



## Executive Summary

Digitisation has affected virtually every sector of the economy; digitisation has changed the economy and the world of work. New information and communication technologies (ICT), as well as more powerful computers and network infrastructures, are the technical foundation of this change. While the initial stages of digitisation mainly served to automate repetitive business processes with the help of ICT, the digital transformation, which has been progressing rapidly since about 2008, means basically the 'Digitisation of Everything'. New technological developments such as Cloud Computing, Mobile Computing, Big Data and the Internet of Things, facilitate new products, services and business models. Their use has been constantly growing.

Digitisation therefore substantially impacts structural change and economic growth. It is important to use the potential of digitisation to its full extent, especially in countries poor in resources like Switzerland. The Swiss economy must therefore be well equipped for the present and the future challenges. Considering the increasing digitisation of the economy, several indicators show that Switzerland is already well equipped in many areas. It is therefore in a **good starting position**, which should be exploited.

The current development is primarily an opportunity for Switzerland as a business location. Liberty, or rather **entrepreneurial freedom**, is a prerequisite for companies to exploit the opportunities of digitisation. The economic potential can be best reached if private initiatives receive the necessary freedom to exploit the opportunities at hand. Digital transformation should therefore not be limited by premature and unsuitable regulation. In particular, regulation should not restrain innovation, or protect or favour traditional technologies and/or business models. Also, since it is difficult to predict the development of digital transformation, defective regulation must be avoided. Industrial policy programmes (such as the explicit promotion of certain industries, sectors, companies or the technologies they use) are not helpful against this dynamic and uncertain background.

The state can create a positive environment for the Digital Economy first and foremost through **attractive economic policy conditions**. These include the above mentioned freedom of entrepreneurship, the principle of legal certainty, a flexible labour market, highly developed infrastructures, a sustainable fiscal policy, a relatively moderate tax burden, a strong foundation in education and research, as well as a high standard of living. All these conditions need to be improved and carried into the future. That is why both the international development of the determining factors of the Digital Economy and the improvement of the existing legislation in Switzerland should be given due attention.

The aim of this report is to review the conditions of the Digital Economy in the sectors concerned, and, if necessary, to initiate regulatory adjustments. This report will therefore examine the following five areas, including their respective challenges: Labour Market; Research & Development; Sharing Economy; Digital Finance; and Competition Policy. There are other issues that also have an impact on the conditions of the Digital Economy (e.g. E-Government, data policy, infrastructure, transport, etc.). These issues, such as the possible effect of digitisation on the security of supply, for example of energy, will be addressed elsewhere. This report will therefore only touch on a few of those topics, which are also closely

linked to the Digital Economy, to avoid anticipating and duplicating the work that has already been carried out in the scope of the Federal Council's Digital Switzerland Strategy.

A summary of the main ideas of the various chapters are presented in the following.

The analysis of the **development of the Labour Market** in Switzerland over the past decades shows a seismic change in the occupation structure. For one, there has been a shift of occupation from the manufacturing to the service sectors; this development has been accompanied by an increased demand for higher qualifications in industries with a strong occupation growth. These changes are mainly due to technical progress and digitisation, but also to globalisation and a value shift in society. The past structural changes have caused many positions in the agricultural and industrial sectors to disappear. The service sector, however, has seen a large increase in occupation, which has more than made up for the decrease in the other sectors. The Swiss labour market on the whole is healthy. More than 800,000 jobs were created in the past 25 years; this was due to factors such as flexible labour market regulations, the social partnership as well as an apprenticeship system that is closely tied to the labour market. Based on the current labour market indices it can be assumed that technological progress will continue to trigger similar changes: jobs will disappear and new jobs will be created in other areas. It is more likely that occupational employment will keep shifting into new areas rather than being reduced on a long-term basis.

This development implies that the labour market will require different qualifications, which again may present a challenge for the economy and employees alike. It will therefore be crucial that the qualifications in demand can be found quickly in the labour market. One key element to successfully meeting these challenges is education and the way it responds to the skills required in the future. The Swiss education system is healthy, also due to the vocational education and training that is tied to the labour market. In the context of the increasingly research-based digitisation of the economy, several questions do arise; for example, how Swiss universities can contribute to addressing these challenges through their teachings. The education system faces other challenges, especially regarding which horizontal (on the same education level) changes seem appropriate, and if a vertical coordination among the different education levels is necessary and feasible to address the digital transformation. The challenges and subsequent questions presented in the report can only be answered in part today. More in-depth analyses will therefore be necessary. First steps have already been taken by the Confederation in the Message ERI 2017-2020 and the measures presented therein.

Digitisation has not only changed the structure of employment, but also the working methods and procedures. New business models and thus new forms of occupational employment have been created via internet platforms. This brings opportunities, but also risks. Fundamental social and labour law questions must be addressed. An issue that has been in the forefront more recently is the question whether platform employees are independent or dependent workers, since some crowdwork models contain elements of independent as well as dependent work. This is a rather weighty question due to the varying legal implications. The legal analysis presented in this report shows that the platform models take on many different shapes and forms, and that therefore every case needs to be analysed individually. No general conclusions can be drawn.

In the scope of their response to parliamentarian Reynard's postulate "Automation: Risks and Opportunities" (15.3854), the Federal Council will publish a report about fundamental questions regarding the labour market in November 2017. The report shall present the implications of automation on occupation at an industry level; the effect on social security; challenges for health protection; as well as the further advancement of the social partnership.

**Research and Development** are important prerequisites for mastering the basic digitisation technologies. These are also known as Cyber Technologies and they can be roughly divided

into basic research, technological development and application, as well as non-technical aspects. Switzerland is already one of the leading research countries in areas such as Artificial Intelligence, Learning Systems or Quantum Cryptography, which directly benefits companies in their cooperation with universities. There is much room for improvement, however, in areas such as Cloud Computing, the Internet of Things, or Big Data; these are all necessary for the digitisation of the economy. The question arises which immediate challenges the research location is confronted with. To name only a few, there is the actual and the necessary width of the individual fields and the subsequently required research capacity; the collaboration at the interfaces of various fields; and the associated effect on the established research and innovation promotion instruments. These are closely tied to questions about the significance of the knowledge gain for the future operation, monitoring and security of critical supply infrastructures and transportation routes in Switzerland. The challenges and subsequent questions presented in the chapter Research & Development cannot be fully addressed with the analyses currently at hand. A more thorough analysis of the questions is therefore necessary.

The **Sharing Economy** is another concept often discussed in the context of digitisation. The present analysis first establishes a definition of this business model and explores the driving forces behind it. Core elements of the Sharing Economy are usually platforms that broker direct transactions between users and providers; these transactions include the temporary use of resources and partly also associated services. Some of the currently prominent examples of the Sharing Economy are platforms such as Uber (mobility services) or Airbnb (accommodation services). The analysis shows that the Sharing Economy is not a fundamentally new way of doing business. The developments of the Sharing Economy are positive from an economic point of view because resources are used more efficiently and competition is intensified. However, questions arise regarding consumer protection and social safeguarding. The larger part of the present analysis thoroughly examines the legal framework for mobility and accommodation services. The objective of the analysis is to identify legal loopholes and to initiate necessary amendments, all the while taking into account that legislation should not lead to a protection of individual market participants from new business models or competition. In some cases technological innovation may even reduce the need for legislation. In those cases, the varying degree of legislation of similar offers would not reflect a distortion of competition, but the specific attributes of the service in question. That is why the Sharing Economy's new forms of services (or brokerage) do not always need to be submitted to the same rules as the traditional forms. The present analysis shows that adapting the current federal legislation is only rarely necessary, since it already gives great flexibility to executive bodies when dealing with the Sharing Economy. However, the Confederation may need to take action in tenancy law regarding accommodation services, and in the areas of multi-modal mobility services and traffic law regarding mobility services (for the latter, an examination has already been initiated by two motions; cf. Motion Natermond 16.2066 and Motion Derder 16.3068).

New business models with a great economic potential have been made possible by digitisation in the **Financial Sector**. Financial technology, or fintech, is therefore an important part of the Swiss financial market policy. However, innovative business models face major entry barriers. People who raise money via crowdfunding platforms, for example, regularly fall under the Banking Act. The same is true for platform providers who do not limit their activities exclusively to brokering transactions but also receive payments. Furthermore, fintech companies who provide new payment services (e.g. mobile payment applications for peer-to-peer payments) may need a bank licence. An encompassing solution should be found while at the same time taking into account the strongly diverse needs of the individual fintech companies. That is why, on 2 November 2016, the Federal Council decided to follow an approach with three complementary elements. The presented approach does not discriminate specific business

models in terms of regulation, thus remaining open for future developments. The approach includes the following three elements: extending the deadline for settlement accounts; expanding the list of activities that do not need permission; a new licence category for fintech institutions. The last measure would open new business opportunities for non-banks in combination with lower compliance costs. Existing banks would have the possibility to outsource, and customers would have access to a wider range of financial services. Increasing the number of activities free of permission will allow banks and non-banks to explore innovative business models in a limited scope. On the other hand, and from the point of view of customers, the increased risk of abuse must be kept in mind; this could be set off by a cap on payments and an obligation of informing the customers. Extending the deadline for settlement accounts would increase legal certainty and also create better conditions for crowdfunding investments. Lowering the barriers to market access would generally intensify competition and subsequently increase the pressure on financial service fees and prices. The Federal Council has instructed the Federal Department of Finance (FDF) to prepare a consultation draft with the necessary legal amendments based on the decision to lower the barriers to market access.

The increasing digitisation presents new challenges to **Competition Policy**. Digital platforms have special properties and often tend to concentrate. When enforcement agencies analyse competitive situations they need to consider those specifications. Furthermore, the dynamic effect of competition in digital markets needs to be considered carefully regarding concentration trends. There is currently no need to fundamentally change the competition law. However, it may be necessary and useful to adapt the merger notification criteria so that the authorities could examine mergers or acquisitions of young internet platforms that could possibly impact competition. The introduction of a Significant Impediment of Effective Competition (SIEC) test when examining mergers could also help to consider the improved efficiency of merged platforms. Since many digital platforms are active on the international level, international coordination should be increased. The same is true for possible measures against geoblocking. It would not be helpful if Switzerland introduced regulatory measures on its own since these are all usually transnational phenomena.

The digitisation process and the subsequent structural changes have raised important questions about the conditions for the economy. The present report analyses various issues around digital change and examines the conditions in the main areas of the digital economy. It shows that several questions and challenges need to be examined further, especially in the areas of labour market, education as well as research and development. Very practical **regulatory needs** have been identified in the financial and mobility (traffic law) sectors. Based on this report, an amendment of legislation in the following areas should be examined: tenancy law, multimodal mobility services, as well as merger control under competition law. Finally, it will be important to closely follow the development of the international regulation of the digital economy, especially if Switzerland is directly concerned, and to show where action needs to be taken.

## Proposed measures

**Firstly**, to improve the **general conditions** for the digital economy, the following measures are proposed based on the present report:

(1) **Tenancy Law: to be examined by EAER (FOH)**

The legal regulation of repeated subletting through an accommodation platform shall be examined. One possibility could be a blanket agreement by the main lessor. Also, the contractual relation between owner and guest needs to be examined and/or regulated. For example, the question needs to be examined if the private legal rights of neighbours

or members of an owners association are sufficiently protected in the case of the regular use of such a platform.

(2) **Traffic Regulations: to be examined by DETEC (FEDRO)**

The Road Traffic Act regulations on transporting third parties in vehicles need to be examined. Considering the new (professional or non-professional) services, it should be examined if the existing laws need to be adapted – or even partially lifted – to reflect the new situation. Parliament has already initiated this examination based on two parliamentary motions which foresee an amendment of the traffic law regulations to that effect (Mo. #16.3066 and Mo. #16.3068).

(3) **Transport Chains across Services: to be examined by DETEC (ARE, FEDRO, OFCOM, FOT)**

Digitisation does not only lead to innovative new mobility services, but also transforms mobility across the whole range of transportation means. A key question is if and how the Confederation should push for the exchange of mobility data in general, and how to allow access to booking and distribution services in particular, thereby fostering sustainable and efficient transport chains. It should be examined if it is necessary to amend the legal regulations to use the multimodal transportation service opportunities to their fullest potential and minimise the risks.

(4) **Fintech: Facilitation for Fintech Companies**

A dynamic fintech system can contribute significantly to the quality of Switzerland's financial centre and boost its competitiveness. Against this backdrop the Federal Council decided to ease the regulatory framework for providers of innovative finance technologies on 2 November 2016. This easing should reduce barriers to market entry for providers in the fintech area and increase legal certainty for the sector overall. The Federal Department of Finance (FDF) was instructed to prepare a corresponding consultation draft with the required legislative amendments by early 2017.

(5) **Competition Policy: to be examined by EAER (SECO)**

The need for adapting the notification criteria of planned concentrations should be examined so that the authorities could examine mergers or acquisitions of still young internet platforms that may impact competition. The introduction of an SIEC test when examining mergers might also be useful to consider the improved efficiency of merged platforms.

(6) **Digitisation Test: to be realised by EAER (SECO)**

It should be examined if the current economy legislation unnecessarily hinders digitisation or if and where it has been made redundant by the digital development. A goal oriented analysis involving those concerned can help identify the relevant aspects through surveys conducted among interested associations. It is however not foreseen to conduct an encompassing and systematic analysis.

The EAER secondly applies for an **in-depth analysis of the challenges in education and in research and development (universities)** based on the present report:

(7) **Challenges to the Education System: to be examined by EAER (SERI) with the involvement of cantons and, if indicated, other partners**

The horizontal and vertical systemic ramifications digitisation has had on the education sector need to be verified, and which conclusions need to be drawn. It should especially be shown which contribution vocational training institutions (both VET and higher education) and Swiss universities (academic education) can make to train enough

people for future employment. Especially the systemic coordination in the scope of education cooperation needs to be followed closely.

**Challenges for Research & Development at universities: to be examined by EAER (SERI) in cooperation with DETEC (ARE, FEDRO, FOE, FOT, OFCOM), DDPS (GS, FOCP), FDHA (SG) and involving the SUC**

It should be examined if there is a research gap at universities that needs to be closed to cope with digital transformation, and if cooperation across fields and institutions needs to be adapted. The amount of research capacity Switzerland needs to ensure the transfer of knowledge and technology to the economy, and to guarantee the safe operation of critical infrastructures needs to be examined thoroughly. It should also be investigated how the Confederation's established tools for the encouragement of research and innovation can support the process.

It is **thirdly** proposed to follow **the international development** of the regulation of the digital economy based on this report:

(8) **Monitoring the International Regulation of the Digital Economy: EAER (SECO), FDFA and DETEC (OFCOM)**

The international development of regulating the digital economy in the major markets shall be followed through the existing embassy network and a report given to the Federal Council (monitoring). The possible need for action should be identified to create conditions that foster successful business activities in Switzerland. Duplications with existing projects must be avoided.