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1 Purpose

Digitalisation increasingly defines our lives today. For a country such as Switzerland, which lacks natural resources, it is important to make the best use of the opportunities for society and the economy which arise from digital change, for the benefit of all. With its stable political system and its proven high innovative capability, Switzerland has a good starting point to continue to apply the successful model of a liveable, open and modern Switzerland in the digital future. Digital transformation enables the sustainable development of the country.

To ensure that everyone can benefit from the advantages of current developments, the authorities at all federal levels, civil society, the private sector, the academic community and the world of politics must drive change together (a multi-stakeholder approach). In this context a constant dialogue between all stakeholders helps to anticipate challenges.

Against this background, the Federal Council defines the guiding principles for a «Digital Switzerland» in its strategy and calls on all of digital Switzerland›s stakeholders to jointly tackle relevant implementation projects and overarching themes. The action plan includes the specific measures to achieve the strategic goals as an integral part of the strategy.

This document supersedes the Federal Council›s «Digital Switzerland» strategy of 20 April 2016.

2 Principles

2.1. Putting people first

The Confederation›s digital policy places people at the forefront of an inclusive democratic information and knowledge-based society. To ensure that people are integrated into the digital society, they must be involved in the processes of digital transformation. These include greater empowerment for independent action, the protection of people and their rights and 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, and where necessary, support it. Appropriate general conditions are therefore being created to this end.

2.3. Facilitating structural change

The transformation of existing structures demands a conceptual rethink at all federal levels and brings into question traditional forms of living together and economic activity. This strategy lays the foundations for promoting the social cohesion of the regions and cultural diversity and for improving resilience. It contributes to the inclusive and equal-opportunity development of digital Switzerland. The state will actively facilitate the structural change associated with digitalisation.

2.4. Networking the design of transformation processes

In order to exploit the opportunities associated with structural change and to overcome challenges successfully, these must be approached in a comprehensive 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 will take advantage of the opportunities of digitalisation for the well-being of its inhabitants and will tackle the inherent risks in a consistent fashion. The participation of all Switzerland›s inhabitants in social, political and economic life will be guaranteed. The fair distribution of opportunities and perspectives strengthens social solidarity as a major pillar of co-existence.

3.2. Guaranteeing security, trust and transparency

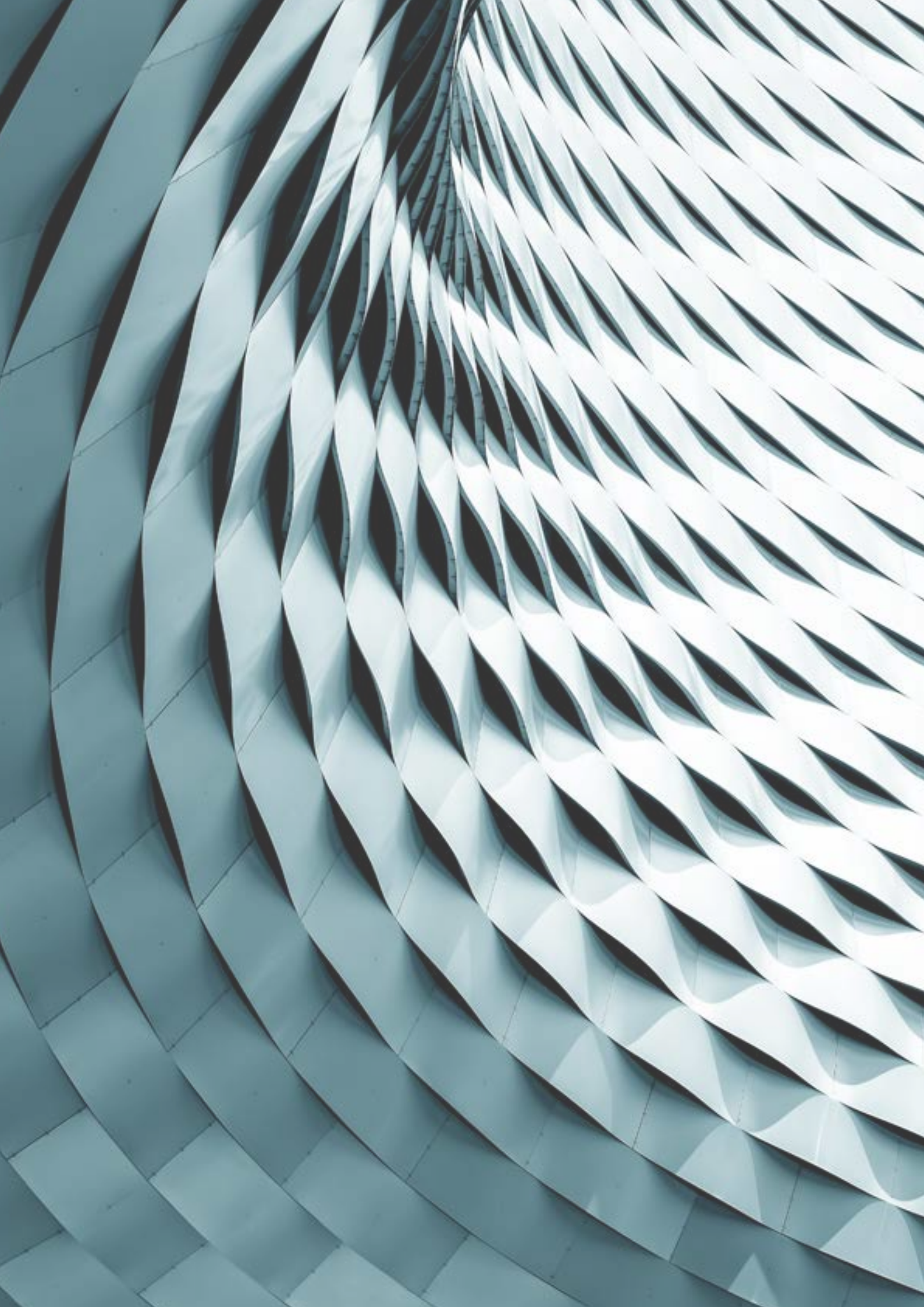
Switzerland's inhabitants should be able to move within the digital world just as safely as they do in the real world and they should be protected from digital abuse and from unwarranted persecution. Transparent, data-based services strengthen trust and respect individual development and people›s self-determination.

3.3. Further improving the digital empowerment of people

The competencies of the Swiss population should be further strengthened so that the opportunities of digitalisation can be comprehensively exploited. Thanks to lifelong learning, people should always be in a position to participate competently in digitalised political, social, cultural and economic processes and to assess the consequences of their own actions as appropriately as possible.

3.4. Ensuring value creation, growth and well-being

Switzerland will develop its strengths as an innovative and cosmopolitan national economy and create the basic conditions for innovations and digital business models in such a way that value creation, economic growth and prosperity can be achieved in the best possible way. Obstacles to entry into the market will continue to be removed so that innovative companies can prosper and competition can be improved. In this way the common good is strengthened and the sustainability of public finances is secured.



4 Fiedls of action

4.1 Education, research and innovation

4.2 Infrastructure

4.3 Security

4.4 Natural resources and energy

4.5 Political participation and e-Government

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4.7 Data, digital content and artificial intelligence

4.8 Social affairs, health and culture

4.9 International commitment

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 further education facilities therefore assume great importance.

For Switzerland to remain among the leading countries in terms of the development and use of digital technologies, it has to promote the necessary skills - in the sense of lifelong learning - at all levels and in all areas. In addition, in order to achieve the goal of equal opportunities and the participation of all inhabitants in the opportunities of digitalisation, it is important to promote basic skills in the use of the new technologies. 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 with no undue delay.

Science and research have a crucial role in terms of generating, disseminating and using knowledge. The technologies emerging from science and research constitute the essential basis of digital change and digital innovation, such as for example in the area of artificial intelligence or the processing of large amounts of data. These developments may shape economic, social, environmental and cultural development in a sustainable manner. Research and innovation as a core foundation of competitiveness and as a basis for successfully tackling structural change must be strengthened with regard to digital skills and must be further developed to meet the needs of the population, the economy and the environment.

4.1.1. Skills must be transferred in order to be able to exploit the opportunities of digitalisation

All of Switzerland›s inhabitants as well as Swiss citizens abroad should be enabled to participate in a competent manner in digitalised political, social, economic and cultural processes in the future. The ever more rapidly changing requirements are leading to continuing developments 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. In order to empower people, there is a need for intensified transmission of the essential digital and transversal skills. At the same time, the preconditions for effective transmission and acquisition of these skills must be met. Special attention must be paid to the risks related to data protection and responsible handling of the new technologies, in particular in the area of media protection of young people. To achieve their goals, the Confederation and cantons are coordinating their respective digitalisation strategies within the education sector.

Key documents:

- Education, research and innovation message 2017-2020 [only available in German, French and Italian]
- Education Cooperation Act (ECA) [only available in German, French and Italian]
- Report: «Challenges of digitalisation for education and research in Switzerland» and «Action plan digitalisation in the education, research and innovation sector in the years 2019 and 2020 dated 5 July 2017 [only available in German, French and Italian]

4.1.2. Strengthened research and innovation

In view of the increasing speed 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 position as a location for innovation and research, competencies relating to digital technologies in their entire breadth 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 created, in particular to support knowledge transfer in relation to the developments of «Industry 4.0”. Switzerland›s participation in international programmes related to digitalisation in the research and innovation arena is also being examined.

To reinforce research capabilities, education and further education offerings, chairs at universities and research centres must be targeted for support, along with international networking in teaching and research, taking into account the dissemination of skills and the autonomy of the universities. In this context, the universities play a central role in the continuing development of education and training 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:

- **Education, research and innovation message 2017-2020 [only available in German, French and Italian]**
- **Report: «Challenges of digitalisation for education and research in Switzerland» and «Action plan digitalisation in the education, research and innovation sector in the years 2019 and 2020 dated 5 July 2017» [only available in German, French and Italian]**

4.2 Infrastructure

High-quality, efficient and secure network infrastructures are the backbone of successful functioning of the economy and society in the digital age. A reliable, internationally competitive and affordable communications network infrastructure is the prerequisite for the development of new ways of living and working, new services and products. In addition there is a need for adequate frequency resources as well as general conditions which promote innovation and investment for the ongoing development of communications network infrastructures which operate as smoothly as possible.

The high quality of an efficient and environmentally compatible general transport system and its international integration are central and indispensable local factors for the economy and society and is a prerequisite for a high quality of life for all inhabitants in Switzerland. The increase in automated vehicles on road and rail, the increasing electrification of vehicles, drones, new mobility services and digitalisation in logistics will change the transport of people and goods in coming years and will also affect spatial development. These challenges have to be tackled together.

Thanks to more information about the various mobility offerings, mobility participants 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. Multimodal mobility services have great potential for users, the economy and the public sector. Digital selling enables new forms of customer interaction. Overall, this creates the basis for the development and provision of new products from businesses.

4.2.1. Switzerland has a country-wide, competitive, reliable and efficient 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 ensures the provision of 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. With the development of innovative solutions and standardisation, the security of communication infrastructures will also be guaranteed in the future.

Switzerland will also exploit the economic and social potential of the internet domain name system (.ch and .swiss), which is used for the benefit of the country and its international positioning and in the virtual domain.

Key documents:

- Telecommunications Act (TCA), dated 30 April 1997 (under revision)
- Strategy of the Confederation for the operation of internet domain names, dated 27 February 2013

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

Switzerland aims to establish an overall transport system which is efficient in all aspects and in which the available technology is used optimally, fewer natural and financial resources are consumed and maximum benefit accrues to society. The Confederation promotes the deployment of the data infrastructure for multimodal mobility and is developing appropriate general conditions for digital selling. Switzerland occupies a leading international position in terms of innovations in relation to mobility. The state also uses the increasing integration of transport operators in order to strengthen interdisciplinary departmental and inter-office cooperation across all federal levels.

Key documents:

- The future of mobility in Switzerland - DETEC orientation framework 2040, dated 15 August 2017 [only available in German, French and Italian]
- Position paper of the Coordinating Agency for Federal Geographic Information (GCG) [only available in German, French and Italian]

4.3 Security

Protection from risks is an essential component of digitalisation and the opportunities arising from it. Key areas include 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 components of the general configuration of digitalisation. It is not only the protection of critical infrastructures which is a central element of digitalisation to ensure their longevity. Rather, this extends to other areas of public life, to ensure the population's confidence in the efficiency of the state. Highly effective cooperation of all competent entities (authorities, the private sector and society) and systematic international networking are crucial for creating a safe environment. Individuals and businesses need to extend their security-related skills through their own efforts and to establish a security culture in the workplace. In particular, online protection of children and young people from harmful content and abusive behaviour also has a high priority. However, digitalisation does not only involve risks but can also contribute to earlier detection of dangers and to dealing with crises more rapidly and more efficiently.

4.3.1. Protection from cyber-risks is guaranteed

Protection from dangers in cyberspace is a collective task for the Confederation, the cantons, the private sector 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 and the private sector, as well as at the international level.

Key documents:

- National strategy for the protection of Switzerland from cyber risks (NCS 2)
- National strategy of Switzerland for the protection of critical infrastructures (SKI strategy) [only available in German, French and Italian]
- Research on cyber risks in Switzerland, 2017 experts' report on identification of the most important research topics, dated 10 November 2017 [only available in German, French and Italian]

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, response to and recovery from state-backed or criminally motivated threats and actions as well as dealing with natural and man-made disasters and emergencies. 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 events, static 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 emergency services and the army within the framework of the Swiss Security Network. The Confederation ensures that digitalisation in security takes place in a coordinated manner.

4.4 Natural resources and energy

Switzerland exploits the opportunities of digitalisation by creating good general conditions for increased resource efficiency and improved security of the supply, cost-effectiveness and 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 reduce to a socially desirable minimum the environmental and social effects by means of appropriate measures. In terms of the green economy, the resource efficiency of the new technologies must be continuously optimised. However, new technologies also help to reduce the consumption of resources in other areas.

Switzerland will take targeted measures to increase resource and process efficiency, among other things to reduce the climatic and environmental impact. These include new technologies, professional know-how, new forms of funding and public procurement. Digital products will be designed sustainably and produced cost-effectively with regard to technical challenges, health aspects, resource-saving aspects and energy consumption. In the case of long-term investments, attempts will be made to take into account the entire life cycle, so that investment, environmental impact and efficiency can be appropriately balanced.

The energy networks are the link between energy production and energy consumption. To ensure that sufficient energy is available efficiently, affordably and sustainably or renewably at all times, the energy networks must be developed further. Energy supply and the energy industry are becoming smarter and more flexible thanks to the increased use of information and communication technologies. Technology is used to handle growing complexity and to enable realisation of cost savings, e.g. through higher levels of automation. The efficiency of the system as a whole is being continuously improved through new instruments, business models and transparency. Automated processes are well established in the energy industry. The availability of data and access to information allow new added-value services. Flexibility, i.e. active control of production, decentralised storage and consumption, is used and coordinated between participants and infrastructures (electricity, gas, and heat).

4.4.1. Digitalisation's resource-consumption is optimised

Switzerland›s inhabitants are informed about the opportunities and risks of digitalisation in relation to the consumption of resources. The life span of digitalised products must not be deliberately shortened and consideration must be given as early as the design stage to their possible re-use, recyclability and, if necessary, disposal. The potential economies of increased efficiency should be realised and not lost as a result of higher consumption at a different location.

Key documents:

- Green economy action plan dated 20 April 2016

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

Energy production and consumption are becoming easier to control and therefore smarter, thanks to the use of digital instruments. Energy efficiency is increased because transparency and visualisation of consumption leads consumers to make more rational decisions on the basis of digitally available information. Buildings have communications links and controls so that they can react to the demand from the energy industry. The dynamics of this transformation of the energy supply system and the energy industry to a sustainable energy supply system will be supported by ongoing identification and dismantling of obstacles, as well as by measures to spread knowledge and incentives. The state provides good, flexible basic conditions for this smart energy supply system and continuous further development. Innovative solutions and energy services will be made possible and supported. Transparency and the availability of data will be developed and efficiently designed, with consideration given to data protection.

Key documents:

- Sustainable development strategy 2016-2019, dated 27 January 2016
- Smart grid roadmap dated 27 March 2015
- Energy strategy 2050
- UN Agenda 2030 for Sustainable Development

4.4.3. The energy networks in Switzerland are smart, secure and efficient

The energy networks (electricity, gas and heat) use digital instruments from information and communication technologies in their planning and operation. In this way they are becoming intelligent networks with new functionalities. These make it possible to cope efficiently and flexibly with the increasing complexity of the decentralised, renewable energy production system, liberalised energy markets, a multiplicity of controllable consumers and new digital business models in the energy sector. They constitute the intelligent link between energy production and energy consumption in an intelligent energy system. Smart energy networks enable long-term cost savings on the network with the transformation to a sustainable energy supply.

Key documents:

- Smart grids
- Energy strategy 2050
- Revision of the Electricity Supply Act

4.5 Political participation and e-Goverment

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

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. These changes must be taken into consideration. Barrier-free access to instruments of political involvement allows all citizens to participate autonomously in political and public life.

The digitalisation of political rights must continue to progress in accordance with the principle of «security before speed». The transparency and trustworthiness of deployed systems must be supported on an ongoing basis.

e-Government must use technological developments to optimise administrative activity, in particular in the interaction between authorities and the population as well as the private sector. e-Government contributes to Switzerland continuing to be one of the most attractive locations for organisations and companies in the future and having an efficient administration.

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

In the digitalised, globalised and increasingly fragmented world of the media, in which the population is increasingly turning from classical media to internet-based offers, the public service assumes even greater importance than previously as a reference point for better understanding of the political and social environment. This requires reliable, independent and high-quality media offerings, including on the internet, which appeal to the entire population. The public service promotes understanding, cohesion and exchange between the regions of the country, linguistic

communities, cultural, religious and social groups, whilst taking into account the characteristics of the country and the requirements of the cantons. The public service supports political participation and strengthens democracy and the respect of fundamental rights. Switzerland is committed to high quality and ethical responsibility in journalism.

Key documents:

- Report «Securing the political and democratic functions of the media», dated 5 December 2015
- Report on the public service in the media sector, dated 25 January 2017 [only available in German, French and Italian]
- Draft consultation on the new federal Act on Electronic Media [only available in German, French and Italian]

4.5.2. The population and the economy can use electronic channels for political involvement

Switzerland views new technologies as an opportunity for democracy. New forms of political participation which are based on the application of new technologies have to be evaluated and supported. In addition to referenda, these include in particular electronic consultations and collections of signatures as well as project-related possibilities for involvement in decision-making, for example in neighbourhood planning. The new technologies should motivate the population to participate actively in social and political life. Furthermore, the barrier-free accessibility of these technologies should enable equal-opportunity access to the exercising of political rights by the disabled.

The effects of the new participation channels on democratic decision-making must be examined and risks which threaten confidence in majority decisions must be tackled promptly.

Key documents:

- Report of the Federal Council on electronic voting, dated 14 June 2013 [only available in German, French and Italian]
- Media release: Federal Council decides on next steps for extension of electronic voting, dated 5 April 2017[only available in German, French and Italian]
- Federal Chancellery dossier on e-Voting [only available in German, French and Italian]
- Federal Council report on disablement policy, dated 9 May 2018 [only available in German, French and Italian]

4.5.3. The population and businesses can handle their dealings with the authorities efficiently and digitally

To enable the population and businesses to conduct their dealings with the authorities electronically and efficiently throughout Switzerland, the electronic services provided by authorities will be provided in such a way that they can be used centrally without any specific knowledge of official competencies and without specialised technical knowledge. The processes for dealing with the administration will be matched consistently to customers› needs, simplified, standardised and optimised in terms of their efficiency. Support via information and communication technologies will be further developed in order to optimise the digital transformation of the administration. The electronic service offering for businesses will be expanded to this end, in particular via EasyGov.swiss. Individuals and businesses will provide the administration with the same information once only (the «once only» principle). The administration uses the corresponding information across organisations, subject to data protection.

Key documents:

- e-Government-strategy Switzerland, dated 1 January 2016 (in revision)
- ICT - Confederation strategy 2016-2019
- Federal Council report on disablement policy, dated 9 May 2018 [only available in German, French and Italian]
- Strategic plan e-Government 2016 - 2019
- Framework agreement under public law on e-Government cooperation in Switzerland (2016 - 2019)
- Tallinn Declaration on Government, dated 6 October 2017

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

For the sustainable establishment of official digital processes, the most important basic modules such as one-time registration with an electronic identity, electronic authentication of documents or secure document storage will be provided nationally. Where necessary, the administration provides the appropriate preliminary services, opts for open interfaces and the construction of services which can be used collectively.

Key documents:

- e-Government-strategy Switzerland 2016 2019 (in revision)

4.5.5. Networking will be strengthened at all federal levels

In the 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 active in the area of digitalisation throughout Switzerland. Coordination of the various official programs and projects will be strengthened in order to combine resources and avoid redundancies.

Key documents:

e-Government-strategy Switzerland 2016 2019 (in revision)

4.6 The economy

Digitalisation is changing the economy and the world of work. It is having a substantial effect on constant structural change and economic growth. There is hardly any sector of the economy which remains unaffected, although not all sectors are equally affected. 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. To this end, general conditions which are as favourable as possible to digital business models and innovation will be created; they contribute to general well-being and do not bring into question the sustainability of the public finances. Cities and municipalities, rural areas and mountain areas should benefit from this development.

Businesses should be able to optimally adapt to the new technologies. It is important to further develop Switzerland›s strengths, such as a flexible labour market, excellence in training and research, and high-quality infrastructures. SMEs and start-ups play an important role in this context, because they are often drivers of innovation which should not be underestimated. In addition, administrative obstacles must be dismantled and the exchange between businesses and the authorities must be handled centrally. Attention must also be paid to the situation of Switzerland regarding developments in other markets.

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

Switzerland should use the structural change in the world of work due to digitalisation for its own benefit. The basic conditions for exploiting the opportunities of digitalisation and for overcoming the associated challenges should be optimised. The Swiss employment market also possesses the flexibility necessary for exploiting 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 emergence of innovative business models are improved, without involving new risks of insecurity and any risks of shifting burdens onto the public and the Federal budget

Key documents:

- Report «Effects of digitalisation on employment and working conditions - opportunities and risk, dated 8 November 2017 [only available in German, French and Italian]

4.6.2. Switzerland provides room for the development of new business models and has a highly diversified start-up scene which brings innovations quickly to market

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. New business models have sufficient space to develop. Young companies can be set up quickly and smoothly. They have access to well-trained workers, can grow rapidly enough to ensure that the continued presence of the company in Switzerland remains an attractive proposition, jobs are created and retained. At the same time, it is important to anticipate associated challenges and to tackle possible regulatory questions in good time, such as, for example, the timely taxation of the digital economy.

Key documents:

- Report «Basis for the new growth policy», dated 21 January 2014 [only available in German, French and Italian]
- Report «General conditions of the digital economy", dated 11 January 2017 [only available in German, French and Italian]
- Report on findings of the "Digital test" survey [only available in German and French]
- Position of the SIF of 8 March 2018 on taxation of the digitalised economy
- Strategic goals of the Federal Council for Innosuisse, dated 8 December 2017
- Tourism strategy of the Confederation, dated 15 November 2017 [only available in German, French and Italian]

4.6.3. An innovative global fintech sector secures the competitiveness of the Swiss finance industry

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

Key documents:

Financial market policy for a competitive Swiss financial centre, October 2016

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 seize the opportunities which digitalisation offers them and strengthen their economies through better cross-linking 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.

The flow of geodata is constantly increasing. Geodata, which is more and more frequently available in real time, is increasingly at the centre of modern spatial planning. At all levels of administration, the focus is therefore on access to real «smart data» at the service of the smart city.

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 the 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.

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

Swiss agriculture and food production is 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 in a more targeted fashion. In this way production processes are optimised, reducing the impact of food production on the environment and at the same time improving the quality of products. More sensor-controlled, automated processes are becoming available for optimising production systems and for quality assurance. This contributes to an increase in competitiveness and to the sustainability of Swiss agriculture.

Key documents:

- Charter on the digitalisation of Swiss agriculture and food production, dated 19 June 2018 [only available in German, French and Italian]

4.6.6. Switzerland takes advantage of its opportunities regarding the virtual international economy

In 2015 the European Union (EU) adopted its strategy for a digital internal market (the Digital Single Market). Digital markets in the trade relations with other regions are also gaining in importance. Switzerland is monitoring the creation of the digital single market in the European Union as well as in other world markets which are important to the country and is conducting a dialogue on this topic with the EU Commission and other countries and in international organisations such as the OECD and the WTO. The objective is to exploit the opportunities of these digital markets for Switzerland and to avoid the risk of marginalisation.

Key documents:

- Strategy for a digital internal market in the EU
- OECD Going Digital Framework

4.7 Data, digital content and artificial intelligence

Digital content, especially in the sphere of entertainment and the media, is one of the most important drivers of growth for the digital economy. Data itself is a key raw material in the knowledge society. However, this means that data has to be of high quality and accessible and can be trusted. 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. Favourable general conditions for the data economy make it possible to generate added economic and social value, can contribute to an improvement in the quality of our everyday lives and are becoming important factors in competition. This applies also to the use of artificial intelligence.

However, 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. Attention must also be paid to the issue of sustainable management of data which uses as few resources as possible.

4.7.1. Switzerland has a modern, coherent legal basis regarding the legal rights relating to data, access to data and data handling

Switzerland is establishing a modern and coherent legal basis for exploiting the potential of the data economy. Since a multiplicity of different national and international participants are involved in the production of, access to, and processing of this data, it is essential to strive for nationally and, where necessary, internationally harmonised regulatory coordination.

Key documents:

- Report on data portability and regulations concerning the re-use of data, dated 15 February 2018 [only available in German, French and Italian]
- Report on data portability in Swiss law and on the legal situation concerning personnel information management systems (PIMS), dated 22 December 2017 [only available in German, French and Italian]

4.7.2. Value creation through data promotes Switzerland as an attractive location

The processes of the public sector for collecting, storing and processing data are being further developed so that they relieve the administrative burden on Switzerland's inhabitants as well as businesses and are being designed to be efficient and sustainable. They contribute to greater value creation and to positioning Switzerland as an attractive place to live and conduct business.

Key documents:

- Position paper of the Coordinating Agency for Federal Geographic Information (GCG) [only available in German, French and Italian]
- Data innovation strategy of the Federal Statistical Office

4.7.3. Appropriate datasets are available as open data as a raw material of a digital society and economy

Appropriate public sector data is available as open government data (OGD) for re-use free of charge, in order to develop intelligent solutions and products, to promote the transparency of administrative activities and to increase internal administrative efficiency. Open access to appropriate research data and results makes a substantial contribution to improving the effectiveness, transparency and reproducibility of scientific research and will be monitored as part of the open data strategy of the universities and the Swiss National Science Foundation.

To ensure that the opportunities presented by digitalisation can be comprehensively exploited, the role of the public sector should be developed further. The public sector does not make only its own data accessible in accordance with the OGD; rather, as a moderator it creates a framework and provides incentives for private participants to exchange their data with each other and with the public sector and make it accessible to everyone. To this end, new forms of cooperation between individuals and the public sector will be strived for.

Key documents:

- Open Government Data Strategy 2014 - 2018, dated 16 April 2014 (under revision)
- Benchmark figures for a data policy in Switzerland, dated 9 May 2018 [only available in German]
- Swiss Universities Open Access Strategy [only available in German]

4.7.4. Switzerland's inhabitants can exercise control over their own data

In order that the fundamental right of every person to informational self-determination can be exercised and to combat abuses of personal data and disparities, on the one hand data protection rules must be redefined. On the other hand it is important to create mechanisms in close cooperation with all data processors and to provide services which enable individuals to release personal and material data concerning them - under the greatest possible control - for re-use by third parties or to prevent its further use.

Key documents:

- **Message on the Federal legislation concerning the total revision of the Federal Data Protection Act and the amendment of other ordinances concerning data protection [only available in German, French and Italian]**

4.7.5. The general conditions for transparent and responsible use of artificial intelligence are optimised

The increasing use of artificial intelligence is transforming the economy and society. Nationally and internationally, Switzerland supports monitoring and assessment of the resulting consequences for our private and working lives. The basic conditions must be shaped in such a way that algorithmic decision-making systems are transparent and verifiable, that responsibilities are regulated and that the systems in use respect the prevailing values and legislation.

Key documents::

- **Report of the EU Commission on artificial intelligence in Europe, dated 25 April 2018**
- **Report of the EU Commission on the Digital Europe programme, dated 5 June 2018**

4.7.6. Access to digital content is improved

The demand from consumers that they should be able to access content they have purchased everywhere and on the move is increasing. This demand comes up against barriers relating to the trans-national portability of copyright-protected content in Europe and throughout the world. Statutory conditions must be established so that consumers in Switzerland can use digital content without barriers. Property rights and copyrights must be respected.

Key documents:

- **Federal legislation on copyright and related rights, dated 9 October 1992**
- **Message on the amendment of copyright legislation, on the approval of two World Intellectual Property Organisation agreements and on the implementation thereof, dated 22 November 2017 [only available in German, French and Italian]**

4.8 Social affairs, health 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 increasingly important. On the positive side: the innovations with new technical possibilities for support and facilitation in everyday life, with the dismantling of obstacles and new possibilities of vocational integration. On the negative side: they can lead to comprehensive surveillance and new obstacles in the employment market with reduced possibilities of employment and 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.

Innovative and intelligent technologies are influencing 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 health sector means that more and more health specialists from different professional groups are involved in the treatment of patients. Consequently the number of people who must have access to more and more data independently of time and location is increasing. Digitalisation in the health 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 health services 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, dissemination and appreciation of cultural artefacts. 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.

4.8.1. Innovative technologies and services promote social participation and integration in the employment market for all

Switzerland is in favour of all its inhabitants having equal-opportunity, barrier-free and non-discriminatory access to innovative technologies and services. In addition, these technologies should be used to dismantle obstacles for older persons, the disabled, people with a migration background and people with special needs, in particular for the socially disadvantaged and those with a limited education, and to facilitate their integration into social and vocational life. In the context of support for application-based international research and development cooperation, the state promotes research into and development of assistance technologies and innovative services targeted at the individual needs of the above-mentioned social groups.

Key documents:

- AAL research projects
- Education, research and innovation message 2017-2020, dated 24 February 2016 [only available in German, French and Italian]

4.8.2. Networking of participants in the health 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 healthcare 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 regarding their health habits 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 healthcare 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 principles of informational self-determination and freedom 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, 1 March 2018 [only available in German, French and Italian]
- «Health 2020» strategy

4.8.3. Simplified access to cultural creation and cultural heritage encourages 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 the digital cultural heritage in archives, libraries and museums and the transfer of knowledge and networking in relation to transversal projects are guaranteed.

Key documents:

- Message on the promotion of culture in the years 2016-2020, dated 28 November 2014 [only available in German, French and Italian]
- 2012-2019 strategy of the Swiss National Library, dated 4 August 2014
- The Confederation›s strategic goals for the Pro Helvetia Foundation 2016-2020, dated 4 December 2015 [only available in German, French and Italian]

4.9 International commitment

At the global level there is intense debate about the form of a global governance system for the digital domain which exploits its potential whilst at the same time preventing the negative effects and inequalities of opportunity. At the core of this argument is the question of which freedoms are conceded to the internet economy, what responsibility these entail and in particular what role and how much influence governments and international organisations have. As an open and highly-integrated country, Switzerland, with progressive digitalisation, is reliant on inclusive, liberal and at the same time secure and stable global digital governance based on international law, the principles of the rule of law, human rights and democratic participation. It is in Switzerland›s interest if the corresponding international framework also takes into account the goals (sustainable development goals; SDGs) of the United Nations 2030 Agenda for Sustainable Development.

4.9.1. Switzerland contributes to shaping international discussions on the future of the digital space and its governance

At the international level, Switzerland actively supports an open, constructive dialogue on the continuing development of global digital governance. On the basis of transparent, responsible and efficient cooperation of all stakeholder groups in their respective roles, an open, innovative and at the same time stable and secure internet can be guaranteed for everyone. At the same time Switzerland is working with international partners to advance democracy, in which people themselves determine, how, by whom and for what purpose their data and their knowledge are used. As a result, human rights are not only to be promoted in the digital world; at the same time new innovative economic and social eco-systems and areas of activity are to be created. Switzerland is making an active contribution to the advancement and stabilisation of existing governance structures and processes and to the establishment of new ones, and is internationally respected for its constructive and mediating role. The international city of Geneva is established as global centre for

digital governance; the international organisations, NGOs and think tanks which it hosts are networked with each other and realisation of their potential is better exploited. In particular, optimal use will be made of the possibilities of the new initiatives in Geneva.

Key documents:

- Results of the UN World Summit on the Information Society (WSIS) 2003 and 2005
- Results of the WSIS+10 Review process
- Results of the NETmundial conference of 2014

4.9.2. Switzerland supports a secure and trustworthy digital space

Switzerland supports a secure, open and free digital space which is based on clear rules and mutual trust. This is founded on the recognition of, compliance with and implementation of international law in the digital arena. Rights which apply offline must also be protected online. Switzerland contributes to clarifying the roles and competencies of the participants in the digital space in order to promote responsible conduct. It is also actively committed to intergovernmental confidence-building, particularly within the framework of the OSCE. With regard to cybersecurity, it supports the development and improvement of its own capabilities and, in view of the distinct global interdependences, also contributes as far as possible to the development of capacities in other countries. Strengthening the profile of the international city of Geneva as a «cyberhub» is a component of these efforts. Where it is possible and appropriate, Geneva should be used as a venue for events and initiatives in relation to cybersecurity.

Key documents:

- National strategy for the protection of Switzerland from cyber risks (NCS 2), dated 18 April 2018
- Results of the UNGGE: Reports 2010, 2013, 2015
- 16 confidence-building measures of the OSCE, dated 10 March 2016

4.9.3. Switzerland is committed to the achievement of the UN's 2030 Agenda goals using new technologies

Switzerland supports the use of new technologies to achieve the goals of the United Nations 2030 Agenda for Sustainable Development (SDGs), in particular universal and affordable access of the entire population of world to the internet, high-quality educational provision and equality of the sexes. To this end, Switzerland is 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.

Key documents:

- Sustainable development goals of the UN
- Results of the UN World Summit on the Information Society (WSIS) 2003 and 2005
- Results of the WSIS+10 review process

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 in relation to the implementation of this strategy and relevant cross-sectoral topics and to exploit any possible synergies. The administration also cooperates closely with the private sector, civil society and the academic community 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 health and education sectors), sustainable digital integration is possible only if there are permanent forums or platforms for cooperation.

The Federal Department of the Environment, Transport, Energy and Communications DETEC is responsible for coordinating the Confederation’s implementation measures within the federal administration and for the ongoing development 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.

5.2. „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 starting point for this are the measures taken by the federal administration. 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 website of the Federal Office of Communications, OFCOM, and is regularly updated.

Digital Switzerland, however, is a joint task of authorities at all levels of the state, the private sector, the academic community, 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 imitation. They may therefore be published in the «Digital Switzerland» action plan. The agencies responsible for their implementation provide the necessary resources.

5.3. Dialogue on the ongoing development of digital Switzerland

The dialogue on the ongoing development of this strategy and its implementation measures is organised under the aegis of DETEC. It strengthens awareness of the necessity for a collective commitment to digital Switzerland. The dialogue also serves to promote networking between the participants and to guarantee an exchange of information about the measures in progress. At the national Digital Switzerland conference, which is held biennially, representatives of authorities at all federal levels, civil society, the private sector, the academic community and politics analyse together which new challenges are being raised by ongoing digitalisation and how these can be tackled, taking into account the values and needs of the Swiss population, the economy and the academic community.

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