

The Digital Revolution – challenges for digital policy and ethical questions in finance¹

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1. Introduction

The digital revolution is the most important mega trend of our times. It compares in importance for economy and society with the industrial revolution. Digitisation raises numerous new legal and ethical questions. Upholding privacy, securing trust and enabling the widest possible inclusion, for instance, are key issues with relevance across the entire digital economy and society. The insightful paper by José Manuel González-Páramo has presented new ethical questions for finance². Here, they are discussed from the perspective of digital policy.

Policy makers are facing the challenge to provide the right framework conditions for digitisation to produce its beneficial effects while limiting potential risks. Providing these conditions is challenging partly because of the rapid development of technology and of business models and the comparatively slow process of law making. It is also challenging because introducing new or altering existing regulatory settings have impacts on the process of innovation, which is one important determinant of future overall welfare. Hence, policy makers tend to tread carefully before introducing regulation. Where a principles-based approach is followed it also leaves room for co- and self-regulation. In such a setting, ethical standards developed by market players can play an important role.

Retaining control and self-determination as regards the access to and use of personal (and non-personal) data is a central issue from the perspective of the person but also from the perspective of a well-functioning and innovative data economy. In a digitised world, financial inclusion itself depends on “digital inclusion”, i.e. sufficiently good access to the internet for everyone³. A focus of corporate social responsibility actions on areas such as digital skills and digital inclusion can support the success of a digitisation in line with the values of the Social Market Economy.

Fears of the uncertain impact of a globalised digitisation of the economy on employment and social cohesion could undermine the social and political acceptability of digitisation in the same fashion as resistance to globalisation has increased. The risk is that any attempt to block or slow down the digitisation of the economy or in specific sectors would likely produce the most negative effects in the areas where this is attempted. In a world marked by digitisation, digital exclusion would also imply economic, financial and to a large degree, also social exclusion. Hence, policy makers, social partners, entrepreneurs and finance must make the

¹ This note reflects the personal views of the author and is not attributable to the European Commission.

² José Manuel González-Páramo “Digital Impact on Payments, Credit and Financial Risk Management: New Ethical Questions?” Madrid 2017.

³ The Commission has spelled out this objective in its Communication on a European Gigabit Society and has introduced a rule regarding digital inclusion in the provisions of the proposed European Electronic Communications Code as regards Universal Service. See European Commission Communication: “Connectivity for a Competitive Digital Single Market - Towards a European Gigabit Society. COM (2016) 587 final, 14 September 2016, p. 11. Downloaded at http://ec.europa.eu/newsroom/dae/document.cfm?doc_id=17182.

digitisation of the economy as inclusive as possible, firstly through the widespread provision of access to the internet and through digital skills in schooling, academia and life-long-learning.

This note discusses in section 2 the nature of the digital revolution and its significance and in section 3 the impact of Fintechs for the financial sector. Section 4 describes the EU's digital policy relevant for financial services. Section 5 concludes on the relationship between regulation and self-imposed ethical constraints by market players.

2. The Digitisation of the Economy

The assessment of the nature of the digital revolution holds important implications for the way in which individuals, groups, enterprises, social partners and policy makers should approach the issue. Many believe that digitisation will affect and encompass all sectors of economy and society across the globe, that the process is unstoppable and that it is moving with ever-increasing speed. The conclusion is that this process of massive structural change must be embraced and—to the extent possible—shaped, as it cannot reasonably be slowed or stopped without missing important economic and social opportunities.

The digitisation of the economy is bringing disruption of many established business-models and dis-intermediation in many if not all value chains. It promises gains in productivity and overall welfare. Innovative platforms are increasingly placed at the top end of the value chain. They provide considerable value added to their users through easy and comfortable access to products and services. They have been a force of innovation. Control of user data along with network effects afford them considerable structural strategic and competitive advantages. Online platforms have the potential increasingly to concentrate value creation. Whichever enterprise has the chance to take on the innovative features of a platform will have an interest to do so. For enterprises, important factors in the decision to digitise their business are questions of trust relating to data protection, data security, data access etc. e.g. when using cloud services and when co-operating with business partners across the value chain in an automated fashion⁴. Without trust, digitisation cannot happen.

The effects of the digitisation of the economy on employment and economic growth are not easy to predict. For the European economies, massive gains in terms of economic growth are being forecast⁵. As far as employment is concerned, the structural change associated with the so-called fourth industrial revolution will destroy some jobs and create new ones. With advances in automation and robotics, it is clear that repetitive tasks and heavy physical as well as dangerous tasks will increasingly/entirely be left to machines and robots. Many traditional blue-collar jobs as well as low-skilled jobs are therefore likely to be displaced to a large extent. However, with big data analytics and artificial intelligence, also large numbers of

⁴ See European Commission Communication “Digitising European Industry. Reaping the full benefits of a Digital Single Market”. Downloaded at: <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52016DC0180&from=EN>.

⁵ See European Commission Communication: “A Digital Single Market Strategy for Europe”, COM (2015) 192 final, 6 May 2015, p.3. Downloaded at: <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52015DC0192&from=EN>.

traditional white-collar and more highly-skilled jobs, including analytical and research jobs, will be displaced by self-learning robots and software. Many of the new jobs expected from digitisation are likely to be higher-skilled in nature. The overall balance is far from clear. “Re-shoring” (i.e. the return of jobs that were previously moved to lower-cost countries) could be the result of a combination of digitisation driving down marginal costs of production while enabling product personalisation thereby providing tailor-made products at mass-market prices. Thus production and jobs that in the past moved to low-wage countries could return to previous production locations in high-wage countries, raising the question of what such developments will imply for developing and emerging market countries. However, the potential benefits from digitisation for these countries should not be underestimated, in particular in view of the relatively low-cost options for broad-based financial inclusion and digital business opportunities that become possible once digital inclusion is secured⁶. Digitisation could therefore hold important gains also for people and businesses in these countries, in particular through access to the global digital marketplace, if they pursue a systematic digitisation strategy.

3. Fintechs as drivers of digital innovation in finance

For the financial sector the digital revolution has come under the name of “Fintechs”, companies using digital technology to provide innovative financial services marked by the ease and comfort similar to that of any smart phone application. The success of the Fintechs is based on the harmonious interlinkages between hardware and software and the use of compatible and interoperable standards and technologies⁷. It is also the result of on their high degree of specialisation. Fintechs tend to focus on one specific type of financial service (such as payments services; crowdfunding-crowdinvesting-crowdlending; Robo Advice; automated portfolio management; social trading).

The competitive pressures exerted by the Fintechs have incentivised many traditional financial sector players to innovate and to adjust their business models. While there is considerable competition between Fintechs and “Insurtechs” on the one hand and banks and insurance companies on the other, there are also more symbiotic relations between them. For example, many Fintechs and banks cooperate closely in partnership, banks have acquired Fintechs and some banks have even established start-up incubators with a view to fostering a Fintech ecosystem with which they in turn interact. The issue of a level playing field for the new and the traditional players remains relevant to the extent that some of the new players deliver comparable financial services but may escape the same regulatory requirements as banks and insurers, at times because they tailor their business models precisely to avoid falling under such obligations. There are however also Fintechs which have deliberately opted to register so as to be supervised as part of their business model with the aim to engender the trust and confidence of their potential clients. Among regulators and supervisors and most financial sector actors, the principle of “same service, same risk, same rule” appears to be

⁶ See Lund, Susan and Tyson, Laura: “Digital Globalization and the Developing World”, downloaded at <https://www.project-syndicate.org/commentary/digital-globalization-opportunities-developing-countries-by-laura-tyson-and-susan-lund-2016-03>.

⁷ See Dapp, Thomas F.: "[Fintech reloaded – Die Bank als digitales Ökosystem](#)". Deutsche Bank Research 2015.

generally supported. However, views on regulatory sandboxes for innovative newcomers tend to differ⁸. As regards electronic payments, the revised Payment Services Directive (PSD 2) has brought the new actors in the area into the fold of European regulation⁹.

4. Enabling the digital economy—The EU’s policy approach

Digital policy in Europe aims to bring about a vibrant digital economy by removing existing barriers to cross-border digital transactions, by providing a solid framework for privacy, personal data protection and for cybersecurity, by enabling the platform economy and by clarifying the rules that should govern access to and use of data and enable the free flow of data across borders so that the data economy can thrive. One pre-condition to the success of digitisation is the provision of a top quality, very-high-capacity digital infrastructure¹⁰. All of these aspects of digital policy are relevant for financial services. Of practical importance is also the possibility securely to provide a valid signature electronically (e-identification)¹¹. The European Commission has been or is acting in all these areas in the context of its Digital Single Market Strategy¹².

The backbone of any well-functioning economy, in particular the digital economy, is trust. Without it, neither persons nor enterprises would be ready to engage in a framework where personal and business data are at stake. Trust in the digital economy requires strong data security and data protection. At European level, the General Data Protection Regulation (GDPR) has laid down a unified framework as regards the rules governing personal data which strengthen citizens’ rights and build trust¹³. It establishes a “right to be forgotten”, a right to data portability and the right to be informed of data breaches. Based on these common rules the GDPR thus enables the free flow of personal data within the European Union. Via adequacy decisions and a number of alternative tools, the international transfer of personal data is enabled based on equivalent protection standards¹⁴. The GDPR also provides easier access to one’s own data and introduces the principles of data protection by design and by default, which require big data operators to make good data protection practices an essential building block of their business plan. The major value added of the GDPR is also that it

⁸ See speech by BAFIN President Felix Hufeld opening the “BaFin-Tech 2016”, 28 June 2016. Downloaded at: https://www.bafin.de/SharedDocs/Veroeffentlichungen/DE/Reden/re_160628_bafin-tech2016_p.html. For the FCA’s approach to sandboxes see: Speech by Christopher Woolard, FCA Director of Strategy and Competition, delivered at the Innovate Finance Global Summit on 11 April 2016. Downloaded at: <https://www.fca.org.uk/news/speeches/innovate-finance-global-summit>.

⁹ Directive on payment services in the internal market, amending Directives 2002/65/EC, 2009/110/EC and 2013/36/EU and Regulation (EU) No 1093/2010, and repealing Directive 2007/64/EC, Official Journal of the European Union L337/35-27.

¹⁰ This has been the object of a major policy initiative and legislative proposals by the European Commission presented on 14 September 2016. See the press release on the Connectivity package. Downloaded at: http://europa.eu/rapid/press-release_IP-16-3008_en.htm.

¹¹ Regulation (EU) No 910/2014 on electronic identification and trust services for electronic transactions in the internal market and repealing Directive 1999/93/EC. Official Journal of the European Union, L257/73-114.

¹² See footnote 5 above.

¹³ Regulation (EU) 2016/679 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation), Official Journal of the European Union, L119/1-88.

¹⁴ European Commission Communication: “Exchanging and Protecting Personal Data in a Globalised World” COM (2017) 7 final, 10 January 2017.

establishes one single rulebook for data protection that is valid across the European Union and replaces the many different rules valid so far at the level of Member States or, in some cases, at the level of regions.

Maintaining cybersecurity will remain an ongoing challenge, given the increasing frequency, magnitude and impact of security incidents. At European Union level, the Directive on security of network and information system (NIS Directive) aims to bring about a high common level of cybersecurity across the EU by improving national cybersecurity capabilities, which are currently uneven across the EU; enhancing cooperation between the Member States, which so far takes place in small and closed circles; and by ensuring a high level of risk management practices in key sectors. In particular, the Directive requires companies in critical sectors—such as energy, transport, banking and health—as well as key internet services such as e-commerce platforms, search engines and cloud computing services to adopt risk management practices and report major incidents to the national authorities¹⁵. In addition, a Public Private Partnership on cybersecurity launched in July 2016 complements the NIS Directive¹⁶. It is important to note that responsibility for the transposition and implementation of the Directive rests with EU Member States. As regards online payments, PSD 2 introduced enhanced security measures to be implemented by all payment service providers¹⁷.

To enable an optimal business environment for online platforms, the European Commission has put forward a number of principles that will guide any future regulatory approach that may be taken in this area: a) a level playing field for comparable digital services; b) responsible behaviour of online platforms to protect core values; c) transparency and fairness for maintaining user trust and safeguarding innovation; d) open and non-discriminatory markets in a data-driven economy. Any future regulatory approach should be both flexible and future-proof in light of the evolving nature of the platform economy. In this context, principles-based self- or co-regulatory measures will have a role to play. This allows the core values of the Social Market Economy to be safeguarded while fully embracing the further deployment of online platform-technology across economic and social life¹⁸.

The European data economy is currently constrained by barriers to the free movement of data within the EU as well as by numerous legal uncertainties regarding access to and transfer of data, data portability and liability issues of non-personal, machine-generated data. Some of these issues also raise profound ethical questions, in particular as regards liability and privacy issues related to the use of automated systems, robots and artificial intelligence. In January 2017, the European Commission declared its intention to address unjustified data localisation

¹⁵ Directive (EU) 2016/1148 concerning measures for a high common level of security of network and information systems across the Union. Official Journal of the European Union, L194/1-30.

¹⁶ See European Commission press release (IP/16/2321) downloaded at: http://europa.eu/rapid/press-release_IP-16-2321_en.htm.

¹⁷ See European Commission Fact Sheet Payment Services Directive (Memo/15/5793). Downloaded at: http://europa.eu/rapid/press-release_MEMO-15-5793_de.htm?locale=en.

¹⁸ European Commission Communication: “Online Platforms and the Digital Single Market Opportunities and Challenges for Europe”, COM(2016) 288 final, 25 May 2016. Downloaded at: <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52016DC0288&from=EN>.

requirements imposed by public authorities, including in the financial sector¹⁹. Such restrictions relate to requirements imposed on the location of data for storage and processing purposes. The issue of the free movement of data concerns all types of data. Given that the GDPR has established unified rules on data protection, privacy concerns should not be used any more as a reason to restrict the free flow of data. At the current juncture and in view of the complexity of the issues, further consultation and evidence gathering will however be necessary before regulatory and enforcement measures may be launched.

The Commission also proposes options for discussion on the best way to ensure the access to and the re-use of data and data transfer. A future EU framework for data access should enable value creation through improved access to machine-generated data; by providing incentives for data sharing and taking account of differences in bargaining power between market players. Under such a framework legitimate interests of market players that invest in product development should be taken into account. At the same time, it should also ensure a fair sharing of benefits between data holders, processors and application providers with value chains. The framework should also minimise potential lock-in effects. Confidential data would obviously be protected. The options to deliver these objectives range from guidance on incentivising business to share data; fostering the development of technical solutions for reliable identification and exchange of data through Application Programming Interfaces (APIs); to the introduction of default rules for contracts relating to data and an unfairness control in B2B contractual relationships. They also encompass the option for public authorities to have access to data where this is in the “general interest”; the introduction of a data producer’s right, where the “data producer” would be the owner or long-term user of the device generating the data. Finally, there could be a framework based on fair, reasonable and non-discriminatory (FRAND) terms for data holders to provide access to the data they hold against remuneration after anonymisation. Important further elements of the Commission’s 2017 Communication on the data economy concern liability issues and data portability for non-personal data, building on the data portability right of the GDPR for personal data.

As regards data access in payment services, PSD2 allows new actors in the field (payment initiation services providers and account information services providers) access, under regulated and safe conditions, to the information stored on the account and initiate payments on behalf of the account owner. These new actors will be thus able to cooperate and compete with banks in the provision of innovative, user and e-commerce friendly solutions in banking and payments.

5. Conclusions – Digitisation and Ethical Questions in Finance

The digitisation of economy and society raises many new legal and ethical questions. They centre around the increasing role of data, both personal and non-personal; on issues of privacy, trust and cybersecurity; on competition and fairness in B2B relations in particular in the context of online platforms; and on questions of liability and safety in the use of

¹⁹ European Commission Communication “Building a European Data Economy” COM(2017)9 final, 10 January 2017. Downloaded at: <http://www.kowi.de/Portaldata/2/Resources/fp/2017-COM-Building-a-European-Data-Economy.pdf>.

automated systems. All of them also have direct relevance for financial services, as set out by José Manuel González-Páramo.

Digital technologies have brought about significant innovation in finance. They have helped enhance the range and quality of offers of financial services and their accessibility for users. One of the most important ethical questions for society stemming from digitisation is that of inclusion. Without digital inclusion, financial, economic and social inclusion will be impossible or impaired in a society shaped by digital technologies. However, where digital inclusion is delivered, digital technologies will certainly be able to enhance financial inclusion and also the value added for persons, enterprises—in particular small ones—and society that can be provided by the financial services sector. A focus of corporate social responsibility actions on areas such as digital skills and digital inclusion can support the success of a digitisation in line with the values of the Social Market Economy.

European digital policy is acting as an enabler for the digital economy in all its aspects, starting with the right framework conditions for investment in high-capacity digital infrastructure²⁰. In order to achieve the overall objective of enabling the digital economy, policy and regulation has provided a clear and binding regulatory framework for the protection of personal data and for data security and has defined principles for a thriving platform and data economy. One central challenge for digital policy is the rapid pace of innovation, technological change and the creation of new business models. Hence, policy makers tend to tread carefully before introducing hard regulation.

Where a principles-based approach is adopted, it aims to advance and frame the ongoing debates on legal and ethical issues. It should provide clear direction on the course of action if the principles are not effectively put into practice. Such an approach leaves room for co- and self-regulation and thus for market players to develop and implement ethical standards. They can therefore play an important role. In the digital economy, all actors and in particular consumers and small enterprises are going to place a high premium on trust. Hence, a strong, proactive and visible adherence to principles such as data protection by design and by default as well as good risk management practices and swift reporting on major security incidents will help engender trust and consumer confidence.

Disclaimer

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²⁰ See footnote 3.