public finances and the common good. Cities and municipalities, rural areas and mountain areas should benefit from this development.

Businesses should be able to benefit optimally from digitalisation and become pioneers in the application of ICT. It is important to further develop and future-proof Switzerland's strengths, particularly the flexible labour market, excellence in training, research and development, and high-quality infrastructures. SMEs and start-ups play an important role here because they are often drivers of innovation which must not be underestimated. In addition, administrative obstacles must be removed and the exchange between businesses and the authorities must be handled centrally. Developments in other areas of the economy and in the European digital single market should be closely monitored and their possible effects on the economy and society of Switzerland should be analysed.

Contribution of the field of action to the UN's sustainable development goals:

- Goal 1: to end poverty everywhere and in all its forms
- Goal 2: to end hunger, achieve food security and improve nutrition and promote sustainable agriculture
- Goal 8: to promote long-term, inclusive and sustainable economic growth, productive full employment and decent work for all
- Goal 11: to make cities and settlements inclusive, safe, resilient and sustainable

4.6.1. Switzerland is characterised by a high employment rate and good-quality working conditions

Switzerland uses the structural changes in the world of work resulting from digitalisation for its own benefit. The basic conditions for exploiting the opportunities of digitalisation and for overcoming the associated challenges will be optimised. The Swiss employment market also possesses the flexibility necessary for the challenges of the digital transformation and is characterised by a high employment rate and high-quality conditions of employment.

The social security system also exhibits a high degree of adaptability in relation to social, economic and technological developments. The basic conditions for the development of innovative business models will be improved, without involving new risks of insecurity and risks of shifting burdens onto the public and the Federal budget.

4.6.2. Switzerland will provide room for the development of new business models

Attractive general conditions in terms of economic policy ensure that Switzerland, as an innovative national economy, uses digitalisation as an engine for development and renewal. Innovative business models have sufficient space to develop. Young companies can be set up quickly and smoothly. They have access to well-trained workers and can quickly grow fast enough so that the continued presence of the company in Switzerland remains an attractive proposition and jobs are created and retained. At the same time, it is important to anticipate the challenges associated with digitalisation and to tackle possible regulatory issues in good time. These include, for example, issues of international market access, legal certainty in handling new technologies, optimisation of the basic conditions for digital ecosystems, the creation of trustworthy data spaces or timely taxation. Regulatory obstacles to digital business models are continuously dismantled.

Key documents:

- Federal Council Status Report of 6 December 2019 on the Swiss national economy
- Federal Council Report of 11 January 2017 on the central general conditions for the digital economy
- Report on findings of the “Digital Test” survey of 29 August 2018, examination of regulatory obstacles to digitalisation
- Statement of the SIF of 31 January 2020 on taxation of the digitised economy
- Message of 26 February 2020¹² on the promotion of education, research and innovation in the years 2021-2024 (education, research and innovation message)
- Message of 20 February 2019¹³ on promoting Switzerland as a location 2020-2023
- Tourism strategy of the Confederation, 15 November 2017

4.6.3. An innovative, globally networked fintech sector improves the competitiveness of the Swiss finance industry

Internationally, Switzerland enjoys a reputation as an honest, trustworthy, reliable banking and insurance location. Combined with technological expertise and innovative capability, along with a well-developed infrastructure, Switzerland can protect and further enhance its position thanks to favourable conditions of the fintech sector.

Key documents:

- Federal Council Report of October 2016 on the financial market policy for Switzerland as a competitive finance location
- Federal Council Report of 14 December 2018 “Legal basis for distributed ledger technology and blockchain in Switzerland”
- Message of 27 November 2019¹⁴ on the Federal law for the amendment of federal law on developments in of the technology of distributed electronic ledgers

¹² Federal Gazette **2019** 3681

¹³ Federal Gazette **2019** 2365

¹⁴ Federal Gazette **2019** 233

4.6.4. The cities, municipalities and regions of Switzerland are characterised by a high capacity for innovation

Both the cities and central regions and the rural regions and mountain areas will seize the opportunities which digitalisation offers them and will strengthen their economies through better integration between participants and by better links between participants and experts. In this area, for example, new marketing channels and means of cooperation, increasing flexibility in the employment market, the concomitant new forms of work and the use of data play a role.

In the area of location promotion (SMEs, tourism and regional policy, plus export promotion and location promotion), greater use must be made of the opportunities of digitalisation to improve the general conditions for SMEs, to increase the capabilities of players in the economy and the competitiveness of the regions, as well as to raise the profile abroad of Switzerland as a location for business.

The Confederation supports the cantons, cities and municipalities within the framework of its existing instruments for the implementation of Smart City, Smart Village and Smart Region initiatives. In particular, the Confederation supports the exchange of experiences and knowledge transfer among and between cities and regions. The Confederation increases the national and international visibility of the activities of the cantons, cities and municipalities and promotes awareness of problems and acceptance of initiatives. In order to increase the effectiveness of its support, the Confederation coordinates its activities in this area.

Particular importance is attached to the use of geographical data. Geo-data flow is constantly increasing. Ever more frequently in real time too, geo-data increasingly occupies a focus in modern area planning. At all levels of the administration it is important to have available genuine "intelligent data" in the service of the Smart City, Smart Village or Smart Region.

Key documents:

- Message of 20 February 2019¹⁵ on promoting Switzerland as a location 2020-2023
- Tourism strategy of the Confederation of 15 November 2017

4.6.5. Smart farming technologies contribute to the competitiveness and sustainability of Swiss agriculture

Swiss agriculture and food production are driving the development and expansion of smart farming. People are freed from routine tasks by the application of smart farming technologies; they can carry out their work more efficiently and use resources more purposefully. Production processes are therefore optimised, thereby reducing the impact of food production on the environment and at the same time improving the quality of products. More sensor-controlled, automated processes will become available for optimising production systems and for quality assurance. This contributes to an increase in competitiveness and to the sustainability of Swiss agriculture.

Key document:

- Charter of 19 June 2018 on the digitalisation of Swiss agriculture and food production

¹⁵ Federal Gazette 2019 2365

4.6.6. Continuity of digital working methods increases the productivity of the construction industry

The planning, building and property sector is characterised by heterogeneity and a high density of interfaces. The efficient use of digital working methods requires the standardisation and harmonisation of digital processes across all industries and trades: from the property owner via building and production planning to operation and use, as well as approval authorities, land register offices and insurance companies. Existing processes, norms and standards must be updated and harmonised or even drawn up for the first time and established.

By encouraging the continuity of digital processes across the entire value-creation chain of planning, construction and use of buildings, the productivity of the Swiss construction industry will be ensured and increased, in the interest of both public clients and the country's economic attractiveness.

4.6.7. Switzerland will take advantage of its opportunities with regard to the virtual international economy

At the beginning of 2020, the European Union (EU) adopted its new work programme. This includes its strategy on shaping Europe's digital future, with the promotion of a fair and competitive economy, the creation of European data spaces and the ongoing development of artificial intelligence (AI). Switzerland is closely connected to the European economic area. However, at the same time digital products and services in trade relations with other regions are becoming more important. Switzerland observes regulatory developments, in particular within in the AI sector and the digital economy, as well as the creation of data spaces in the European Union. Likewise, digital developments in other world markets which are important for Switzerland will be monitored. To this end Switzerland will conduct an active dialogue with the EU Commission, with other countries and in international organisations such as the Organisation for Economic Cooperation and Development (OECD) and the World Trade Organisation (WTO). In the WTO, Switzerland plays an active part in the multilateral negotiations on e-commerce for the promotion of digital commerce, the elimination of barriers to trade and the development of common basic principles for national regulation. The objective is to exploit the opportunities of these digital markets and data spaces for Switzerland and to avoid the risk of unfair practices and marginalisation.

Key documents:

- Federal Council foreign trade report 2019 - focus on digitalisation and external trade
- Strategy of the EU Commission: A Europe fit for the digital age, February 2020
- EU Commission communication: A European data strategy, February 2020
- EU Commission communication: Shaping Europe's digital future, February 2020
- EU Commission communication: White paper of 19 February 2020 on artificial intelligence
- OECD Going Digital Framework

4.7. Data, digital content and artificial intelligence

Data is a key raw material in the knowledge society and the digital economy. This requires it to be available in high quality. In so far as there are no statutory regulations to the contrary, data should be made publicly accessible and available. Thanks to the technological possibilities of collecting, storing and processing data, the potential arises for new, innovative products and services as well as for optimisation of processes and decisions. This presupposes, however, that much data can be used beyond its originally intended purpose. The trustworthiness, security, serviceability, accessibility, verifiability and availability of data therefore become key concerns in a digitalised society. In order to guarantee these, new and cooperative forms of data use may possibly be needed in which residents, as well as businesses, can exercise the greatest possible control over their data.

However, apart from the opportunities it is also necessary to address the risks of increasingly data-based decision-making, including the lack of transparency of computer-based conclusions and possible unequal treatment of people, who have a right to equal treatment. Attention must also be paid to question of sustainable management of data which uses as few resources as possible.

Contribution of the field of action to the UN's sustainable development goals:

- Goal 8: to promote long-term, inclusive and sustainable economic growth, productive full employment and decent work for all
- Goal 16: to promote peaceful and inclusive societies for sustainable development

4.7.1. Switzerland has a modern, coherent legal foundation in terms of the rights to data and its use

Switzerland will constantly monitor whether its legislation and the international agreements for the data economy are optimally designed. With the aid of a modern and coherent legal foundation, the potential of data for the economy and society can be realised. Switzerland is developing an internationally coordinated data policy, which among other things covers issues of data sovereignty, access to government data, international data traffic, regulation of competition intellectual property, data protection and handling localisation guidelines.

Key documents:

- Message of 15 September 2017¹⁶ on the federal law on total revision of federal legislation on data protection and changes to other ordinances relating to data protection
- Federal Council foreign trade report 2019 - focus on digitalisation and external trade
- Experts' report of 15 February 2018 on data portability and regulations concerning re-use of data
- Experts' report of 22 December 2017 on the possibility of the introduction of a data portability right in Swiss law and on the legal position of Personal Information Management System (PIMS)
- Message of 6 December 2019¹⁷ on the approval of the protocol relating to the amendment of the Data Protection Convention of the Council of Europe

¹⁶ Federal Gazette **2019** 6941

¹⁷ Federal Gazette **2020** 565

4.7.2. Appropriate datasets are available as open data

The processes of the public sector for collecting, storing and processing data are being further developed so that they relieve the administrative burden on residents in Switzerland, as well as businesses, and are being designed to be efficient and sustainable. In order to efficiently exploit the potential arising from this for an orderly implementation of the “once only” principle, the co-operation models must be further developed in various areas. Interoperability between the individual data collections must be guaranteed so that data can be exchanged. The government's data contributes to greater value creation and to positioning Switzerland as an attractive place to live and conduct business.

Data collected by the public authorities or on their behalf is in principle published as “Open Government Data” in an open and machine-readable form. This corresponds to the “open by default” principle, as provided for in the OGD strategy 2019-2023. In addition, further use of government data which is made available is supported and promoted at all federal levels, as is cooperation between private individuals and the public sector.

Open access to appropriate research data and results also makes a substantial contribution to improving the effectiveness, transparency and the reproducibility of scientific research and is being monitored as part of the open data strategy of the universities and the Swiss National Science Foundation. With regard to ensuring access to “Open Government Data” in other countries for Swiss researchers and businesses abroad, Switzerland is committed to an open data strategy abroad within the framework of international negotiations (e.g. the WTO).

Switzerland will also opt in the coming years for access to appropriate factual data which is not generated by the administration and the scientific community. In the search for solutions, account will be taken of the different interests of the participants in the data sector.

Key documents:

- Open Government Data strategy 2019-2023 of 30 November 2018
- Benchmark figures for Switzerland's data policy of 9 May 2018
- National Open Access Strategy of Swiss Universities of 31 January 2017
- Position paper of the Coordinating Agency for Federal Geographic Information (GCG) of 5 July 2018
- 2017 data innovation strategy of the Swiss Federal Statistical Office
- Multiple use of data: the Swiss statistics system and the data management system of the Confederation
- Report of the group of experts on the future of data processing and data security of 17 August 2018
- Report of 15 October 2019 on the recommendations of the group of experts on the future of data processing and data security: Information and further procedure

4.7.3. Access to data and the data infrastructures in the energy sector will be upgraded

Access to digital data and information in the energy sector will be improved and harmonised. The data infrastructures necessary for this are being built and expanded. Networking of different datasets is supported and the coordination of the participants in the energy sector is being improved; this improves market efficiency, capacity and security of supply. Data infrastructures which are accessible as openly as possible support the reduction in energy consumption, the use of renewable energies, making production and consumption more flexible and enabling the coupling of energy systems. Transparency and the active integration of consumers will be improved. Access to data and the data infrastructures does not depend on whether proprietary or open-source software is used.

Key documents:

- Digitalisation in the energy sector: Dialogue paper on the transformation process of 11 December 2018
- Data hub Switzerland, cost-benefit analysis and the need for regulatory action, report of 1 October 2018
- Reports and studies in relation to the revision of the Electricity Supply Act

4.7.4. The accessibility and availability of data from the planning, building and property sectors are guaranteed

The majority of all human activities take place in the built environment. The process of planning, building and managing buildings and properties is being increasingly digitised. The planning, building and property industry is national and global, and both a provider and consumer of data and processes across almost all areas of human activities.

The data resulting from the planning, building and use of buildings must be made accessible to and usable by all, as far as is possible and reasonable. Together with the industry, an overall strategy is being drawn up for this purpose. Then an attempt will be made to acquire, store and process the data using appropriate methods and media. These will be made available, if possible.

4.7.5. Switzerland has trustworthy data spaces in which residents can exercise control over their own data

Data use and data exchange are increasingly being organised with progressive networking in webs of relationships which are dependent on one another. Switzerland is making use of this development and supports access to trustworthy data areas for individuals, businesses and the public sector. In this way, citizens, businesses and all participants in society can exercise the greatest possible control, in the sense of digital self-determination over their data. There are clearly regulated conditions between data producers, data users and persons concerned which permit all participants to make available existing volumes of data within ecosystems safely and independently beyond its originally intended purpose. These data spaces make it possible, both within sectors and across sectors, to drive innovations and new business models. In addition, in order to make the opportunities of international digital markets and data spaces usable for Switzerland too, cooperation and networking with international partners will be actively sought.

Key documents:

- Message of 15 September 2017¹⁸ on the federal law on total revision of federal legislation on data protection and changes to other ordinances relating to data protection
- Report of the group of experts on the future of data processing and data security of 17 August 2018
- Report of 15 October 2019 on the recommendations of the group of experts on the future of data processing and data security: information and further procedure

4.7.6. The general conditions for the transparent and responsible application of artificial intelligence are optimised

The increasing use of artificial intelligence (AI) is changing the economy and society. Nationally and internationally, Switzerland should commit to monitoring and assessing the ensuing consequences for our private and working lives and to consider the developments at the international and in particular also at the European level. In Switzerland, the basic conditions must be shaped in such a way that, where advisable, algorithmic decision-making systems are transparent and verifiable, that responsibilities are regulated and that the systems in use respect social values and the legislation. The measures launched for this purpose within the framework of the existing competencies and authority of the Confederation will be continued.

Key documents:

- Challenges of artificial intelligence - Report of the "Artificial intelligence" interdepartmental working group to the Federal Council of 13 December 2019
- Recommendation of the Council on Artificial Intelligence of the OECD of 22 May 2019
- EU Commission communication: White paper of 19 February 2020 on artificial intelligence
- Message of 15 September 2017¹⁹ on the federal law on the total revision of federal legislation on data protection and changes to other ordinances relating to data protection

4.7.7. Access to digital content is improved

Consumers are demanding that they should be able to access content they have purchased everywhere and on the move. This demand comes up against barriers relating to the transnational portability of copyright-protected content in Europe and throughout the world. Possibilities should be explored in order to give consumers in Switzerland the possibility of transnational portability of digital content. Property rights and copyright must be respected.

Key documents:

- Federal Act on Copyright and Related Rights of 9 October 1992²⁰
- Message on the amendment of copyright legislation, on the approval of two World Intellectual Property Organisation agreements and on the implementation thereof

¹⁸ Federal Gazette 2019 6941

¹⁹ Federal Gazette 2019 6941

²⁰ CC 231.1

4.7.8. The need for a “Swiss Cloud” and its feasibility have been examined

The use of cloud services enables great flexibility and innovative capability under economically favourable conditions. Such services, mostly provided by global providers, (so-called “public clouds”) are in principle attractive. Today there is hardly any way around them. Significant advantages (such as scalability, speed, cost-efficiency, professionalism, quality and innovative capacity) are, however, also offset by disadvantages which may limit the scope for action, create dependencies, harbour risks or impair sovereignty.

For this reason, the Confederation is clarifying by way of a feasibility study whether and in which areas there is a need for action, so that both data sovereignty can be improved and dependence on the large international public cloud service providers can be minimised in the medium to long term.

4.8. Social affairs, healthcare and culture

Against the background of social and demographic developments in Switzerland, innovative technologies for older persons, the disabled, people with a migration background and people with special needs are becoming more and more important. On the positive side: the innovations with new technical possibilities for support and facilitation in everyday life, with the elimination of obstacles and new possibilities of vocational integration. On the negative side: they can lead to comprehensive surveillance and to greater marginalisation of disabled people. It is therefore crucial that in the course of the application-based development of technology the needs of these groups of people are considered and innovative possibilities of social and vocational integration are supported. In addition, within the framework of research work on the digital transformation in Switzerland, its effects on the social groups mentioned must also be analysed and solutions developed which contribute to improve equal-opportunity participation for all.

Innovative and intelligent technologies are affecting us in more and more areas of life and work, for example in the form of telemedicine services or in the area of assistance systems and robotics. Technical specialisation in the healthcare sector means that more and more healthcare specialists from different professional groups are involved in the treatment of patients. Consequently the number of people who have to access more and more data independently of time and location is increasing. Digitalisation in the healthcare sector demands solutions which are technically interoperable and which consequently enable better networking, integration and coordination of treatment processes. Electronic health services must be further refined and data exchange between healthcare facilities must be made more efficient in order to guarantee high-quality patient care throughout the treatment chain.

In the cultural sphere, digitalisation offers new possibilities of promoting cultural diversity, facilitating access for all to cultural heritage and, by means of the new technologies, of promoting innovative types of creation, their dissemination and acceptance. Knowledge transfer and cooperation in the area of transversal digital projects should be supported and understanding between social, linguistic and cultural communities should be strengthened through intensified dialogue with participants.

Contribution of the field of action to the UN's sustainable development goals:

- Goal 3: to ensure healthy life and well-being for all at all ages
- Goal 9: to build resilient infrastructures, promote broad-based and sustainable industrialisation and foster innovation

4.8.1. Barrier-free and non-discriminatory access to digital products and services is guaranteed

Switzerland is committed to all residents having equal-opportunity, barrier-free and non-discriminatory access to innovative technologies and services. Older persons, the disabled, people with a migration background and people with special needs, in particular the socially disadvantaged and those remote from the education system, must be able to use these technologies to remove obstacles. The goal is to facilitate their inclusion in social and everyday vocational life and at school and in this way to support them to lead an independent life. The services provided by the authorities on the internet must be based on international IT standards concerning accessibility.

Within the framework of international cooperation on innovation, research and development supports assistance technologies and innovative services targeted at the individual needs of the above-mentioned social groups. To ensure that these technologies and services can actually be used by the target groups, the aids delivered by the disability and accident insurance sector should be adapted to technological progress and their dissemination, availability and funding should be guaranteed.

Key documents:

- Federal Council report on disability policy of 9 May 2018
- Research program “Digital transformation” (NFP 77)

4.8.2. Networking the participants in the healthcare sector enables made-to-measure health provision

Via the electronic patient dossier, people in Switzerland can access their health data and can make it accessible to the health professionals of their choice independently of place and time; great importance is attached to the protection of personal data.

Patients are actively involved in decisions about their health-related behaviour and their health problems, thereby improving their health-related skills. New technologies and the prudent and trustworthy use of health data promote integration in the health sector as well as qualitatively better, more secure and more efficient processes. This focus on the treatment path of patients can be implemented only if the Confederation, the cantons and private participants cooperate more and coordinate their activities. At the same time, the principle of informational self-determination and the voluntary principle must retain a high value. Only in this way can it be ensured that social solidarity is not put at risk

Key documents:

- eHealth Switzerland strategy 2.0 of 14 December 2018
- Health strategy 2020
- Health strategy 2030

4.8.3. Facilitating access to cultural creation and cultural heritage strengthens cultural participation

Digital channels and platforms facilitate access to cultural creativity and cultural heritage and ensure broad social participation in cultural life. The Confederation supports the development, production and dissemination of digital culture and promotes cultural participation and understanding between social, linguistic and cultural communities. The accessibility of the analogue cultural heritage in archives, libraries and museums is improved by digitalisation measures. The long-term availability of digital cultural heritage in archives, libraries and museums and the transfer of knowledge and networking in the sphere of transversal projects are guaranteed.

Key documents:

- Strategy of the Swiss National Library 2020-2028
- The Federal Council's strategic goals for the Pro Helvetia Foundation 2016-2020 of 4 December 2015
- Cultural message 2021-2024²¹

4.8.4. The digital transformation process takes account of the health and well-being of the population

Progressive digitalisation and the increasing use of electronic devices lead to changes in our habits and our behaviour. These changes may involve negative effects on health. The digital transformation process must therefore be accompanied by targeted measures to avoid any negative effects on the health of the population, as far as possible.

Key documents:

- Health strategy 2030
- Research programme "Non-ionising radiation – Environment and health" (NFP 57)

²¹ Federal Gazette 2020 60444

4.9. International commitment

In its Foreign Policy Strategy (FPS) 2020-23, the Federal Council defined digitalisation as one of four thematic priorities for the first time. In doing so, it stated that it wanted to further develop Switzerland's digital foreign policy. It is taking the postulate 17.3789 Bégli as an opportunity to present a specific implementation strategy for FPS 2020-23 before the end of 2020, which will explain the digital foreign policy concept, concretise the corresponding guidelines of FPS 2020-23 and define the individual foreign policy fields of action.

The following elements will have to be implemented in the light of the implementation strategy mentioned above.

Contribution of the field of action to the UN's sustainable development goals:

- Goal 9: to build resilient infrastructure, promote broad-based and sustainable industrialisation and foster innovation
- Goal 16: to promote peaceful and inclusive societies for sustainable development
- Goal 17: to strengthen the means of implementation and revitalise the Global Partnership for Sustainable Development

4.9.1. Switzerland is shaping the international discussion about the future of digital space and its governance

Switzerland continues to raise its profile in the digital foreign policy area and is strengthening its role in shaping global digital governance. It is committed to the inclusion of all players concerned and contributes to finding new solutions. At the global level, Switzerland pursues the goal of an open and safe digital space which is based on international law and in which people and their needs occupy a central position. The rule of law and universal human rights, such as freedom of opinion and information and the protection of private life, must also be guaranteed online. Rights of freedom such as freedom of the press must be defended. As a bridge-builder, Switzerland wishes to contribute to the implementation of the recommendations of the High Level Panel of UN Secretary-General Guterres on digital co-operation, by helping to develop new governance models. The international city of Geneva, as a global centre for digital policy, will continue to promote stronger networking of participants, interdisciplinary cooperation and increased involvement of developing countries. Existing forums are being strengthened and the networking of international organisations, NGOs and think tanks based in Geneva is being promoted in order to make greater use of their potential. Initiatives supported by Switzerland, such as the "Geneva Internet Platform" or the "Geneva Science and Diplomacy Anticipator" foundation, will continue to be used and developed.

Key documents:

- Foreign policy 2019 report of 29 January 2020
- Foreign policy strategy 2020-2023 of 30 January 2020
- Security policy report 2016 of 24 August 2016
- Report of the High Level Panel on Digital Cooperation 2019
- Results of the UN World Summit on the Information Society (WSIS) 2003 and 2005
- Results of the WSIS+10 Review process

4.9.2. Switzerland is committed to the digital self-determination of individuals and the creation of cross-border data spaces

Switzerland is committed, nationally and at the European and global level, to innovative and secure methods which promote the exchange of data and contribute to social and economic development in the digital space which is as free and at the same time as trustworthy as possible. Switzerland is committed, along with its international partners, to digital self-determination and a digital space in which citizens play a determining role in the development of social and economic digital ecosystems. On this basis Switzerland is actively shaping global data governance systems and promoting networking, along with the establishment of corresponding international data spaces, in order to promote their interoperability with Switzerland and prevent new barriers. In this connection, it is building cooperation with international partners who are pursuing similar goals, for example with the EU and its member states, with the United Kingdom and with states outside Europe.

Key documents:

- Foreign policy strategy 2020-2023 of 30 January 2020
- EU Commission communication: A European data strategy, February 2020
- EU Commission communication: Shaping Europe's digital future, February 2020
- OECD Going Digital Framework

4.9.3. Switzerland is committed to a safe and trustworthy cyberspace

Switzerland is committed to the application of clear rules in cyberspace and compliance with the principle of "right before might". The recognition of, compliance with, and implementation of international law constitutes the foundation for a safe, open and free digital space based on clear rules and mutual trust. To this end, Switzerland is committed to intergovernmental confidence-building and to the promotion of peace, in particular within the framework of the Organisation for Security and Co-operation in Europe. It carries over its commitment from the "offline world" to the "online world" and continues to raise its profile in the area of digital foreign policy by contributing to the minimisation of the risks in cyberspace. With regard to cybersecurity, Switzerland supports the expansion and building-up of its own capabilities and, in view of the distinct global interdependencies, also contributes as far as possible to the development of capacities in other countries. Also, with regard to cyberspace, Switzerland can intervene as a bridge-builder by bringing together representatives of all the players involved in order, for example, to investigate by means of its own initiatives such as the "Geneva Dialogue on Responsible Behaviour in Cyberspace", to promote responsibilities in cyberspace or to develop new models of governance. Furthermore, Switzerland is committed to internationally coordinated measures to prevent and combat deliberate disinformation, as well as hate and terror propaganda. These phenomena are increasingly challenging global security policy and the functioning of democratic decision-making.

Key documents:

- National strategy of 18 April 2018 for the protection of Switzerland from cyber risks (NCS) 2018–2022
- Implementation plan of 15 May 2019 on the National Strategy to Protect Switzerland from cyber risks
- Foreign policy 2019 report of 29 January 2020
- Foreign policy strategy 2020-2023 of 30 January 2020
- Security policy report 2016 of 24 August 2016
- Results of the UNGGE: 2010, 2013, 2015
- Resolution No. 1202 of 10 March 2016 of the Permanent Council of the OSCE concerning 16 confidence-building measures of the OSCE

4.9.4. International norms and standards reflect the interests of Switzerland

Norms and standards are a prerequisite for the application and implementation of digital methods across different sectors. Switzerland as a centre of knowledge with highly-qualified specialists from theory and practice should bring its knowledge and interests to international work on standardisation to a greater degree. In Switzerland norms and standards are compiled not sovereignly but under the “militia” system. This system comes up against its limits of performance with internationalisation. In the short term, existing structures must be strengthened and supported. In the longer term, sustainable structures must be found which are up to the challenges of internationalisation in the sphere of regulation and standardisation.

4.9.5. Switzerland is committed to achieving the goals of the UN's Agenda 2030 with the aid of new technologies

Switzerland will apply the new technologies to achieve the goals of the UN's Agenda 2030 for sustainable development. Switzerland will thereby exploit the potential of new technologies in international cooperation, i.e. in combating poverty, in good governance guidance and economic development, in emergency assistance, in the protection of human rights and in its response to global challenges (“Tech4Good”). Innovative technological approaches increase the effectiveness of programmes and projects and can accelerate the implementation of Agenda 2030, in particular for universal and affordable access of the entire population of the world to the internet, high-quality educational provision and equality of the sexes. In this context, high-grade data plays a central role. Switzerland is also committed to the strategic linking of the results of the UN World Summit on the Information Society (WSIS) with the goals of Agenda 2030 for sustainable development.

The importance of humanitarian protection and the demands on humanitarian organisations are changing in a world in which prosecution, surveillance and war take place not only in the physical, but increasingly also in the digital sphere. For humanitarian participants in particular, who manage highly sensitive data of persons needing protection, a secure data environment is essential. With its humanitarian tradition, Switzerland is committed within international bodies to bring up for discussion humanitarian issues, to strengthen the competencies of humanitarian organisations accordingly and to ensure the fulfilment of humanitarian mandates in the digital age.

Key documents:

- Agenda 2030 for sustainable development (Sustainable Development Goals, SDG)
- Strategy for international cooperation 2021-2024
- Results of the UN World Summit on the Information Society (WSIS) 2003 and 2005
- Results of the WSIS+10 Review process
- The Global Fundamental Geospatial Data Themes, New York 2019

5. “Digital Switzerland” - Implementation and dialogue

5.1. Networking and cooperation of all stakeholder groups

The Federal Council invites all of digital Switzerland's stakeholder groups, in particular the cantons, cities and municipalities, to exchange information on their projects for the implementation of this strategy and on relevant cross-sectoral topics and to exploit any possible synergies. The administration is also cooperating closely with businesses, civil society and the world of science and in this way contributes to the efficient implementation of the strategy. Especially in areas of activity with responsibilities shared between the Confederation, the cantons and private organisations (e.g. in the healthcare and education sectors), sustainable digital integration is possible only if there are permanent forums or platforms for cooperation.

This dialogue increases awareness of the necessity for a collective commitment to digital Switzerland. It also serves to promote connections between the participants and to guarantee an exchange of information about the measures in progress.

Until the end of 2020 the Federal Department of the Environment, Energy and Communications DETEC is responsible for coordinating the Confederation's implementation measures within the federal administration and for the advancement of the strategy. This work is carried out within the framework of the Confederation's “Digital Switzerland” Coordination Group. The Confederation's “Digital Switzerland” Office, based within OFCOM, supports the Coordination Group in terms of organisation and content. From 1 January 2021 onwards coordination within the federal administration will be assured by the Federal Chancellery.

5.2. The “Digital Switzerland” action plan

The “Digital Switzerland” action plan includes the measures which make a concrete contribution to the achievement of the goals of the “Digital Switzerland” strategy. The measures taken by the federal administration constitute the starting point. The Departments and Federal Offices fund their implementation measures within the framework of their regular budgets and ensure evaluation of these measures where necessary. The “Digital Switzerland” action plan is published on the www.digitaldialog.swiss website and is regularly updated.

Digital Switzerland is a joint task of authorities at all levels of the state, the economy, science, civil society and politics. This must also be reflected in the action plan for this strategy. Selected projects of other participants which contribute to achieving the goals of the strategy and which meet pre-defined criteria can also provide inspiration and promote emulation. They may therefore be published in the “Digital Switzerland” action plan. The agencies responsible for their implementation provide the necessary resources.



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„Digital Switzerland“ strategy
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