

# Adapting to new digital realities

## Main issues and policy responses

### SUMMARY

Digital technologies have changed the way we live and transformed the world around us at unprecedented speed. They have affected all important aspects of life, both at work and at home, and have influenced almost everything from human relations to the economy, to the extent that access to the internet has now become a basic human right recognised by the United Nations.

This profound change presents both opportunities and threats to our society. Citizens need specific skills and access to be able to meaningfully take part in society and work. European businesses need an adequate policy framework and infrastructure to capture the enormous value created by the digital economy. Supporting innovation, removing barriers in the digital single market, and effectively managing and using data are the necessary tools to assist them and boost economic growth in Europe.

The European Union takes an active part in shaping the digital economy and society, with cross-policy initiatives that range from boosting investment, through reforms of copyright and e-privacy, to removal of geo-blocking and development of e-government. This multifaceted approach is necessary to facilitate adaptation to complex new realities. The European Parliament, as co-legislator, is involved in shaping the policy framework which will help citizens and businesses fully utilise the potential of digital technologies.



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## Introduction

Information and communication technologies are known to contribute positively to productivity and economic growth. Over the past few decades, harnessing opportunities created by the digital revolution has become an increasingly important condition for modern economies to thrive. Digitalisation has a snowball effect in creating new business models and technologies, and more are sure to come as these disruptive changes continue to transform the economy and society at a previously unforeseen pace and in unpredicted ways.

The European Union (EU) has been making [efforts](#) to help citizens embrace these changes and benefit from the deepening of the digital single market since the mid-1990s. While these efforts undoubtedly helped create a more integrated digital economy and more digitally inclusive society in Europe, the work to adapt to new realities is constant as the pace of progress accelerates. The World Economic Forum estimates that the combined global [value](#) of digital transformation to society and industry will exceed US\$100 trillion by 2025. How much of this value will be created in Europe depends very much on making the right policy choices and providing well-targeted support. Fostering the digital economy and society is one of the main current priorities of the EU, and this briefing discusses important issues at stake as well as policy responses.

## Investing to unlock digitalisation, boost competitiveness and avoid a digital divide

In September 2016, the Commission put forward [new strategic connectivity objectives](#) for 2025 as part of its [digital single market strategy](#). These should prepare Europe for the roll-out of the next generation of broadband infrastructure with gigabit speeds, including both fixed and mobile internet access (5G). Once available, from 2020 onwards, 5G is expected to enable an array of new innovative services that will transform sectors such as manufacturing, energy, vehicle manufacturing, and health, bringing them into the era of the [Internet of Things](#). In setting the new connectivity targets for 2025, the Commission argued that, at the current pace of network development, it would be impossible to satisfy increasing user demands. The increasing amounts of traffic and data coming from mobile applications, and ever-increasing mobile connectivity by end-users require the expansion of network bandwidth capacity and speed. For this, the European Commission has set three specific connectivity targets for 2025:

1. All socioeconomic drivers, such as schools, transport hubs and main providers of public services, as well as digitally intensive enterprises, should have access to internet download/upload speeds of 1 gigabit of data per second (Gbps);
2. All European households, rural or urban, should have access to connectivity offering a download speed of at least 100 megabits per second (Mbps), which can be upgraded to gigabit speed;
3. All urban areas, as well as major roads and railways, should have uninterrupted 5G coverage. As an interim target, 5G should be commercially available in at least one major city in each EU Member State by 2020.

Given the current and future digital divide between urban and rural areas and across EU countries, there is some concern that not all consumers and businesses in Europe will benefit from the gigabit society. If gigabit speeds and 5G were available only in areas with high demand, users might be highly reluctant to pay for it as many new services, such as self-driving cars, will need continuity in connectivity across borders and geographical areas.

## Policy actions

Progress in building the European gigabit society is expected once an updated EU telecoms framework is in place. This will enable high levels of investment in network infrastructure as well as increased policy coordination across Member States, for instance increasing spectrum

harmonisation for 5G and [co-investment for deployment](#). [Industry estimates](#) that €660 billion is needed to deploy the new infrastructure, while another [study](#) carried out for the Commission assesses that reaching the targets would cost €500 billion by 2025.

Both the proposed [European Electronic Communications Code](#) and the [5G action plan](#) are of [high importance](#) for the Council and Parliament, and essential if the EU is to take the lead in the global 5G race. For instance, in December 2017, telecommunications ministers agreed on a [5G roadmap](#) towards the gigabit society goals by 2025.

Moreover these investments in connectivity are needed to boost the data economy infrastructure and innovation across the EU. In January 2018, the Commission adopted a [proposal](#) for a European high-performance computing (HPC) initiative in order to provide the EU with state-of-the-art supercomputers that will maximise big data analysis and application to a wide array of research areas and innovative services. Under this initiative, the EU (through Horizon 2020), the Member States and the private sector are expected to pool about €1 billion to achieve these objectives.

In addition, the Commission intends to adopt in April 2018 a communication on artificial intelligence and robotics, which deals with the technological, ethical, legal and socio-economic aspects needed to strengthen the EU's research and industrial capacity in this paramount area. This initiative will help stimulate investments and accelerate the development and take-up of this technology.

## Innovation, research and the use of data in the digital age

As pointed out in a 2016 World Economic Forum [study](#), the digital revolution changes the nature of innovation. It increases the power of existing research tools and helps create knowledge based on the analysis of massive datasets. Digitalisation also increases product and process innovation, transforming existing industries and creating new ones. Finally, digital tools allow the transformation of traditional business models, leading to innovation in the way products and services are created and distributed. The study concludes that digitalisation increases the pressure on firms to innovate continuously. In the framework of the digital single market strategy, the EU has launched a series of initiatives to increase the innovation potential associated with the digital revolution.

### Digitalising European industry

In April 2016, the Commission launched an [initiative](#) on digitalising European industry.<sup>1</sup> This plan aims to support and complement national initiatives. This includes the development of [digital innovation hubs](#) at local level throughout the EU, to help industry become more competitive. The digitalising European industry initiative covers two key aspects: the development of European digital infrastructure, and the improvement of the framework conditions for digital innovation.

### Digital infrastructure and research activities

The development of state-of-the-art digital infrastructure throughout Europe is a key component in making sure that all actors can benefit from the innovation brought about by the digital age. In April 2016, the Commission adopted the [European cloud initiative](#) to help in building a competitive data and knowledge economy in Europe. This initiative covers various aspects, such as developing a [European open science cloud](#) for European researchers, opening up the scientific data produced by research projects under the Horizon 2020 programme, and supporting the development of digital infrastructure.

Beyond the digital innovation hubs mentioned, Horizon 2020 supports research projects under [contractual public-private partnerships](#) for the development of technologies required for the digital revolution, such as photonics, robotics, 5G networks<sup>2</sup> and big data tools.

### The data economy

Data are fast becoming a key resource in the digital economy and growing exponentially. [Estimates](#) show that the EU data market grew from €54.4 billion in 2015 to €59.5 billion in 2016, with

expectations that it could surpass €106 billion by 2020. At the same time, the overall value of the EU data economy in 2016 was almost €300 billion, equalling 2 % of EU gross domestic product (GDP), and could potentially reach €739 billion and 4 % of GDP by 2020. In the digital single market [strategy](#) and the [mid-term review](#) of its implementation, the data economy was therefore identified as one of the key areas on which the EU needs to focus.

A key concern in the digital revolution is the management, ownership and use of personal and non-personal data. The [General Data Protection Regulation](#) (GDPR), which becomes applicable on 25 May 2018, provides a new framework for the collection, use and storage of personal data in the EU that directly impacts on the capacity to use big data, for example in the development of processes and services based on [artificial intelligence](#) (AI) tools.

Internet of Things (IoT) devices, such as connected cars, heating thermostats and consumer electronics, as well as online platforms – from Google and Amazon to Airbnb and Spotify – generate, store and process enormous and rapidly growing amounts of data. Companies that have access to such data are better positioned to match their products and services to consumers' needs and to bring about new products and services. For consumers, this new data economy brings the promise of improving their everyday life through better choice of products and services, smarter homes, more efficient healthcare services, fewer traffic jams and potentially even lower bills. However, wide circulation of data comes with substantial risks for consumers, due to privacy and security breaches or to business tactics such as exploitative pricing practices.

Two legislative acts, expected to be adopted in 2018, aim to further improve regulation of data in the EU. First, the proposal for an [e-Privacy regulation](#), adopted by the European Commission in January 2017, aims to further strengthen online privacy rules.<sup>3</sup> While it would eliminate unjustified barriers to the free flow of data, it would also strengthen security and confidentiality of communications, require consent for any marketing, including by email and text message, and bring new rules on cookies. Second, the proposal for a [regulation on free flow of non-personal data](#), adopted by the European Commission in September 2017, would introduce EU-wide rules on non-personal data,<sup>4</sup> currently not regulated at the EU level. The regulation would establish the principle of free movement of non-personal data within the Union, including storage and processing, and prohibit any data localisation requirement, unless justified on grounds of public security. The Council adopted a general approach in December, while work in Parliament continues at committee level.

Consumers and businesses could also benefit from cybersecurity certification schemes for information and communication technologies (ICT), which would be introduced by the proposal for a '[cybersecurity act](#)'. Adopted by the European Commission in September 2017, this would introduce European standards and voluntary certification for information and communication technologies (ICT) products.

In addition, the Commission intends to adopt a [data package](#) in April 2018 aimed at making more data available and re-usable. The package contains a review of the Directive on the re-use of [Public Sector Information](#), an update of the recommendation on access to and preservation of scientific information, and addresses the topic of private sector data sharing as a follow-up to the 2017 communication on building the European data economy. It thus brings together measures on government data, research data and private-sector data.

## Opportunities and risks, including trust, security and privacy in a digital society

### Trust in an era of data breaches and online disinformation

The European digital single market has been growing steadily alongside increasing use of the internet by consumers and businesses. Whereas most dominant tech companies such as Google, Amazon, Apple and Facebook are US firms operating from a US legislative starting point, Brussels

continues to step up its [pressure](#) on the tech giants to comply with EU rules. The [disclosure](#) that user data from Facebook – including that of [2.7 million](#) EU citizens – were improperly shared with the controversial political consultancy company Cambridge Analytica (which used the data to micro-target and mobilise voters in the United States and the United Kingdom) rapidly reignited the [debate](#) on the compatibility of the big data companies' business models with the principles of liberal democracy. On both sides of the Atlantic, mounting [pressure](#) on Facebook to increase transparency and respect the rules of democratic debate has sharpened the focus on a speedy and effective policy response. Vera Jourova, European Commissioner for justice and consumer affairs, has [stressed](#) that the implications of the data breach include not only data protection, but also fraud and electoral freedom.

The Cambridge Analytica controversy – which risks further undermining global [trust](#) in online platforms – could contribute to the Europeanisation of the digital society, potentially benefitting not only European citizens, but users across the [globe](#). The [General Data Protection Regulation](#) (GDPR) takes effect on 25 May 2018, bringing about a comprehensive overhaul in the processing of personal data and of rules relating to the free movement of such data. It introduces a single set of rules across the EU, requires the explicit consent of users for the processing of their private data, and introduces the right to transfer data to another service provider, the right to be forgotten and the right to have information rectified, alongside fines for companies that do not comply. Both [Mark Zuckerberg](#) and [Sheryl Sandberg](#), Facebook's founder/chief executive and chief operating officer respectively, have indicated that Facebook could make the GDPR settings available to users across the globe.

## Responding to the role of online platforms as vehicles for online disinformation

The role of online platforms in the proliferation of [conspiracy theories](#), [disinformation](#) (deliberately misleading information; part of the Kremlin's ongoing influence [campaign](#) with the aim of undermining Western democracies) and 'fake news' has drawn increasing attention in recent years. In its June 2017 [resolution](#) on online platforms and the digital single market, the European Parliament called on the Commission to analyse the legal framework with regard to fake news, and to look into the possibility of legislative intervention to limit the dissemination of fake content. President Jean-Claude Juncker [tasked](#) Mariya Gabriel, Commissioner for the digital economy and society, to look into the democratic challenges the online platforms create as regards the spread of fake information, as well as to reflect on possible action at EU level. The Commission included the initiative against fake online information in its 2018 [work programme](#). In October 2017, the Commission set up a high-level expert group (HLEG) representing academia, online platforms, news media and civil society organisations. It also launched a [public consultation](#) on 'fake news and online disinformation'.

According to the results of the [public consultation](#), disinformation aimed at influencing elections and on migration policies were the top two categories where most respondents thought fake news was likely to cause harm to society. The [recommendations](#) of the HLEG, published in March 2018, included the introduction of a code of principles for online platforms and social networks, including improved transparency of funding sources, of online news sources and of the functioning of algorithms used to distribute news, together with improving the visibility of reliable and trustworthy news and facilitating users' access to it. The Commission is set to adopt a communication on fake news and online disinformation in April 2018. The communication is widely expected to reflect the recommendations of the HLEG.

## Improving consumer trust online

With regard to consumers, the European Union has, in the past few years, introduced a number of legislative proposals with a view to increasing their security and trust in the digital market. Only 15 % of consumers [buy online](#) from another EU Member State. The EU is tackling this by improving

its rules on privacy online, including the proposal on sharing of [non-personal data](#) produced by increasingly common Internet of Things (IoT) devices; adopting better consumer protection in contracts for online [sales of goods](#) and [supply of digital content](#); and ensuring improved [enforcement](#) of consumer protection in cross-border e-commerce.

On 11 April 2018, the European Commission presented the '[new deal for consumers](#)' package, which aims to increase transparency in online market places, so consumers know with whom they conclude contracts when buying on online platforms and what their rights are. The package would also improve the transparency of search results, by informing consumers when a search result is paid for, and dissuade companies from breaching consumer rights by introducing significant fines and collective redress for consumers.

## Ensuring an online platform economy that benefits businesses and consumers, supported by fair taxation

The European digital single market has been growing steadily alongside increasing use of the internet by consumers and businesses. Online retail trade of goods recorded an annual [growth rate](#) of 22 % in the 2000-2014 period, while [estimates](#) for 2017 show growth of 19 %. In addition, the share of online sales is significantly larger in services than in goods, for example in tourism and the travel sector. In 2016, about a fifth of European companies made [electronic sales](#), but as many as 80 % of online products are still [sold domestically](#) and only 18 % come from another EU country. Notably, only 8 % of companies sell cross-border. This indicates that significant [barriers](#) still hamper digital trade of goods and services across the EU.<sup>5</sup> A '[Cost of Non-Europe](#)' study for the European Parliament suggests that the EU economy could gain €204 billion annually just from eliminating all barriers to cross-border e-commerce.

However, companies looking to expand to another Member State also find a number of digital barriers. For example, 17 % of the services and information that enable foreign entrepreneurs to start their business abroad exist [only offline](#), whereas for their domestic set-up, this is only so in 2 % of cases. Concerns such as a complex value-added tax (VAT) regime, the lack of legal certainty and various geographical restrictions continue to block realisation of the full potential of the digital single market, despite significant progress being achieved.

It is also, in this regard, increasingly important for many businesses to gain access to online platforms which play a key part in the digital economy as intermediaries allowing consumers and suppliers to interact, in particular across borders. They replace traditional direct relations between the two parties and facilitate e-commerce, being fundamental for the existence and development of digital markets. The emergence of the platform economy has raised many questions concerning, for instance, fair taxation, equal access and privacy protection.

## Current policy responses

Following the 2016 communication on [online platforms](#), in April 2018 the Commission intends to adopt a proposal for a regulation on [fairness](#) and transparency for business users of online platforms. The initiative aims to maintain the trust of businesses crucial in the online platform economy. By establishing harmonised obligations for transparency and dispute resolution, the initiative will also safeguard platforms' innovation potential – by preventing a 're-fragmentation' of the single market along national borders. More specifically, online platforms will continue to be free to innovate and to efficiently manage their multi-sided markets comprising millions of users. Generally applicable rules can therefore be determined unilaterally by the platform, but they will need to be clear, unequivocal and spelt out up-front. In that way, business users know what to expect and can also compare the approaches taken by different online platforms. Platforms will in addition have to provide efficient internal complaint-handling mechanisms, and participate in good faith in external mediation on possible disputes. This will improve quick and effective conflict resolution. Finally, on a number of issues of key importance, the Commission will closely monitor market developments

through a dedicated observatory on the online platform economy. Such issues include access to data, algorithmic decision-making and discrimination.

To clarify situations in which geographical restrictions must not apply, the Commission proposed a [regulation](#) on unjustified [geo-blocking](#). In February 2018, the EU adopted [new rules](#) prohibiting discrimination by online sellers to consumers from other EU countries regarding general terms and conditions, prices, nationality, place of residence or temporary location. They will increase legal certainty for businesses and possibly increase their revenue due to an enlarged consumer base. Further barriers to the digital single market were removed with recent rules on portability of [online content](#). Another initiative facilitating cross-border trade is a proposal for a regulation on cross-border [parcel delivery](#) services, which seeks to improve price transparency and regulatory oversight of the sector, ultimately making delivery services more affordable for customers and businesses.

In December 2017, following consultation of the European Parliament, the Council adopted a series of measures to simplify [VAT rules](#) for start-ups, micro-businesses and companies selling goods online. This should lead to [increased trade](#) between Member States, and help companies to lower their tax compliance costs. In March 2018, the Commission proposed new rules on [digital taxation](#), which seek to create a fair and growth-friendly tax system for digital activities, with increased predictability and a genuine level playing field for businesses. Consumers and enterprises will also benefit from the revised [Payment Services Directive](#), applicable since January 2018, which contains measures to make payments safer and cheaper, and enhance consumer rights and innovation, and is likely to contribute to increase digital commerce in the EU.

In May 2017, the Commission adopted a proposal for a [single digital gateway](#), which aims to facilitate the access of people and businesses, through a single digital entry point, to high-quality information, online administrative procedures and assistance services. Member States will have to make available online 13 key administrative procedures in the language(s) of the country and in one additional EU language. These procedures include those particularly relevant for companies, such as starting a business, registering as an employer, registering employees with pension and insurance schemes, notifying the end of contracts to social security offices, and paying social contributions for employees. According to the 'once-only' principle, users would submit documents only once, and could request that they are reused in other procedures. A fully fledged gateway could be online as of 2020.

In January 2017, the Commission adopted a proposal for a [European services e-card](#), which would introduce a simplified electronic procedure enabling providers of business and construction services to fulfil the administrative formalities required to provide services abroad. It would be issued by the home Member State, and the host country could object it only on the grounds of public interest. This voluntary electronic procedure is expected to generate major cost savings for businesses, possibly of up to 50 % of the current level of costs incurred to fulfil administrative formalities covered by the e-card.

Furthermore, the Commission's 2017 State of the Union 'letter of intent' announced an initiative on company law by the end of 2018, to facilitate the use of [digital technologies](#) throughout a company's lifecycle, as well as on cross-border mergers and divisions.

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## ENDNOTES

<sup>1</sup> In June 2016, the European Parliament adopted a [resolution](#) focussing on the impact of digital technologies on the financial sector.

<sup>2</sup> Besides the research activities, an [action plan](#) was adopted by the Commission in September 2016 for the development of 5G networks in Europe.

<sup>3</sup> The proposal for an e-Privacy regulation aims to protect the right to private life and focuses on electronic data.

<sup>4</sup> Such data include, for instance, data about the weather or about traffic, or machine-generated data collected by sensors in connected appliances.

<sup>5</sup> A recent [research paper](#) found that price differences for identical products remain significant both in traditional and online channels, calling into question the effect of e-commerce on the integration of the single market.

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