Citizen-Centred Digitalisation

Towards a co-evolution of technology and society

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About

The European Liberal Forum

The European Liberal Forum (ELF) is the official political foundation of the European Liberal Party, the ALDE Party. Together with 39 member organisations, we work all over Europe to bring new ideas into the political debate, to provide a platform for discussion, and to empower citizens to make their voices heard.

ELF was founded in 2007 to strengthen the liberal and democrat movement in Europe. Our work is guided by liberal ideals and a belief in the principle of freedom. We stand for a future-oriented Europe that offers opportunities for every citizen.

ELF is engaged on all political levels, from the local to the European. We bring together a diverse network of national foundations, think tanks and other experts. At the same time, we are also close to, but independent from, the ALDE Party and other Liberal actors in Europe. In this role, our forum serves as a space for an open and informed exchange of views between a wide range of different actors.

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Foreword

Dear reader,

We live in rapidly changing times. Hardly ten years have passed since the launch of the first iPhone, but a time without smartphones feels like the distant past. This is not only the case for us as individuals, but also for society as a whole. The ever-faster pace of digitalisation has had, and will continue to have, major economic, political and societal implications.

At the European Liberal Forum (ELF) we have worked on this topic for a number of years. Our previous publications and projects focused on the economic effects of digitalisation. With this publication, we want to move citizens and the society front and centre.

Artificial intelligence will be a complete game-changer on so many levels, but its impacts are still unclear; big data could help the state influence the behaviour of citizens, but potentially at the cost of privacy and individual agency; social media has led to

a democratisation of the political debate, but might have contributed to the rise of populism. These are just some of the dilemmas we are struggling with.

While the US has been rather *laissez-faire* so far regarding digitalisation and China's rampant digitalisation is notorious, it seems Europe is trying to find a path of its own. This path is fraught with the ethical, social and economic considerations necessary to achieve a full co-evolution of society and technology.

Liberals should be at the forefront of developing smart solutions to meet these challenges. This publication explores possible answers and policy recommendations, but just as importantly, it will spearhead further projects by our member organisations, some of which participated and made this publication possible. It is certainly a privilege to be part of a pan-European network offering different perspectives, and we are looking forward continuing to work on this important topic. After all, we are just at the beginning of the digital age.

Dr Jürgen Martens MP
President of European Liberal Forum

Introduction

Two hundred years ago Mary Shelley's novel 'Frankenstein' was published in which a scientific experiment gone wrong creates a horrific monster. It is safe to say that the fascination and fright of science and technology goes back a long way. Since the dawn of the computers, this has increasingly been directed towards digital technology. The blockbuster movie 'The Matrix' in 1999 and more recently the television series 'Black Mirror' are two examples.

These cultural references are inspired by developments that also have important political implications. Technological advancement affects our lives and societies in new and unpredictable ways. The future is here, and it will not wait for political decision-making to catch up. Self-driving cars are already making their way into the streets, robots can independently walk up and down stairs and help do the dishes, the social

credit system in China uses an infinite amount of data to influence the behaviour of the country's citizens, and social media has changed the way we socialise, mobilise and organise.

The possibilities are infinite, but so are arguably also the pitfalls. From a Liberal point of view, we want to make the most of the opportunities presented by digitalisation and ensure it is a force for good for every individual. All the while, the interests and prospects of citizens should be at the heart of every consideration. This is what the concept of citizen-centred digitalisation is all about. To dig deeper into this subject, this publication has been organised into five chapters, each covering a different aspect.

Chapter one, written by Deimantė Rimkutė deals with the benefits and challenges of artificial intelligence (AI), and how to regulate it. Regulating something for which the consequences are still unclear is easier said than done. This challenge has been denoted as 'Collingridge Dilemma', stating that at the early stages of development of a new technology, regulation is difficult due to a lack of information. In the later stages, on the other hand, the technology is so entrenched into our lives and societies that it is usually resistance to regulation.

To further discuss how to regulate digital tech-

nology, and specifically the EU's role in this, Alek Tarkowski and Natalia Mileszyk argue in Chapter Two that any legislation intended to regulate digital technology should move beyond just addressing the short-term market effects. It should also take into account the fact that digitalisation changes how we communicate, build relations and how our institutions function. The chapter further argues that while the General Data Protection Regulation (GDPR) is very much in line with this citizen-centred approach, other EU regulation is still focused on the interests of the owners of the technology at the expense of the users. This was particularly the case of the Copyright Directive, in which the users were subservient to the interests of the rightsholders of copyrighted material.

Chapter Three is authored by Robin Vetter and provides us with a case study on digital technology and artificial intelligence in education. This is done via a comparative approach between Europe and China. The chapter highlights a common misconception when comparing the European and Chinese education systems: that the former is better at creativity while the latter at discipline. In reality, creativity is encouraged in China and built into the cutting-edge artificial-intelligence technology increasingly used in the education system. The challenge for Europe is

therefore how we can construct an education system in which critical thinking is strengthened for the digital era, while at the same time making sure we do not lose out in the global competitiveness race.

Chapter Four features another case study in which Ciprian Negoita discusses 'Smart Cities' in Romania. New technology is enabling completely new opportunities to utilise all corners of our cities. To understand what is meant by the term 'Smart City', it helps to compare traditional and smart phones. The phones of the pre-digital era were by any measure impressive and 'smart'. However, what ultimately makes smart phones 'smart' is their multifunctionality. Just like the smart phone made previously unimaginable things possible, the same multifunctionality could presumably be added to the city. The chapter concludes that Romania is lagging behind compared to most other EU member states in this regard, but that public smart-city initiatives have rapidly been initiated in the past couple of years.

The digital age not only challenges our societies as a whole, but could arguably pose even bigger challenges to us as Liberals. This is discussed by Csaba Toth in Chapter Five. Since Liberals have always been the champions of new technology and creative destruction, they could easily be the scapegoat for groups dis-

placed economically and politically by digitalisation. This is particularly the case for technologies perceived as harmful and whose impacts are very visible. If we want a Liberal citizen-centred digitalisation, we must first safeguard a stable place for the Liberal movement in the political spectrum, now and in the future.

We wish to thank the authors, as well as the ELF member organisations, Institute for Liberal Studies (ISL), Fores, Projekt: Polska, Republikon Institute and the European Liberal Youth (LYMEC), for contributing to this publication. We also wish to thank research editor Annalisa Tulipano, the referees and designer Ivan Panov.

Enjoy the read!

Erik Liss,
European Liberal Forum

The impact and regulatory challenges of Artificial Intelligence

Deimantė Rimkutė

Imagine governments using artificial intelligence to help officials draft responses to queries submitted to parliament. That's no longer not just a scene from *Blade Runner* or *Iron Man*; it's already a reality in Japan. And Artificial Intelligence (AI) will be even more prevalent in many more areas on various levels in the very near future. Arguably, AI has become one of the most promising technological improvements of the 21st century. Stephen Hawking once said "Success in creating effective AI could be the biggest event in the history of our civilisation. Or the worst."[1] Yet AI raises a lot of unanswered questions and doubts.

1 Kharpal (2018)

Some, like MIT Professor Max Tegmark or the businessman Elon Musk often argue that creating autonomous smart machines that make decisions without any human-based interaction, could pose an existential threat to our existence. Scientist Stephen Hawking once pointed out that once humans develop AI, "[i]t would take off on its own, and re-design itself at an ever increasing rate. Humans, who are limited by slow biological evolution, couldn't compete and would be superseded".[2]

But there are voices offering more-optimistic scenarios. Mark Zuckerberg has, for example, expressed optimism about the future of AI by referring to the many benefits it will result in.[3] For example, in the banking industry, artificial intelligence has the ability to monitor various activities at the same time and to assess different issues to "make sure that suspicious acts such as fraud do not take place."[4]

The optimistic and pessimistic scenarios on AI implies different conclusions on how to regulate it. Should we actively promote it in order to claim all the benefits of it or emphasise reducing the risks? Or ideally, can we have both? Our success in regulating AI depends on a number of factors. Before we can go into

2 Isberto (2018)
3 Kharpal (2018)
4 Nadimpalli (2017) p.3

detail about that, we must first unpack what AI is and examine its entry into the annals of history.

From golden robots to unseen technological possibilities

Ideas project reality. Philosophy introduces a new way of thinking and offers unseen concepts. The idea of a robot is no exception to this. It was already present in mythological stories and even in the works of political thinkers many years ago. The ancient Greeks had a myth of golden robots, in which "up on Mount Olympus, Hephaestus built a bronze palace for the gods and crafted golden robot-like statues to serve him".[5] French philosophers, including René Descartes and Julien Offray de La Mettrie, portrayed humans as machines.

The idea of an intelligent machine started to become a reality in the 1940s with the first digital computer. AI as a software that augments knowledge-based work undertaken by humans, has boomed in the last 15 years with declining computing costs, access to Big Data and the introduction and expansion of the internet. Currently, AI can broadly be defined in two categories: General AI and Narrow AI. This classification is key for understanding and trying to regulate AI.

5 Greek-gods.info

General AI and Narrow AI

General AI is used to describe an independently thinking machine that is capable of replicating human-level (or greater) thought. While this form of AI has a big influence on popular culture in general, and in science fiction in particular, no General AI is likely to exist in the near future. But that does not mean that large corporations have not tried to bring it about. Indeed, they have invested heavily in General AI. For instance, Joaquin Candela, Director of Engineering for Facebook's Applied Machine Learning (AML) group, stated that Facebook is working towards a "generalisation of AI" that will, it is argued, be capable of enhancing the speed at which applications can be built by "a hundred-x magnitude", which could hugely impact everything from medicine to transportation.[6]

Narrow AI, in which technology such as Deep Learning allows programs to perform specific tasks at or above human level, is already available today and is being further developed. Examples for Narrow AI usage include driverless vehicles, speech and facial recognition, language translation, lipreading, detecting cancer, and logistics planning.[7] Narrow AI could effectively be designed and used to solve a specific

6 Guihot, Matthew & Suzor (2017) p.403
7 Guihot, Matthew & Suzor (2017) p.402

problem. At first sight, one could think that Narrow AI would pose fewer risks than General AI.

It does, for example, not include the biological evolution of humans, alluded to by Stephen Hawking's warning. However, autonomous Narrow AI processes around large datasets could cause unintended consequences as well. For example, a self-driving Uber car killed a woman in a fatal crash in Arizona. Like any technology, Narrow AI could be used for as a tool for harm. Cyber-attacks could, for instance, be even more dangerous when a perpetrator has Narrow AI at his or her disposal. With these risks in mind, how could, and should, AI be regulated?

Asimov's Laws

An early suggestion for a regulatory framework for robots that has come to be used in the debate on how to regulate AI was proposed by professor and science-fiction writer Isaac Asimov in his 'Three Laws of Robotics'. Asimov's stated that i) a robot may not injure a human being or, through inaction, allow a human being to come to harm; ii) a robot must obey the orders given to it by human beings except where such orders would conflict with the First Law; iii) a robot must protect

its own existence as long as such protection does not conflict with the First or Second Laws.

Asimov's laws are still valuable today. They are even mentioned in a European Parliament resolution stating that: "Asimov's Laws must be regarded as being directed at the designers, producers and operators of robots, including robots assigned with built-in autonomy and self-learning, since those laws cannot be converted into machine code".[8]

This is, however, easier said than done, which is exactly the challenge that regulators are facing. The presumption that AI (and robots) are under control and would follow Asimov's Laws and/or their owner in all cases has already been disproved in practice.[9]

Who is then responsible if a robot breaches one of Asimov's Laws and causes harm? We can think of a number of scenarios in which this would not be very clear.

Is a human responsible if causing harm after following directions by a robot? Or is it the programmer that designed the robot? This opens up legal uncertainty on where liability for AI lies, and this needs further consideration.

8 European Parliament (2017)

9 The world has already seen several cases with unclear liability after robot's breach of law in cases like "Williams vs Litton Industries", "Payne vs. Flexible Automation", or "Holbrook vs Prodomax Automation" and others.

Liability and Artificial Intelligence

Liability is a key component in law since a legal system built on rule of law requires the identification of who is *responsible*. Liability thus usually requires action and intent. John Kingston at the University of Brighton offers three scenarios that could be applied to unpack the question of AI and liability. The first is *perpetrator via another*, where "an AI program could be held to be an innocent agent, with either the software programmer or the user being held to be the perpetrator-via-another". To explain, one can make the comparison to that of a dog and its dog owner. Perpetrator via another implies that the dog owner would be liable for his or her dog's violations due to faulty instructions he or she gave. The second scenario is *natural probable consequence*. It occurs when "the ordinary actions of an AI system might be used inappropriately to perform a criminal act". This would apply if a robot kills an employee because it identified he or she as a threat to its mission. The main task is to find out whether the machine already knew the outcome of "probable consequence of its use". If it did, we would punish the robot (for example disassemble and prohibit it) rather than punish its creator or treat the inci-

dent as an accident. The third is *direct liability*. Action and intention are the necessary conditions here. So, if a self-driving car is breaking the speed limit, the law "may well assign criminal liability to the AI program that was driving the car at that time". In that case, the owner may not be liable since the AI program intentionally was speeding.[10] How this is addressed in practice is currently the subject of regulatory debate in the European Union.

AI and robotics – a priority for the EU

Under the current legal framework, Narrow AI itself cannot be held liable for acts or omissions that cause damage to third parties. It is instead the manufacturers, operators, owners or users who have the responsibility. The EU has, however, already some regulatory guidelines around AI in its soft law (thus not legally binding). A European Parliament resolution mentions possible legal challenges such as liability of a robot in cases when it would breach the law.[11] Although AI currently cannot be liable, the European Parliament states that in a scenario "where a robot can take autonomous decisions, the traditional rules will not

10 Emerging Technology from the arXiv (2018)
11 European Parliament (2017)

suffice".[12] This would give legal liability for damage caused by a robot, providing compensation requiring the party to "make good the damage it has caused".[13]

Since machine-learning systems are based on data collection and since this often requires the collection of personal data, there are also several AI-related aspects in the new General Data Protection Regulation (GDPR). Under the GDPR, entities collecting data from users must allow its users the possibility to pull that "information out of the mix, alter it, limit what's done with it, and explain how the system works".[14]

Furthermore, regulation of AI is also based on existing values, such as those written in Article 2 of the Treaty on European Union and in the Charter of Fundamental Rights. This includes values such as human dignity, equality, justice and equity, non-discrimination, informed consent, private and family life and data protection, as well as principles of the Union law, such as non-stigmatisation, transparency, autonomy, individual responsibility and social responsibility. There are also proposals for creating an appropriate ethical and legal ethical framework for the future. The Commission is planning to make

12 European Parliament (2017)
13 European Parliament (2017)
14 Meyers (2018)

available AI ethics guidelines and guidance. Furthermore, "The Joint Declaration on the EU's legislative priorities for 2018-2019" called for a high level of data protection, digital rights and ethical standards in AI and robotics.[15] The European Commission is increasing its annual investments in AI by 70% under the Horizon 2020 research and innovation programme.[16]

Challenges to regulation: The Collingridge Dilemma

The biggest regulatory challenge is that proposed by the Collingridge Dilemma; "that at the earliest stages of development of a new technology, regulation is difficult due to a lack of information".[17] In its later stages, technology is so well established that there could be resistance to regulatory change from users, developers and investors. Because of this, we cannot *ex-ante* determine what is good and bad regulation. We should therefore emphasise the regulation *processes* rather than believing that we today can sketch out a full regulatory framework. Furthermore, regulators will be at an informational disadvantage to large companies, that will have a better understanding of the

15 European Commission (2018)
16 European Commission (2018)
17 Guihot, Matthew & Suzor (2017) p.422

technology, since they created it. At some point, the regulatory abilities of governments may not suffice.[18] This regulatory dilemma points to the need for closer cooperation between the private and public sectors. Currently, major AI stakeholders are based in the US. Therefore, the EU cannot act alone.

Policy recommendations for developing AI regulation

1. Wider cooperation between the EU and the US needs to be established. Consequently, the EU and US could set the western-values-based standard for the world, with a special focus on an ethical framework, where Asimov's Laws, principles such as non-discrimination, informed consent, private and family life, data protection, transparency, autonomy, individual responsibility and social responsibility would be protected.

2. Increased interaction between public regulators and scholars, researchers and professionals need to be facilitated. Collaboration would help to asses the risks with AI and project a theoretical basis (and jurisprudence) for regulation. A special international interdisciplinary council between the EU and US would provide necessary advice for policymakers.

18 Guihot, Matthew & Suzor (2017) p.391

3. The public sector should actively engage in the AI ecosystem. This way, the public sector could set an example for ethical and citizen-centred use of AI. It would also increase public knowledge about AI, since the public sector (in contrast to private companies) would allow for transparency and scrutiny of how AI is used. This could also mitigate the lack of information problem suggested by the Collingridge Dilemma and decrease the information asymmetry between private companies on the one hand, and regulators and the public on the other. This could in turn pave the way for better regulation.

4. Establishment of 'Regulatory Sandboxes' for AI would allow companies to test their products in a market environment, while ensuring appropriate protection is in place. In the digital world, a Regulatory Sandbox refers to a testing ground for new products and business models in a specific regulatory framework outside general regulation. Since it gives companies and policymakers insight on the effects of new products and business models, it could mitigate the lack information problem suggested by the Collingridge Dilemma.

Beyond markets and modernisation: A vision of human-centred digital policy

Alek Tarkowski,
Natalia Mileszyk

In 1996, John Perry Barlow wrote the "Declaration of the Independence of Cyberspace",[1] in which he presented a vision of the digital-communication space as open and universal, built on respect for individual liberty and rights, and detached from the jurisdictions of states existing in the analogue World. 20 years later, this vision has not come to fruition. Cyberspace, instead of becoming independent, is ever-more entwined with the analogue world and its politics. The term itself, after 20 years, is mainly used to describe

1 Barlow (1996)

digital technologies from the perspective of security or even geopolitical conflicts. And the vision of an open universal internet being lost and replaced by a market-based model of control by corporate monopolies. Or by one in which states enforcing sovereignty in the digital space divide the internet, and control its parts. In both of these narratives, people, users and citizens are forgotten.

At a time when competing visions strive to define the digital space, Europe needs to frame its own approach to the regulation of digital issues. We argue that this approach should be based on the vision of human-centred design of policies and technology. We present three necessary shifts in policymaking that would make this possible:

1. a shift from an understanding of digitalisation as a simple modernisation strategy based on the deployment of a growing number of ever-new digital technologies in society, to an approach that sees digitalisation as deeply transformative.
2. a shift from current market orientation in digital policymaking to a model that is more strongly value-based and places humans, users and citizens at its centre.

3. a stronger future orientation and longer time perspective is needed to fully understand the consequences of policymaking.

We illustrate our paper with a case study of the policy debate on the new Directive on Copyright in the Digital Single Market[2] (further: the Copyright Directive). The legislative process has been taking place since 2016 and is nearing an end at the time of writing. Both authors have been involved in this process as civil society representatives advocating for user rights (both as representatives of our foundation, Centrum Cyfrowe,[3] and Communia,[4] the European association on the digital public domain). We note that a human-centred approach has been largely missing from this process – one that is a crucial element of the current Digital Single Market strategy. We see this as a failure that we can learn from.

We believe that in digital policymaking, one of the core questions asked about every policy should be "is this good for humans, individual citizens and the users of the technology?" We would like to make a case that such a human-centred approach is possible and should be strengthened in the European Union.

2 European Commission (2016a)
3 https://centrumcyfrowe.pl/en/homepage/ Retrieved 20/11/18
4 http://communia-association.org/ Retrieved 20/11/18

European copyright reform - the story of a missing human-centred policy

Some claims that copyright reform is one of the most important legislative initiatives of The Juncker Commission. It will influence not only the creative sectors, but above all the way the internet functions, how innovation is enhanced and the future of education. In June 2018, the legislative process on the Copyright Directive was in its second year - the European Commission published its proposal in late 2016. The process was nearing the trialogue, the final phase in which the three institutions involved in the EU legislative process negotiate the final version that would be put up for a ultimate vote in the Parliament. Within the Council of the European Union, Member States had agreed on a position. The European Parliament was finalising its position on the Directive, developed largely within its Committee on Legal Affairs (called: JURI). In early July, a crucial vote would determine whether the JURI version would be approved in the Plenary, or whether the Parliament would decide to debate the issue further and allow all members of the EP to table amendments to the proposal.

The scope of the long-expected copyright reform in the European Union was presented by the European Commission in the communication "Promoting a fair, efficient and competitive European copyright-based economy in the Digital Single Market" in September 2016.[5] The economic necessity of the copyright reform was presented in accordance with main objections of the Digital Single Market strategy (DSM).[6] The strategy highlighted the need for actions leading to wider online access to content for users, including audiovisual, music, books and other sectors, and to a market and regulatory environment that continues to be conducive to creativity, its sustainable financing, and cultural diversity. The introduction to the strategy states as following:

> *"The global economy is rapidly becoming digital. Information and Communications Technology (ICT) is no longer a specific sector but the foundation of all modern innovative economic systems. The Internet and digital technologies are transforming the lives we lead, the way we work – as individuals, in business, and in our communities as they become more integrated across all sectors of our economy and society."*
> *- European Commission (2015)*

5 European Commission (2016b)
6 European Commission (2015)

The needs of citizens to benefit from the digital shift and, the opportunity to be more active participants of cultural or democratic landscape were mostly left out in the strategy. It emphasised economic aspects of digital transformation of the market, not the society.

In the public debate there were various explanations as to why copyright reform was essential. Most of them were related to economic growth and the financial sustainability of the creative sectors. The narrative was built around the fact that the EU is home to some of the largest publishing houses[7], a dynamic music industry, and a film sector that receives praise worldwide - but not around the perspective of citizens benefiting from the cultural content. The explanatory memorandum to the proposal of the Copyright Directive[8] states that:

> *"The evolution of digital technologies has changed the way works and other protected subject matter are created, produced, distributed and exploited. New uses have emerged as well as new actors and new business models. In the digital environment, cross-border uses have also intensified and new opportunities for consumers to access copyright-protected content have materialised." - European Commission (2016a)*

7 Anderson (2017)
8 European Commission (2016a)

The status quo was identified correctly, but only from the perspective of business models and opportunities for financial growth. As if the policymakers forgot that copyright law also defines a framework for society to benefit from culture, science, education and the sharing of knowledge. In these spheres, copyright affects a much broader range of stakeholders than those traditionally involved in copyright debates: rightsholders and commercial intermediaries.

The document that called for the need for the reform for the very first time was a resolution of the European Parliament from 2015.[9] It mentioned aspects of copyright law that could be seen as human-centred. And which have been omitted in the legislative process that ensued. It mentioned fundamental rights, safeguarding access to knowledge and information, the digital revolution that has brought with it new technology, means of communication and opened the way to new forms of expression, freedom of expression, freedom of information and freedom for the arts and science.

9 European Parliament (2015)

The copyright reform: the story from a technocratic process to social protest

In the weeks before the vote of July 5, the issue suddenly drew public attention, and the policy process quickly went viral. Hundreds of thousands of individuals expressed their opinion about the proposed Copyright Directive – most of them against the JURI proposal, which have been seen as highly biased in favour of the interests of copyright rightsholders, and as potentially negatively affecting the basic rights of internet users. At the height of the campaign against the proposal, the email accounts of Members of the Parliament overflowed with protest messages.

In several European states, a one-day Wikipedia blackout reminded us of similar actions in early 2012, targeted initially against the proposal for ACTA (Anti-Counterfeiting Trade Agreement) and for SOPA (The Stop Online Piracy Act) and PIPA (The PROTECT IP Act) laws in the US. These blackouts, though limited in scope, were a powerful sign of the severity of the situation perceived by the protesters. Wikimedia (the foundation behind the Wikipedia) had only once before undertaken such a blackout.

As with any popular protest, the protests portrayed highly simplified versions of the policy proposals on the table. The streets and the internet found innova-

tive ways of explaining complex issues. Policymakers and lobbyists flinched at what they perceived as overly simplified, or even bogus depictions of the policy proposal. Still, hundreds of thousands, if not millions of Europeans, cared about how copyright law would affect their activities online. They cared about their freedoms, most importantly freedom of speech. And their criticism was supported by a broad range of activists, experts and academics who have been working on this issue. [10]

The July 5 vote did not approve the JURI proposal and gave a green light to the discussion on the reform on the Plenary (which many stakeholders and lobbyists were seeking to avoid). It was commonly seen as a loss for the lobbyists of the rightsholders. Over a two-month period, amendments to the Copyright Directive were proposed and put up for a plenary vote in early September. The vote in the EP Plenary, which took place on September 12, was a definitive win for the lobbyists that represent the copyright holders and the creative industries that benefit from strong copyright protection.

Why did the September vote end in such a result? The underlying assumption of the ongoing copyright reform process is that copyright is an author's right

10 Copyright for Creativity, "Resources on copyright reform", www.saveyourinternet.eu/resources/. Retrieved 20/11/18

(with all the market implication of such an approach) more than a user's right. The policymakers failed to solve the issue of how these two perspectives can coexist and be equally recognised. Users play two important roles within the copyright system: they receive copyrighted works, and (some) users become authors. Both roles further the copyright system's larger project to promote the progress of knowledge. But since the human-centred perspective was missing, it resulted in nobody questioning the business needs of the creative industries to be granted more protection in order to resolve the financial challenges faced by the business.

In early 2018, it seemed that the General Data Protection Regulation 2016/679 (further: GDPR) would be the crucial piece of legislation that will be the symbol of European regulation of the internet. One could argue that the time of heated debates on copyright experienced in Europe six years ago, when the ACTA agreement was negotiated, is over and that privacy-related issues are the only significant policy debate happening. But while GDPR has definitely been a crucial regulation, it might come as a surprise to many that 2018 will also be remembered as a year, in which a fundamental debate on copyright law took place in Europe as well.

For us in Poland, it is hard not to draw comparisons with the time of ACTA. At the turn of 2011 and 2012, Poland turned out to be a country with the most heated public debate on how copyright – and more broadly intellectual property regulation – can affect internet users and their basic rights, such as freedom of expression, or right to access to knowledge and culture. It is not a surprising that #ACTA2 became the most prominent hashtag with which policy debates on the new Copyright Directive were tagged in 2018. The hashtag was used by protesters, YouTubers commenting on the issue, but also by the traditional mass media and even public institutions.

The Freedom of Panorama rule: the story of the debate that failed to be human-centred

The European copyright reform addressed various topics. We would like to analyse in detail the case of a proposed "freedom of panorama" (FoP) provision. This case shows how much the needs of citizens have been neglected in this policymaking process.

Freedom of panorama is the exception to copyright, which allows all people and entities to use photos of public spaces, even if copyrighted materials (e.g. sculpture, graffiti, buildings) are visible on the

photos. With such an exception one can share memories with friends on social media, make videos or publish photos without risking breaching copyright. With our modern visual culture and the popularity of photos being shared on online platforms, such an exception seems nothing but reasonable and adjusted to the cultural needs of users. It also seems reasonable from an economic perspective, since such activities do not harm anyone's financial interests. Furthermore, the cost of providing a system for collecting any such payments would be prohibitive.

Freedom of panorama was allowed under the previous Directive that regulates digital copyright since 2001 (InfoSoc Directive).[11] Yet the exception is not mandatory and harmonised among Member States. In some European countries, like France and Greece, that have not implemented the FoP exception at all, the law has been in opposition to daily online practices.

In the initial phases of the policy process on the scope of copyright reform 2015, MEP Julia Reda put a proposal for such a mandatory exception. During the compromise stage, several recommendations were weakened[12] and several amendments were adopted. One particular amendment, seeking to restrict freedom of panorama[13], caused major controversy. After

11 European Parliament and the Council (2001)
12 Reda (2015a)
13 Reda (2015b)

500,000 Europeans demanded its reversal[14], it was rejected by the Plenary. Not many issues make half a million of citizens to voice their opinion - freedom of panorama in 2015 was such issue. Although it might be seen as minor issue, it connects strongly with the everyday experiences of internet users.

Public support shown for freedom of panorama was the reason for a widespread assumption that such an exception will be introduced by the European Commission in the new Copyright Directive on copyright in the Digital Single Market. Especially that public consultations conducted by the Commission showed that public opinion on the issue has only strengthened - the majority of responses were in favour of the harmonised exception, showing how often people want to benefit from this exception.[15] But surprisingly, the European Commission did not put FoP in its draft Copyright Directive. The European Parliament and the Council of the EU acted similarly, and ultimately the issue is not being negotiated in the final phases of the legislative process.

The case of freedom of panorama shows what could happen when omitting a human-centred perspective in legislative processes related to digitalisation. The legal framework does not address the needs of society,

14 Trinkhaus (2015)
15 College of Europe (2017)

because the dominant market orientation on the one hand brackets out issues that do not directly affect market players, and on the other, treats as misuse any freedoms that might endanger the interests of copyright holders.

Two visions of European copyright reform

Let us zoom out, beyond the heated debates on legislative details – even those that can have significant effects upon the digital space in Europe. When looking at the issue from distance, the question boils down to: what kind of digital communication space – or more generally, what kind of European future digital society – was the Parliament voting for?

It is worth remembering that the Copyright Directive is one of the core elements of the Digital Single Market strategy – the overarching digital policy framework in Europe today. And that is too simplistic to think today of copyright as simply law that regulates things like the circulation of cultural works online, or the livelihood of artists. The Copyright Directive uses copyright mechanisms to define the shape of crucial elements of our shared digital communication space. It aims to regulate online platforms, which monopolise online traffic, flow of content, and our attention. It potentially could affect hyperlinks, the very basic

building blocks of the web. It defines legal barriers for data mining needed for machine learning, for the functioning of European heritage institutions, and for the use of digital technologies in schools.

The vote on the Copyright Directive has to be seen, indirectly, also as a vote on a certain vision of copyright regulation, and more broadly, digital policy in Europe. According to one view, copyright law is a form of market regulation that defines the relationship between rightsholders and users of copyrighted works. From this perspective, a European legislator has a choice between supporting either the European creative sector, or online platforms that are the now the most prominent intermediaries. And the latter, for many experts and policymakers, equals US big-technology companies. Within this view, the issue of the economic interests of creators is a crucial one. This view has been unanimously adopted by the representatives, activists and lobbyists of the creative sector. For example, GESAC (European Grouping of Societies of Authors and Composers) argues that copyright reform is an opportunity to address pressing issues for authors in the digital single market and will enable a framework to allow further growth of the European creative and cultural industries to be established. [16] It

16 GESAC, "The Copyright Directive: A quick summary", http://authorsocieties.eu/policy-positions/copyright-directive. Retrieved 20/11/18

is also a view that is very strongly rooted in the Digital Single Market framework, with its focus on market relations and developing the digital economy in Europe.

Seen from this perspective, the issue of user rights - with exceptions in non-market sectors such as education – becomes of secondary, if not tertiary, importance. At its most radical, this approach neglects to see users as stakeholders in the copyright law reform process. After all, in this framing, they are just passive consumers in the market arrangements of the copyright deal. This approach, and its market focus, explains the distrust among rightsholders towards mass protests by users, or the ease with which the position of internet users is equated with that of big-tech companies. As a result, users' main position was not considered in the policy debate related to digital affairs, as the issue was perceived to only be related to monetisation and financial growth – market issues that are not negotiated.

The most visible example of such an omission of the user's perspective in a policy process is the debate on the idea to make it mandatory for internet platforms to monitor a priori user-uploaded content to make sure it does not breach copyright (Article 13 of the Copyright Directive). Many non-governmental organisations and legal experts, alongside individual

users, claimed that content filters threaten the freedom of expression of users and will result in the internet becoming akin to a traditional TV station, without space to freely exchange ideas and views.[17] Axel Voss, the centre-right politician in charge of copyright reform as a rapporteur in the legal committee of the European Parliament (JURI), stated that he received over 60,000 emails from automated bots in the final weeks of the reform. What in reality were concerned voices by citizens was in the public debate referred to as "actions by bots", "fake news" or "activities of paid lobbyists". Such an approach to people's concerns only strengthen the erroneous assumption that digital affairs should first and foremost be of benefit to the economy, innovation and modernisation, and not to the development of society in various aspects that also encompass the non-financial.

An alternative way of thinking would be to define the Copyright Directive as an issue that goes beyond just market regulation. From this perspective, the public interest aspect of copyright, expressed in articles that concern copyright exceptions, is crucial, and should not be reduced to the question whether rightsholders are compensated enough. It is from this perspective that questions could be asked about

17 Liberties EU (2017)

the impact of key aspects of the Copyright Directive (for example the content-filtering proposal from Article 13) on basic fundamental rights, such as freedom of expression. This is what mobilised internet users across Europe. When they criticised the proposal from the JURI committee as being highly biased towards the interests of copyright holders, they were not expressing support for the other side of the market equation, that is, the commercial users of content. Instead, they were judging the proposal against a different set of values.[18]

The aim of European copyright regulation is commonly framed using the concept of a balance of interests. Axel Voss, the current rapporteur on the Copyright Directive in the European Parliament, stated upon taking this role:

> *"Our aim is to strengthen the balanced approach of the new legislation and to make sure that the new copyright rules will be of no hindrance to new technological developments. It is our ambition to achieve a starting point where the rights and expectations of authors and copyright holders on one side, and those of consumers and copyright users on the other, are met".*[19]

18 BBC (2018)
19 EPP (2017)

We believe that the category of balance offers little critical insight into European digital policymaking. Instead one should ask, whose interests and needs are ultimately represented. An analysis of the September 2018 vote in the Parliament (albeit it was not yet a final vote) shows that European legislators have expressed support for the European creative sector by strengthening measures that enforce and strengthen copyright, and limiting those that could decrease control and financial remuneration of a variety of rightsholders.

The policy work on the Copyright Directive has lacked a human-centred approach due to an overly narrow framing of the purpose of copyright regulation. This has led policymakers to avoid burning questions concerning protection of fundamental rights online. This narrow framing, within the confines of traditional copyright policy, might secure traditional goals of copyright stakeholders, but fails to create a good building block for broader European digital policy. Seen from the first viewpoint outlined above, this was a vote against the interests of the tech industry – often seen as not just adversarial to the creative sector, but also as being foreign. But if the second viewpoint is adopted, this was also a vote against the rights and needs of individual internet users. Or, more simply, of European citizens.

Human-centred approach to digital policy

Human-centred design is a framework for designing services and in particular digital, interactive systems that focuses on humans, that is, the users of these services or systems, and their needs. IDEO, the company that has championed this approach, defines it as:

> *"a process that starts with the people you're designing for and ends with new solutions that are tailor-made to suit their needs. Human-centred design is all about building a deep empathy with the people you're designing for; generating tons of ideas; building a bunch of prototypes; sharing what you've made with the people you're designing for; and eventually putting your innovative new solution out in the world".*[20]

A human-centred approach is commonplace today in a broad spectrum of approaches focused on design of innovative products, services and experiences. A related concept, that of "citizen-centred approaches", has been developed by IDEO and consultancies like McKinsey or Accenture to provide a framework for

20 Design Kit, "What is Human-Centered Design?", www.designkit.org/human-centered-design. Retrieved 20/11/18

designing government services.[21]

We argue that this concept, which has become a commonly understood concept and observed principle among designers and creators of digital services, should be applied to policy as well. If we define design as economist Herbert Simon does "the human endeavour of converting actual situations into preferred ones",[22] then policymaking also fits this definition. And in the case of digital policymaking, ultimately it concerns shaping digital systems – including the greatest technological system in scale today, the internet.

Until now, the human-centred policy approach has only been employed to a limited extent. For example in cases where prototypes were designed to demonstrate policy choices, or when the method was applied to the design of policymaking itself – for example to the simplification of complex codifications of policies. A citizen-centred framework has mainly been applied to the provision of governmental services, especially in e-government. While designing e-services (e.g. electronic identity cards introduced in many member states) the research on users' needs and expectations is an essential part of this process.

21 Ideo, "How can government be more citizen-centered?" www.ideo.com/question/how-can-government-be-more-citizen-centered. Retrieved 20/11/18
22 Simon (1996)

Yet an argument can be made, that this principle can scale beyond design of public services to the design of policies themselves: "human-centred design connects people with services, services with organisations, organisations with policy-making and policy-making with policy intent", as Sabine Junginger phrased it.[23]

A similar argument regarding digital technologies was made by the 'Internet Society'.[24] Its authors argue that design values and fundamental principles that guided the development of the internet has given it a user-centred character. By this they mean a technological system that retains user choice and control over the technology, through openness, transparency and decentralisation (described in the text as "edge-based intelligence"). While the Internet Society sees these principles as those guiding technological development, we see regulation as a different set of tools that also shape technologies and we therefore want to apply that argument to the sphere of policy. The basic principle defined in the document, that of securing for users "choice and control over their online activities" should be a basic principle of digital policy-making as well. The authors note that the changing

23 Junginger (2017)
24 Internet Society (2009)

character of the internet, and growing influence of business models built around monopolistic network effects, endangers the human-centred vision for digital technologies. As we are "being moved from users to consumers", we lose the ability to choose and control technology.[25]

The case of the Copyright Directive policy process (outlined above) is an example that lacks a human-centred approach to digital regulation. Copyright has traditionally been seen - especially in the European legal tradition - as a regulation with a singular goal of defending authors' or creators' rights. This traditional framing has largely been confirmed throughout the process, although it has not been finalised at the time of the writing. The final Copyright Directive will most probably be biased towards the interests and needs expressed by rightsholders during the policy debate. For this reason, the new Copyright Directive – while sound in terms of copyright policy – is an unsuitable cornerstone for developing a human-centred digital policy in Europe.

The General Data Protection Regulation (GDPR), which went into force this year, provides a much better case for human-centred digital policy. The regulation has been described as enhancing the control by

25 Internet Society (2009)

end-users over the utilisation of their data online, at the cost of limiting the ability of commercial actors to freely collect, process and benefit from user data.[26] The recently adopted Communication of the European Commission on the "Artificial Intelligence for Europe"[27] offers another positive point of reference. The document argues for a "European approach to artificial intelligence" which is framed in terms of market competition and growth, but is also value-driven; "The EU can lead the way in developing and using AI for good and for all, building on its values and its strengths", states the document and invokes the EU Charter of Fundamental Rights. Furthermore, "ensuring an appropriate ethical and legal framework", is one of the pillars of the strategy, and it includes the drafting of AI ethics guidelines. The Communication calls for an approach to AI that benefits citizens and society as a whole, which adheres to a human-centred vision of digital policymaking.

The question remains whether these policy approaches will become pervasive across a broad range of European digital policymaking or whether they will remain confined to a narrow, even if crucial, range of issues. We believe that a human-centred approach should become a universal principle for European pol-

26 Sobolewski, Maciej, Joanna Mazur, and Michał Paliński (2017)
27 European Commission (2018)

icymaking and translate into a basic question: "Is this good for European citizens?" A test that is based on this question should not be framed as a balancing act – but instead should be rooted in fundamental rights, and other principles defined as basic. To apply such an approach in practice, we have listed three preconditions to be met.

Preconditions for human-centred digital policymaking

In order to secure a human-centred approach to digital policymaking in Europe, three shifts in our current approach need to be made:

1. a shift from a view of digitalisation as simply a modernisation strategy based on the deployment of a growing number of ever-new digital technologies in society, to an approach that sees digitalisation as deeply transformative.
2. a shift from the current market orientation in digital policymaking to a model that is more strongly value-based and places humans, users and citizens at its centre.
3. a stronger future orientation and longer timeframe is needed to fully understand the

consequences of policymaking.

Below, we will go into more detail about these three preconditions.

Shift towards a vision of digitalisation as a value-based transformation

Digitalisation strategies are often based on a simplistic theory of change that assumes an automatic positive impact from implementing digital technologies. Yet this technocratic approach is insufficient. The scope should be much broader and include the question how we with digital policy and by shaping digital technologies want to attempt to resolve the complex challenges that we face.

In the past decade we have observed various digital trends, such as the spread of mobile technologies, online platforms, Internet of Things and the recent developments in machine learning. They all have led to much more than just economic growth. These trends are also causing fundamental changes to how we communicate and build relations, how our institutions function, and how we understand basic values such as trust or individual autonomy.

In order to deal with these fundamental changes and shifts in policymaking, we need to base it on a vision of policy as tools that are value-based. Policy

should aim to actively shape and design technologies in order to protect or strengthen values that are not seen as effects of technological change, but are principles defined through a social contract. This ambition is well expressed in the European Commission's Communication on "Artificial Intelligence in Europe", which calls for a European framework that bases new technologies on values and "creates a competitive edge, by embracing change on the basis of the Union's values" (defined in the Treaty on European Union).

Recently, Paul Nemitz wrote that "We need a new culture of technology and business development for the age of AI which we call 'rule of law, democracy and human rights by design".[28] These core ideas should be baked into policies on AI development, because we are entering "a world in which technologies like AI become all pervasive and are actually incorporating and executing the rules according to which we live in large part". [29]

28 Nemitz (2018)
29 Nemitz (2018)

Shift beyond a market orientation in digital policymaking

Digital policymaking will not embrace a complex vision of digitalisation as a value-based transformation if it retains its focus on the market only. This focus is currently secured by the overarching European digital policy framework, that of the Digital Single Market. Unlike the complex vision defined in the Artificial Intelligence strategy, the Digital Single Market approach defines goals in terms of leading in the digital economy, helping European companies to grow globally or providing access to goods and services in the market.

The Digital Single Market approach furthermore builds on the notion of a passive consumer rather than viewing them as active users of digital technologies. It is worth noting that a similar reduction of the agency of users can be observed in copyright regulation. Copyright scholars have directed much criticism at the term consumer, which according to many of them has misleading connotations about the ways that humans receive and interact with broadly understood culture or information. The consensus was achieved that "users", as a term that denotes both more active involvement in the processes of culture and "a resid-

ual aura of addiction", is more appropriate.[30] As we have argued before, a strong vision of humans as active users of technology is fundamental for a human-centric approach to digital policy. This vision cannot be achieved within policies that are solely market-oriented.

There are many approaches being developed today that attempt to move beyond this market orientation in policymaking. Mariana Mazzucato argues for an approach, in which public organisations, driven by public process, actively co-create and fix markets "to be smarter, more inclusive and sustainable".[31] Kate Raworth's model of "Doughnut economics" sees the market as just a subsystem embedded within human society and Earth's natural system.[32] Even the economy is by Raworth seen as a combination of the market, the state, households and the commons.

Shift towards a stronger future orientation

Human-centred policies require an approach that considers a longer time perspective than most policy areas. Such a perspective is much longer than the typical electoral cycle on national and European

30 Cohen, Julie E (2005)
31 Mazzucato (2018)
32 Raworth (2017)

level. Unfortunately, such an approach has so far only been possible on the fringes of the mainstream policy debates. A future-oriented outlook is hindered on one side by politicians' perspective that is timebound to the electoral cycle, and on the other, to the focus of lobbyists and stakeholders on immediate, and often partisan, gains.

A longer time perspective regarding digital policymaking is especially important due to a disconnect between the quick rate of technological change and slow pace of policymaking. If major policy shifts can be achieved only in a decade or longer, then these policies need to be shaped with a longer time perspective in mind.

"A Future Not Made in the EU" is an example of a project that uses tools of speculative design that introduces such a long-term perspective into the policy debate on European copyright reform. [33] The project has been commissioned by Centrum Cyfrowe Foundation (a think-and-do-tank based in Warsaw, and the authors of this article lead its policy program) with the aim to find novel ways of speaking about ongoing copyright reform.

The project used the technique of speculative design which raises various "what if?" questions about

33 https://futurenotmade.eu/ Retrieved 20/11/18

the future. Speculative design, much like science fiction, often illustrates dystopian or utopian worlds with only a slight grasp on reality or hopefulness. Yet it has the advantage of opening up discussions about the future in policy environments, where – despite declarations of a long-term view – discussions often shrink to immediate effects, and the losses and gains of the different sides. Speculative design also often tends to be provocative, which means it has a strong political flare.

In this project, artists and designers from PanGenerator and IRL designed three fictional startups and their core products: DigiAtoms, DigiTutor and DigiDermis. Each of these speculative designs is a prototype of a digital gadget that could be put on the market by a European startup. Each of them also hides a story related to copyright debates ongoing in the European Union. None of these startups will ever be successful if current proposals on content filtering, geoblocking and limiting text and data mining come into force. By using speculative design methods, one can look beyond the short-term policy horizon and ask questions about the long-term effects of a failed copyright law reform (in this case).

The question is if speculative design can be a method implemented widely in policy processes,

especially in these related to digital issues. James King, the founder of Science Practice says that "the designer's political preferences are what make speculative design interesting and being provocative is a good thing as it will foster debate more readily".[34] [35] What in our opinion makes speculative design a unique tool is this time-limitless framework, which detaches policymakers from the current situation and connects them instead with a range of possible futures. Such an approach allows more courageous thinking about public policy, which is much needed in area of such great uncertainty as digital transformation. We cannot agree more with the statement, that "by speculating more, at all levels of society, and exploring alternative scenarios, reality will become more malleable and, although the future cannot be predicted, we can help set in place today factors that will increase the probability of more desirable futures happening".[36]

34 http://www.science-practice.com/ Retrieved 20/11/18
35 Isa Kolehmainen (2016)
36 Dunne & Raby (2013)

Human-centred policymaking as leadership

Polish politician, activist and thinker Jacek Kuro started his last book, "Rzeczpospolita dla moich wnuków"[37], with a chapter titled "The Technological turn and its cultural consequences". Writing in 2004, Kuro states:

> *"all inhabitants of our globe and our country, old and young alike, found themselves in an alien reality. We became powerless.* [...] *each one of us feels lost. Appliances made in the previous era still function in most of our homes. Yet ways of thinking and living, tastes, choices, aspirations of our children and grandchildren are shaped by new media."*[38]

The industrial era is gone, together with its culture. And we still lack the culture of the information era, we face a state of wilderness.

Fifteen years later, and after multiple new milestones of technological progress, we face ourselves in the same situation. Kuroń's "new media" are in turn mobile phones, social networks, or deep learning algo-

37 The title can be translated to as "Republic for my Grandchildren" or as "Commons for my Grandchildren"
38 Kuro (2004)

rithms. Each time, our previous ways of being become outdated, and we face a state of wilderness.

Digital policymaking should be a tool for regaining lost sense of meaning and for defining anew our institutions and ways in which we want to harness technologies, so that humans benefit from them. The challenge ahead for European policymaking can be defined as an adaptive challenge.[39] It is a type of challenge, for which the solution is unknown, and even the definition is lacking. A challenge, for which straightforward application of technocratic expertise or force will not be enough. Adaptive challenges require leadership that changes people's values and practices, so that they all start doing adaptive work - since they all "own part of the problem". A human-centred approach gives us a chance for policymaking to constitute the work of adaptive leadership: of orchestrating a broad movement of individuals finding courage to change things and shape the technologies that surround them.

39 Heifetz, Ronald Abadian, Alexander Grashow, and Martin Linsky (2009)

Education for the digital age – efficiency vs democracy; China vs the EU

Robin Vetter

In the spring of 2018 a delegation of around 80 EdTech entrepreneurs and educators left Sweden for a field trip to Hong Kong. The focus was on how technology in general and specifically Artificial Intelligence (AI) was being used in education. Their studies began at Hong Kong University, with a glimpse into the education programme for teachers-to-be, where they were met by something only half expected: the students were being taught something called "AI literacy". As the trip went on, they crossed over into mainland China and Shenzhen, where even more of their preconceived notions would be challenged.

The classic notion of differences between the

East and the West is that the West stands for liberalism, capitalism and market-driven innovation. The East on the other hand represents authoritarian rule, communism and discipline, with little room for innovation. As a result of this, individual expression and creativity is often implicitly assigned to western countries and economies.

When the delegation entered a middle school in Shenzhen, they were expecting to have that division confirmed, with disciplined students doing what they were being told. Instead, they found themselves facing a teaching and design method developed at the Massachusetts Institute of Technology (MIT), aimed at motivating and facilitating conversation, creativity and innovation in the classroom. AI-based tools for detecting illiteracy, dyslexia and various other difficulties in students were already in place.

This can be seen as dependent on one specific aspect of the Chinese state: the ability to implement changes nationwide and immediately, China has been able to reform its educational system to account for digitalisation of society. Students coming out of the system are already equipped with the necessary tools to develop and implement new technologies in collaboration with their peers.

In Sweden, we have only just recently delegated

the assignment to produce a plan for digitising our national school system to 'The Swedish Association of Local Authorities and Regions', SALAR. This plan will be published in March 2019, and is expected to outline a platform or a tool for aggregating and synchronising efforts from various parts of the country to better understand what works and what needs to be worked on. Until now, the use of AI-based tools for education has not been strictly prohibited in Sweden, but it has not been encouraged either. Teachers are operating in a grey area, where they are free to try out new things as long as they stay within the boundaries of the existing rules.

Schools in the rest of Europe are facing similar problems: teaching has been considered a noble and dignified occupation for a long time. Traditional discipline and front-facing rows of desks are the general norm, and digital tools are being implemented and encouraged only if they fit the old models.

As proponents of liberal democracy, we take pride in allowing our children and students to make decisions for themselves and we try to give them the tools to shape themselves into grown human beings. By doing this we are protecting our liberal values and giving our children the tools to upend anyone who claims power without the right to it. Using these mod-

els help us protect the privacy and integrity of our students and children, since we do not focus on shaping the education around them, and therefore we do not require or gather that much information about them.

However, there are already a few questions appearing on our horizon: How can we equip our students with tools for lifelong learning, digital skills that fit the gig economy, and the understanding of a digitised society required to interpret new flows of information? What is our role and aim in the emerging digital society? Are we competing with China, and if so, should we continue doing so? To manage our future in a responsible way, we need to address this development from multiple perspectives, but we could start by answering the following questions.

How do we equip our citizens for the digital age?

For the last few years, the global economy has been enjoying a period of growth. Despite this, the general perception of where the world is going is not bright, and we have seen a rise in conservative and illiberal forces in societies both in Europe and the rest of the world usually connected to economic decline and crisis.[1]

1 Pinker (2018)

When up for discussion, this development is often assigned to the arrival of the internet in general and social media in particular.[2] The debate has in many cases been focusing on how digital communication tools, primarily social media, are promoting a type of single-sided logic, traditionally the trademark of fascist movements.

But at the same time, the democratic potentials of the internet and the digital society are repeated over and over again.[3] Given this, educating our citizens in how to handle these amounts of information while still reaping the benefits should be the key.

This dilemma was also discussed at the arrival of the printing press. When Gutenberg's printing press became available to the masses, the printing of multiple copies of a book on a larger scale became practically possible for the first time in history. Initially, it was believed that by democratising the means of mass communication would make the overall quality of printed text decrease, since the parts of the population that lacked academic education would have access to a medium that had previously been reserved for scholars and clerics. In hindsight, some argue that the multitude of ideas that could suddenly become

2 Hendrickson & Galston (2017)
3 Harvard, I&D, 11-12-2018

widespread is the reason for revolutions and the spread of democracy in the West.

However, one effect of the printing press is certain: the importance of literacy increased drastically. Having the ability to consume the information being spread, whether it was reformist manifests or religious scriptures, was not understated.

At this point in time, investing in a printing press and the means to distribute its products was connected with financial risks. Today, investing in a computer is within reach for most Europeans, but we are still facing the problem of interpreting and producing valid information on the internet.

One practical example of what needs to be addressed is online echo chambers. If you, like many others, have been using Facebook for a few years, you have probably built a pleasant news feed for yourself. You find yourself agreeing with most of the things that appear in front of you. When you get upset about a news item or a link, it is mostly being shared by someone in your network along with comments of dismay. This is mostly because of how social-media algorithms work: they recommend more of what you like, so that you will be happy – which research has shown you will be.[4]

4 Bakshy (2015)

Breaking out of this bubble can be very unpleasant. By just slightly changing your pattern of liking and interacting, and maybe joining a few Facebook groups that are not in line with your preferences, you could make your news feed change a lot. And while this is a distressing practice, it is also quite enlightening to become aware that your feed of information differs from the one viewed by the person sitting next to you.

From a Chinese perspective, there may be an opposite ideal. Given authoritarian rule, the access to data and digital tools readily implemented in schools, the ruling regime will benefit from a one-sided flow of information. That same one-sided flow of information may also benefit those who are affected by it in a way that may seem uncomfortable to us: If you buy in to the idea that there is a correct and an incorrect direction for you to choose in relation to your nation, you will probably choose the right one. And if your nation is working towards a future that you agree with, you will be a part of a powerful movement.

The problems with this usage of digital tools arise if we move the same situation into a European context: the seed for the EU was planted in the aftermath of World War II, and we have since then been working to increase understanding and cooperation between the member states, and to counteract extremism and fas-

cism in our political ranks. The tools we have applied are common currencies, languages and other policies aimed at counteracting nationalism.

Here, we strive for freedom through diversity. We traditionally encourage a variety of ideas and try to allow any ideologies to challenge our existing ones, confident that democracy and freedom will prevail. The internet, digital tools and social media have a potential to strengthen these ambitions, but they also have the potential to undermine them.

Our current models for educating children are cantered around a teacher, delivering answers and testing how well those answers stick to memory. This type of education was very useful and efficient when it was invented, about 100 years ago.

The most up-to-date information back then would be found in the books of a library or the mind of a scholar. There were no online dictionaries and search engines. The information you possessed was the information that you could memorise or keep in a book in your vicinity.

Today, with endless amounts of knowledge at our fingertips, our most important skill is to find the right information and to separate good from bad. Changing our curricula to better teach those skills is crucial to our future generations.

How do we make the EdTech revolution sustainable?

The General Data Protection Regulation (GDPR) was adopted on 14th of April 2016, and became enforceable on 25th of May 2018. When this happened, a number of voices were concerned about the troubles European companies would go through in cleaning up their data reserves, and that it might constitute a hamper for when competing with international corporations, not required to adhere to the same rules. This has been especially emphasised regarding the development of AI.[5] On the other hand, the GDPR could potentially serve as a template for how data should be harvested, stored and treated if it is to be traded with any country within the EU. This, in turn, could prove to be a much-needed spur in AI development within the EU.[6]

This outlines both our advantage and our main obstacle in the race towards the digital society: we are simultaneously the prime candidate for ethical development of digital tools and the candidate with the least potential for rapid growth. Giving up on our ideals for privacy and integrity could, if it had been done earlier, given us a fair chance to compete with China in

5 Wallace (2018)
6 Nguyen (2018)

building digital and data-driven solutions to societal problems, since they rely on large amounts of data. However, those same ideals could afford us a place in the future society as we may have a better chance of developing internationally viable guidelines for ethical use and development of AI and data usage.

This is the idea of digital sustainability. In environmental policy, the goal is to create a society that does not overstretch the resources of the planet. In societal sustainability, the focus is injustice and inequality in many cases. When we are talking about digital sustainability, we need to look at everything at the same time: technology can be an environmental culprit or a saviour, a social divider or unifier or the thing that makes your brain overloaded and stressed, or a tool for efficiency, simplification and communication.

This endeavour stretches from our first days in school to the last days of our lives. Data is becoming more and more persistent, and over a lifetime a single individual creates vast amounts of data. This data can be used in a variety of ways: targeted ads, building echo chambers and matching jobs with applicants are some examples, profiling political dissidents and mapping social networks are other examples.

Say for example that users of Facebook throughout Europe share as much data as possible for Facebook to

harvest and use the way Facebook sees fit. This gives Facebook the ability to create revenue by mapping the users' behaviours, opinions and connections.

In the best of scenarios, the economy that Facebook drives is strengthened, since jobs are created, value is created and other markets reap benefits. If the data is only used for marketing, the loss for the user is the lack of a broad spectrum of ads, which could create an imbalance in certain markets. The problems are manageable, and policy changes could probably deal with most of the problems that arise.

Imagine the same scenario, but the ads that are being targeted at specific individuals are political and may not even seem like ads. The same thing happens: the user is deprived of a diverse set of information, and he or she will instead believe that the information reaching him or her is legitimate. The problems that arise could potentially affect democratic elections, and the problems that may arise are not easy to mend using policy changes – the power to change policy may even be handed over to the same people driving the political advertisements.

Something that is quite easy to forget is the similarities to pre-internet problems. Lobbying is not something new. A good marketing agent will still work to try and shape the reality around the person they are

trying to affect. Ironically, the vote on the new digital rights directive in September of 2018 was described as being surrounded by some of the heaviest lobbying campaigns ever to reach Swedish members of the European Parliament.[7]

The same holds true for political lobbying. Politicians constantly work to make their take on a current issue seem like the most reasonable and true one, and they have been doing so since long before the arrival of social media and internet.

The difference lies right there: we are already used to handling lobbying in the physical space. We look away from advertisements we are not interested in, and we kindly decline the lecture from the political opponent shouting in the metro if we are not interested in a debate.

But in the digital space we are not yet used to the rules, structures and interactions that may appear. In fact, some research shows that our brains are slowly starting to restructure themselves to better store information about how to find a specific piece of information instead of storing and accessing that same information, but it is not happening as quickly as the digital development of society.[8]

7 Andersson (2018)
8 Sparrow (2011)

So while our schools are still geared towards handing out specific bits of information, to be stored and unchanged until recalled, the world is rapidly moving on. We are already at a point where memorising large banks of information is not as important as it was just 20 years ago.

It seems counter-intuitive then, to think of China as leading the progression. But as Chinese schools are moving further away from traditional models of education, the gap in development is slowly growing larger. And we are not the ones in the lead.

Finding our unique selling point

The delegation that went to Hong Kong also brought something else with them back to Sweden. A few pictures showing a collage of pictures featuring a specific runner in a marathon. The collage was made up not only of pictures from official photographers, but from social media, bystanders and surveillance cameras. And it was all automated.

In Europe, we tend to think of surveillance as a necessary evil and it is governed by the same regulations that apply to any other collection of personal data.

This makes it near impossible to create the same kind of collages, or any other form of automatically aggregated datasets, without first carefully collecting consent from everybody involved.

This sets us apart from China in two ways:

1. We will not be able to compete with the amount of data we have at our disposal when creating digital services.
2. We have a head start in the race for ethical frameworks in the digital society.

When Apple decided to launch the iPad in 2011, they were viewed by many as inventing a new market segment. The tablet in itself was not new. Various versions of a tablet had been brought to market before the iPad, but they all had very specific applications, mostly for field work where a mouse and a keyboard would be too cumbersome to set up. But aiming the tablet at somebody else and having the technology to make the product attractive enough gave Apple the opportunity to come out ahead of the competition in the tablet market, since they had changed the game. The same goes for Facebook. Pictures, messages and public networks already existed on the internet when Facebook arrived, but they had not been connected

for the general and human purpose of bragging and gossiping.

The argument could be made that Europe has a chance to do the same thing with regards to digital ethics, especially in the case of education. To achieve this, we need to agree that our education system needs to differ from China's. This is not only in the tools and the approach that we use, but also in the core content of education.

Our current education system was built in an era when education was mainly a way of help raising all individuals to be capable and informed citizens. Creating new educational models with digital tools at the centre may seem like something new and bold, but in many ways, it is the same approach but adjusted to the digital age.

The success of a society is very much reflected in an education system's ability to effectively educate citizens to meet the societal needs. If AI and digital tools are being applied to profile students and make the school system more effective without changing what is taught, the benefits of digitalisation are not fully utilised. it is not enough to use new digital tools just to teach us how to use old tools.

On top of that, if we are too enticed about digitalisation, we could start believing that digital solu-

tions are the answer to everything and fail to see that humans are part of the problem. Our problems with information and democratic elections are of course exaggerated by social media and their echo chambers, but it is not Facebook that fills out the ballot, it is not Instagram that upload the images containing unhealthy body images and propagating mental health issues, and it is not Twitter that writes Donald Trump's tweets. In all these cases, digital technology is merely an extension of human behaviour rather than the cause of it.

So, while China is focusing its efforts on making a school system with the potential to accelerate the education of good citizens, we should think about what we want to achieve with our education system. The labour market of the future demands competence not only in using the digital tools of today, but also for adapting to the continued technological change of the future. At the same time, we need our citizens to be capable of critical thinking. We have no complete solution for fake news and disinformation in sight, so why not find solutions that work for individuals instead?

Facing the future

Digital tools will become part of our infrastructure and our lives to the extent that we will no longer talk about them. 20 years ago, we were used to internet as a way of sending letters more efficiently, going to the library while staying in our sofa and to anonymously meet strangers. Today, we are not even always aware of when we are online and when we are not. Since the rollout of 3G (the third generation of cellular networks, making internet connectivity portable) across Europe our phone calls have essentially been digital phone calls (VoIP) instead of traditional phone calls and with the arrival of 5G (fifth generation of cellular networks, making connectivity of gadgets and things possibly) it is only a matter of time before our shoes are constantly online.

The most important part of making education digital in a way that is relevant for our time is to make the term "digital education" obsolete. Education needs to be digital at heart. For example, we cannot avoid the usage of Facebook as a source of information, so instead we need to teach how to make relevant use of these new sources and flows of information. We will also need to make school assignments and tests account for the fact that information and facts are continuously discussed, challenged and revised

online. A student might be correct even though they seem not to be.

Contrary to China, Europe should focus on trying to make our education system keep up with the rapid change of the students in it and the society outside of it. Not focus on finding ways of more control and steering of the students and the society. We are, after all, liberal at heart.

From Users to Smart Citizens: A Revolution in Progress. Exploring the Smart City trend in Romania

Ciprian Negoiță

Introduction

The rhythm of Romanian cities is reshaping itself. Major urban areas are accepting and implementing new smart and sustainable solutions in order to maintain, improve and enhance almost all aspects of urban life. Important Romanian municipalities, like Alba-Iulia, Cluj, Arad, Sibiu, Oradea, and Bucharest, are increasingly rethinking their approaches and are

taking steps towards making their public services more efficient and environmentally friendly with the help of digital technology. Many of these ideas and strategies arise from private initiatives and are being enforced by urban policymakers through specific public policies. This points to the smart city trend in Romania already being accepted and generating social transformation. Therefore, through an analysis of ongoing governmental strategies and official documents regarding smart city policies and a review of the most relevant - both Romanian and international - scientific literature on the engagement of cities with technology, this chapter aims to identify and map the smart city trend in Europe in general, and in Romania in particular. Furthermore, by providing specific examples of different smart-city initiatives around major Romanian municipalities, this chapter will evaluate the state of the smart-city trend in Romania.

What is a Smart City?

If the 19th and 20th centuries were characterized by sustained industrial growth, the 21st century will be more focused on communication technologies and digitalisation.[1] The 19th- and 20th-century industria-

1 A. Cocchia (2014), p. 13.

lisation brought with it technological advancement that permanently changed the cityscape. Motor vehicles, underground metros, sewage systems, telephone lines, street lights and skyscrapers were all truly groundbreaking technological advances. Thus, complex solutions for difficult problems are nothing new for the digital era. With this in mind, why is it only recently that the term 'Smart Cities' came about and surged in use?

To understand why, it helps to compare traditional phones and smartphones. There is no doubt that the land-line system and phones of the pre-digital era were highly complex and would by any standard qualify as 'smart'. However, what ultimately makes smartphones 'smart', is their multi-functionality. While traditional phones only allowed for making phone calls, the smartphone has opened up unimaginable possibilities and radically redefined what we mean by the word phone.

The same would apply to the concept of Smart Cities. By exploiting new digital technology, like big data, artificial intelligence and internet of things, we can do to cities what was done to the phone. Thus, a smart city is neither a brand, a marketing tool nor a fashionable new concept for international scholarly literature. It is rather the prelude of a new digital revolution

that will occur in the coming years. The smart-city trend has become increasingly appealing due to new smart technologies dedicated to improving public services, increasing the level of comfort of citizens and improving resource efficiency. Intelligent and wired solutions committed to resolving the challenges faced by contemporary cities (traffic, overcrowding, pollution, digital education, renewable energy) are on the political and scientific agenda of academic bodies as well as the attention of the European Commission.

An abundance of definitions is attached to the smart-city label. It seems like the definition of what a smart city is, differs depending on the agenda of the one using the term. However, the European Commission presents the smart city as a community in which traditional networks and services become more efficient by using digital and telecommunication technologies for the benefit of citizens and businesses. The smart city integrates information and communications technologies for the efficient use of resources and infrastructure to better meet the needs of its citizens.[2]

With this definition in mind, we can try to quantify public smart-city initiatives. A report from the European parliament identifies six different domains for

2 Romanian Ministry of Communications (2016)

smart-city initiatives. First, 'Smart Governance' is online tax computing and tax payments, online interaction with the city hall, wired authorisations and official documents. Second, 'Smart Living' is intelligent solutions to increase the comfort of the citizens, for example WiFi in public transportation and smart video surveillance. Third is 'Smart Economy', solutions to simplify the life of citizens such as smart metering of utilities, LED public lighting, and outdoor digital display panels. Fourth is 'Smart Mobility', including sustainable solutions for an efficient and rapid transportation, such as connectivity between electric cars and bicycles using mobile applications, intelligent parking lots and online traffic monitoring. Fifth, 'Smart Environment', includes technological solutions that better could protect the environment as renewable energy, smart waste collection. The sixth and last one 'Smart People' (or often denoted as 'Smart Citizens'), is the degree that innovative and effective educational solutions such as information systems are implemented.[3] Ismana et al define and argue that smart (digital) citizens "have some characteristics, such as understanding human, cultural, and societal issues related to technology and practicing legal and ethical behavior; advocating and practicing

3 European Parliament (2014)

safe, legal, and responsible use of information and technology; exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity".[4] From this definition, it is clear that a smart citizen is inseparable from the digital society. For James Ash, the emergence of smart citizens is a vital part of the digital turn of societies, a way in which the individuals combine the services, the applications and the algorithmic management of governance with the already existing digital infrastructure.[5] The mentioned report from the European Parliament argues that a city has to implement at least one out of these six dimensions in order to be considered a smart city.[6]

There is also a critical discourse toward the concept of smart cities in the scientific literature. Smart cities and the development of digitalisation are considered corporate interests advanced by Western countries in order to increase government expenditure and investments on digital services.[7] Because of network effects, it could enable companies to also gain a natural monopoly. Other scholarly voices describe smart cities as non-ideological fantasies which enclose only private interests.[8]

4 Ismana and Gungoren (2014) p. 73.
5 Ash , Kitchin and Leszczynski (2015)
6 European Parliament (2014)
7 Datta (2017), p. 406
8 Datta (2015)

However, summarising the most relevant studies on the relation between digitalisation and the smart-city trend, the majority of voices accept the realistic approach that information and communications technology (ICT) will have positive effects by boosting economic growth and the prosperity of cities, making them more citizen-friendly, secure, efficient, easy to govern and transparent.

Cities in the 21st century

Cities are constantly changing and modernising. This rapid development is today pushed forward by modern technology and digitalisation. It can be seen with the naked eye how things have already changed. Looking at history, one can note that while empires and nation states previously shaped the social and political architecture of societies, it will in this century instead be the cities that "becomes the nexus of economic and political power".[9] At the European level, cities play a vital role in regional development, being considered key elements in improving the EU's global competitiveness.[10] The importance of digitalisation for the social life of European citizens has been highlighted

9 Parag Khanna (2011)
10 Onescu (2016)

by the European Union. The EU's 2020 Digital Agenda includes commitments to promote smart cities and investments in IC&T infrastructure.[11] [12]

Data shows that 70% of Europeans live in urban areas and consume 70% of their energy.[13] However, concentration of population and activities are not sufficient conditions for significant economic growth. In the last two decades, the economic structure of European cities has undergone important changes. Benefits and challenges to cities include industrial restructuring, economic crisis, globalisation, climate and demographic changes. There is a considerable difference between capitals and other cities in coping with these challenges. While the second cities throughout Europe, with their economic core often focused on industry, prospered during the industrial revolution and well into the late 20th century, the tide has now turned back in favor of the capitals with a more knowledge-intensive core .

11 European Commission (2014)
12 European Commission, August 2018
13 European Commission (2012)

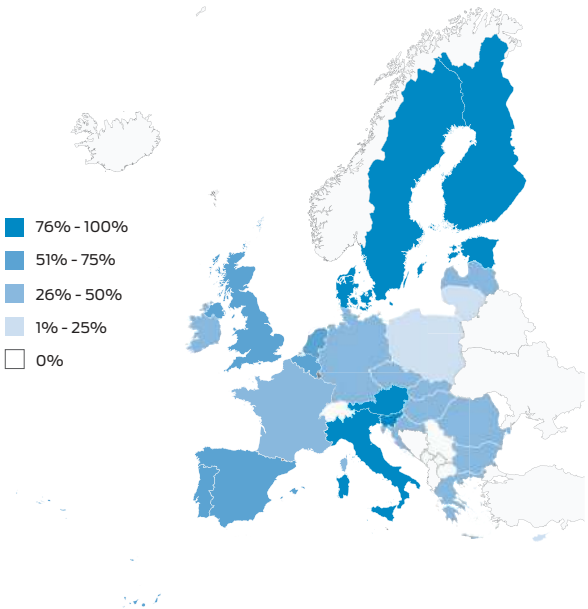
Romania compared to Central and Eastern Europe (CEE) and Western Europe

Transforming large and medium-sized urban municipalities into smart and sustainable cities is gaining popularity, especially in major cities in Western Europe "where, due to accumulating problems related also to high population density and air pollution, implementing highly effective solutions in different areas of the city, for instance, in the field of waste or transport management, has become a necessity".[14] In contrast, in Central and Eastern European Countries (CEE), smart solutions seem so far only rarely to have been implemented, despite the fact that the quality of life in this region is affected by similar problems.

According to a study coordinated by the European Parliament, there are smart-city initiatives in all 28 EU member countries, but there is a visible gap regarding their distribution. Estonia, Denmark, Spain, Sweden, France, United Kingdom, Italy, Germany, Austria have the highest percentage of smart-city strategies focused on environmental policies (improving the quality of air and water and reducing noise and pollution) transport and mobility.[15]

14 M. Kola-Bezka and M. Czupich (2016), p. 77.
15 European Parliament (2014) p. 9.

Figure 1. The percentage of smart cities to cities by country in Europe (2014)[16]



According to a ranking of the top 10 European smart cities the pecking order is as follows; Copenhagen (Denmark), Amsterdam (Netherlands), Vienna (Austria), Barcelona (Spain), Paris (France), Stockholm (Sweden), London (England), Hamburg (Germany), Berlin (Germany), and Helsinki (Finland).[17] This further underlines the point that it is first and foremost Western Europe in which most smart cities

16 Figure 1 is from the European Parliament (2014), p. 40
17 Cohen, Boyd, January 2014

are found. But also, to a certain extent, in countries in Central and Eastern Europe (CEE) several smart-city projects and initiatives are being launched. Estonia is spearheading many digital smart digital solutions not only in Europe but also globally.

A report by the European Commission argues that at local level, there are many key difficulties slowing the capacity to implement smart initiatives: irrelevant and inappropriate local competences, lack of administrative capacity, high levels of bureaucracy and administrative burdens, irrelevant procurement rules, lack of stakeholder involvement, lack of financial capital and no public-private partnerships.[18] The EU's Europe 2020 strategy has taken important steps in the necessary political and administrative conditions in bringing together city representatives, researchers and citizens. [19] [20] This partnership will, by taking examples from well-developed European cities, focus on smart initiatives in the water sector, smart solutions for climate change and the renewable-energy sectors, digital education, intelligent transport systems and a productive and resource-efficient agricultural sector.[21]

Any urban European community has to promote

18 European Commission (2017), "The Making of a Smart City: Policy Recommendations for Decision Makers at Local Regional, National and EU levels", p. 7.
19 F. Russo and P. Panuccio (2014) p. 3
20 European Commission, August 2018
21 European Commission (2011)

a long-term political and economic strategy for its future development. Our European experience has proved that operational projects and programmes work best when there is strategic coordination between municipalities and their citizens. Strategic planning is a seminal management tool that allows a local community to focus on the effective alignment of resources with the city's mission and vision. The CEE countries still perceive the process of setting long-term goals and strategies in the targeted community areas as a great challenge. In order to settle a certain balance between West and East regarding the funding of smart-city initiatives, the EU has developed different strategies that enable cities to cope efficiently with the challenges. Many municipalities from CEE countries failed to acknowledge the importance of a strategic smart planning to their long-term development. Depending on its social and political impact, a smart strategy could include important business investments and large transport infrastructure, by enhancing government services for the private sector and more business opportunities.[22] In other words, the economic resources and investments are the encouragement that should guide political decision-making in developing such a strategy.

22 Angelidou (2016), p. 27.

The cities in CEE countries have increasingly made some progress in closing the "smart" and digital gap between them and their Western counterparts. Still, for many other cities in CEE, there is a long road ahead, and further closing the gap will depend both on the EU funding programmes and the involvement of the national and regional authorities in designing a coherent strategy. Furthermore, the success of smart cities will depend on the active role of citizens and their commitment to new technologies - "No smart cities without smart citizens".[23] A municipality is not "smart" unless its citizens are well equipped with the necessary knowledge and resources to address the local challenges.

Smart Cities in Romania

In Romania, the smart-city trend has reached and increasingly been adopted by important local municipalities. At national level, it had a modest beginning and development. However, since around 2014, "there has been a lot of progress at the local level, and the smart-city market has surpassed 216 smart-city projects, with an estimated value of over €30 million in December 2017".[24]

23 Ferrer (2017), p. 74.
24 Vega Consulting (2018)

The first smart city initiative was acknowledged 2010 in Târgu Mureș, a smart project supported and sponsored by IBM and Visa. With the project name "Digital Mures", it was the first of its kind in Romania. It allowed, with expertise and financing from IBM and Visa, for all public and property taxes to be paid online. Citizens from Mures were enabled to pay their local taxes, property taxes and bills online from any part of the country or from abroad. Within this pilot project, visualisations of the landscape architecture and urban plans also were released, which enabled citizens to see any part of the city: the buildings, its surface area, the number of neighbours and all of the networks and transport connections.[25] The public attitudes towards this project were positive and quickly embraced by its citizens, many of which had only basic digital literacy. From 2010 to 2015, when Siemens implemented a digital project in Alba Iulia[26] and CISCO in District 4 in Bucharest, no public smart city proposals were initiated whatsoever. It thus seems private actors ignited the smart-city trend and public initiatives then followed. This short journey into the first smart-city projects confirms the fact that Romania is trailing in the smart-city trend. Nonetheless, in the past three years it has compensated for the lost time. Romania

25 Digital Mures Strategy
26 Smart Cities Research - Alba Iulia

has, according to the definition outlined on page 2 and 3 above, 24 smart cities. The cities with most projects are: Alba Iulia (72 projects), Oradea (20 projects), Cluj-Napoca (18 projects), Bucharest (13 projects), Piatra Neamț (12 projects), Brașov (11 projects), Arad (11 projects), Sibiu (11 projects), Constanța (10 projects), Iași (8 projects).[27]

Alba-Iulia, a city located in Transylvania with a population of more than 60,000, has implemented more than 70 initiatives, with nearly 26 local and international partners. Alba-Iulia was highlighted by the World Bank as one of the most-performing communities in Romania when it comes to attracting EU funds for community development.[28] Alba-Iulia's projects include smart lighting, air quality monitoring, smart parking, traffic monitoring and monitoring of water consumption. Furthermore, Alba-Iulia aims at becoming the most digitalised, smart city in Romania, with the occasion of celebrating its Centenary Year.[29]

Oradea, with the second number of smart initiatives is the capital of Bihor in western Romania, with a population of more than 200,000 has implemented several projects which address important public issues: more than 60 WiFi hotspots, online payment

27 Vega Consulting (2018)
28 World Bank, September 2015
29 Alba Iulia Smart City

of public taxes, electronic payment for public transportation with GPS and smart parking. This rapid digitalisation is a result of the public-private partnerships (PPPs) and EU funds.[30]

Another city that has made significant steps towards becoming a smart city is Cluj-Napoca, the second-most populated city in Romania, with more than 300,000 citizens. Perhaps the most digitalised featured was the fact that the local municipality developed the first virtual civil servant, available to citizens 24 hours a day. Other smart projects include smart parking, the city-citizen relationship, WiFi in public places, smart traffic and electronic payment.[31]

Bucharest, Romania's capital and most economically developed city in Romania, with a population of more than 2 million advanced four important smart-city initiatives: smart energy, bike-sharing, electric buses, IT&C Self-Service Terminals, with more projects ongoing. A smart-city strategy for Bucharest is underway. Local municipalities assisted by Deloitte experts on IT&C will draft a strategic document with the purpose of attracting investment into Bucharest's smart city. This will mean 8-10 years of implementation, with various degrees of investments in smart

30 Forum BPM Eastern Europe
31 Romanian Association for Smart (2017)

transportation, mobility, energy and environment.

By splitting the list of smart initiatives into the subdomains outlined on page 74 above, we can list which have been most implemented in Romania. The most is Smart Governance, covered by 49 projects, followed closely by Smart Living with 48 projects. The third place is shared by Smart Economy and Smart Mobility, each with 46 projects planned, under implementation or already delivered. Next is Smart Environment, with 19 projects, and Smart People, with 13 initiatives.[32] The proportions of the implantation of the six dimensions are fairly similar across the CEE countries.

Conclusions and policy suggestions

This overview of the digital projects developed in Romania provides a clear outline of the smart city trend. In the last three years, we have witnessed a rapid evolution, one which seems to be accepted by the local municipalities and private stakeholders as a natural and irreversible process. The growing number of established associations promoting the smart city transformation and the increase number of diverse

32 Vega Consulting (2018), p. 7

and sustainable digital projects confirm that we are witnessing a shift towards a digital and smart revolution in Romania.

Inevitably, reshaping cities with digital technologies in order to meet the citizens' needs also implies creating smart community that uses the digital services, has a solid IT&C infrastructure, has legal public-private partnerships that allow cities to achieve their administrative and economic objectives and finally practice open governance and transparency.

The EU will a have major role in creating the administrative and political prerequisites for the new smart development which is in progress. The digital and smart city revolution is real and here to stay - but is not a revolution like the previous ones that brought an end to monarchies (French Revolution of 1789), which brutally seized state powers (Russian Revolution of 1917) or changed political regimes (Romanian Revolution of 1989). It is silent but visible and profound because, as we have seen, it will completely transformation our cities.

When Robots Take Our Jobs – Who Will We Vote For? Arguments for Liberals

Csaba Tóth

Introduction

Much research has been conducted on the likely economic and even social impact of the technological change arising from the fourth industrial revolution. Yet there is surprisingly little discussion about the likely political effect of these processes. In a way, this is not surprising. While it is relatively easy to construct models on the economic impact of automation – predicting, for instance, the changes in employment that technological advances will result in – political predictions are more difficult. The main reason for this is that political actors have a great degree of autonomy in forming political responses to external

change. While we know certain jobs will disappear, we can only guess how political actors – following their own vote-maximizing logic – will respond. Additionally, politicians of the future may not play by the same rules our current institutions are built on, which makes predictions even more difficult.

Technological change presents an especially tricky problem for Liberals. In general, Liberals support new technologies, are proud to be on the side of innovators and welcome social changes that make our lives easier. This makes Liberals easy targets for those resenting these changes. Payoff among supporters is much less likely to manifest: users and beneficiaries of new technologies – often brought about by Liberals – do not become Liberals but see the changes as natural or politically neutral. If this is to continue, Liberals can be blamed for all the ills of frontier technologies without gaining the support of new constituencies, potentially resulting in electoral decline. To avoid this, Liberals need to examine how technological change interacts with Liberal electoral politics and find arguments convincing to voters.

This paper will examine how technological change can affect the political landscape of the near future. I will discuss the most important effects and argue that their political implications have so far been underes-

timated and that political disruption could be more significant than is often supposed. I will make the argument that automation and its impact on the economy and society can help populists and hurt Liberals as they can become easy targets for those that resent technological change. Populists in the western world have so far profited from the rise of fake news, demographic changes and the challenges posed by migration, which constitute the most important debates of today. Tomorrow's debates will be about automation and the cultural impact of frontier technologies. Liberals must prepare smart and popular ideas to win the arguments of tomorrow; and I will offer some ideas to this end.

While the starting point of this chapter is frontier technologies[1] in general, I will focus on automation as the most visible and analysed technological change. I assume that the most important change – from a political perspective – will be the effect of automation on the labour market as this is likely to have the most fundamental social and thus political consequences. The paper will summarise findings from academic works

1 According to the definition used by the United Nations, frontier technologies are defined as those technologies that are innovative and fast-growing and have the potential to exert a significant impact on societies, economies and the environment. The scope of frontier technologies includes advanced materials such as graphene and biodegradable plastics, scientific breakthroughs in biology and genetics, and advancements in 3D printing, robotics and artificial intelligence (AI). They are deeply interconnected – mainly through their generation of, and need for, large data sets - and interdependent. (UN 2018)

and think-tank reports but will present its own – speculative – recommendation for Liberals.[2]

Automation, jobs and inequality

Machines have been replacing human work for centuries, but only with the industrial revolution do we have to face the prospect that sooner or later theoretically all human work can be replaced by machines. The degree and speed with which this process can take place is the subject of intense debate. A PwC analysis differentiates three "waves" of automation: the algorithmic, the augmentation and the autonomous wave. The first wave concerns the analysis of large sets of data, the second means the automation of repeatable tasks, while the third involves problem-solving in dynamic real-world situations. The analysis suggests that by the time we reach the third wave in the mid-2030s, around 35% of existing jobs could be automated.[3] An Oxford University study put the number of US jobs at risk at 47%.[4] A study by the OECD finds that the numbers are significantly lower – in the range of 10-14% for developed countries.[5] A more speculative

2 When the paper deals with issues concerning liberals the term is used in a broad and general sense rather than referring to any specific political party
3 PwC (2018)
4 Frey-Osborne (2013)
5 Arntz-Zierahn (2016)

analysis in a previous publication by the European Liberal Forum makes the argument that potentially even creative tasks could be performed by machines.[6]

Notwithstanding the nature of such projections, the numbers are so different because of methodological issues: some projections focus not on occupations but on tasks and there is considerable disagreement on when certain important landmarks will be reached.[7] Nonetheless, three patterns emerge with important political implications. First of all, high-skilled jobs are in less danger than low-skilled ones: creative professions, legislators and psychologists will be the last to be automated. Second, the logic of automation does not correspond with the social or economic status of a profession. Managers, computer programmers and high-paid stock traders are more at risk than kindergarten teachers or nurses as jobs with higher demand for human empathy are more difficult to automate. This is important because it shows that the people whose jobs are threatened will include high-earning groups with significant social and political capital. Lastly, we are only at the very beginning: automation will not come as one quick shock but will invade more and more areas of the economy. Automa-

6 Löfgren (2016)
7 McKinsey Global Institute (2017)

tion is not like the economic or migration crisis which "hits" and then leaves some time for reaction and accommodation, but an ongoing process with ever-increasing political relevance.

Technological progress has been changing the economy and destroying jobs since the first industrial revolution, so one could make the argument that this is nothing new: the economy will simply create new jobs instead of the old ones. There are three problems with this logic. The first concerns the sheer numbers involved: never in history have a third of jobs become redundant in a few decades. The second is that the present change takes place in democratic societies, where displaced workers have drastically better chances of transforming their grievances into political action. The third concerns the possibility of new job creation: it is not clear that any jobs could be safe from automation so any new jobs created will themselves be in danger. In addition, for the people who lose out on automation, it could be extremely difficult to learn new skills required for new jobs – they could lack not only the education, but the motivation as well. The famous thinker, Noah Harari somewhat dismissively calls these people the "useless class": people who are not just unemployed but unemployable.[8] All this

8 Harari (2018), p 49

means that even if the economy as a whole will profit from automation, the people losing their jobs will be more resentful than people in similar situation at the time of previous economic changes.

Another very likely impact of automation will be rising inequality. People with high skills and/or high capital will be able to better understand and profit from the technological changes; they are also the ones whose jobs are less likely to be automated. As wage labour becomes important, people without the necessary skills and without access to education can be permanently shut out from the digital revolution.[9] Inequality is already increasing in the developed world but automation can fuel this as its beneficiaries will be the people already at the top[10], contributing to a "winner-takes-all economy"[11], a sense of entitlement of the elites and the economy increasingly serving the needs for services of people at the top.

Reaction from "the people": resentment and restriction

In essays released after his death, the famous physicist Stephen Hawking predicted that a new race of

9 Lawrence et al. 2017
10 Harris et al. 2018
11 Ingelhart 2018

"superhumans" could appear in the 21st century as a result of genetic modification. Hawking noted that this might cause political problems, as "regular" humans could not compete and would die out (Marsh 2018). This notion is characteristic of the way many scholars deal with the political effects of frontier technologies: there is an assumption that technology – and those benefitting from it – will "win" over any obstacles. However, if history is any guide, the evolution of superhumans would be most dangerous to these superhumans themselves: regular humans would see this process as a new threat and rather than stepping aside, they would do everything in their power to limit and even prosecute the new group. Human societies notably resent "others", and under democratic systems no "superhuman party" could ever become electorally competitive, leaving superhumans at the mercy of superhuman rights protecting NGOs.

Just like Hawking, thinkers on the political impact of automation often stop at stating the possible resentment of the newly unemployed and its adverse consequences on the support for mainstream political parties – and the possibility of rising support for populist alternatives. The disappearance of jobs and displacement of workers is treated as inevitable by most analysis where the political system can only "manage"

this process. This may understate the political implications: people whose jobs are threatened by automation have a number of options besides being passive "resenters".

In most areas where frontier technologies are endangering the present economic status quo, people dissatisfied with the changes are already proposing legislating and sometimes banning these new technologies – even when these technologies do not yet mean automation but only sharing of certain tasks which previously belonged exclusively to one group of people A good case in point can be changes in transportation technology, where certain traditional jobs are becoming obsolete. The reaction to this varies from country from country, but new technologies – like Uber – are being banned in some countries and made to work like a traditional business in others, despite the fact that many more people use these applications than the people who protested against them. The same process is happening with the popular Airbnb app. Thus, it would be a mistake to assume that people adversely affected by automation will simply "give up and walk away"; they are just as likely to fight and seek political representation, using their numbers to influence politics to slow or ban new technologies.

Much depends on the specifics of the technology:

in some areas, new technologies offer such clear benefits that banning them is not an option. In other areas, new technologies offer only marginal benefits; here, using politics as a means to stop new technologies is more realistic. The more organised a community threatened by job loss, the smaller, more marginal and more distributed the benefits of the new technology, the easier it is to forces politicians to rally against them.

The argument that new technologies endanger old ones is not one made up by populists – but populists can make these changes seem bigger than they are. They might also offer to turn the clock back. The more Liberals argue that change is inevitable, the more powerful the boasts of their opponents seem; the more "capable" illiberal forces can appear. Hostility to new technologies is already apparent in contemporary discussions – but will only increase as more and more areas are affected. The major turning point may arrive when automation reaches white-collar workers who might think themselves more shielded from its effects. It is one thing to lose manufacturing jobs – after all, machines replacing factory workers is nothing new. But when accountants, doctors or lawyers' jobs are disappearing, even the more affluent middle classes can become resentful of automation – and

potential supporters of parties promising to turn back the clock.

Automation is likely to have a different effect on the public and private sectors. In the private sectors, business will follow economic logic in determining which jobs to automate. The public sector, however, follows a different logic. As public-sector employees are also voters, politicians can become reluctant to enforce strict business sense and can decide to resist automation to keep as many public-sector jobs as possible. While this can lead to more inefficient public sector, it can also make public-sector jobs more protected and more desirable.

Automation will reinforce an already existing political chasm: that of age. While many older people feel comfortable with new technology, most resistance to change naturally comes from this age group.[12] Combined with the demographics affecting affluent nations – not independently of the advancements in medical technology – this will create a growing constituency for potentially illiberal forces.

From a Liberal standpoint, these effects do not seem promising. The main opponents of Liberals are much better placed to give easy answers to the political consequences of automation. Right-wing conserv-

12 Smith (2018)

atives and populists can build on public resentment towards change and can become the self-declared "champions" of the masses threatened by automation. The left can turn back to its origins in defending those whose jobs are threatened and can demand ever more control over private initiatives. Both groups can look hopefully to an older electorate.

Liberals, on the other hand, can be seen as drivers of the processes that deprive people of their jobs. Argument about the inevitability of technological progress can be intellectually sound but will lose on the political battlefield. Even without fake news, blame games and populist rhetoric, liberals can easily find themselves on the side of the people – and machines – taking the "decent" jobs. In the age of identity politics, it is easy to see political conflicts in which Liberals are the party of the machines – against parties of the people. Add to this the fact that all established political parties can suffer as a result of more decentralisation, the importance of networks over hierarchies[13] and the disappearance of stable electorates and a fatal combination arises in which the Liberals could be the most vulnerable to the effects of automation.

In our society, jobs are not simply a means of making money – they are also a source of self-identity.

13 Fergusson (2018)

What we do often defines who we are. Losing a job and becoming "useless" is not just economically devastating but can lead to a crisis of identity. If the jobs are taken away by machines, anti-automation sentiment and more classical anger at "elites" can combine in an explosive mix. Global businesses and leaders are already scapegoats in many countries with regards to the migration crisis: populists and autocrats are claiming that global elites have a mission to "change" the character of populations.[14] The same argument can be used much more effectively against machines who – unlike migrants – really will take away jobs. Populists and traditionalists often appeal to an idealised version of the past and contrast it with the present, claiming that change is happening so fast that society is becoming unrecognisable and understandable for many. With automation, this argument too will become more convincing: automation will have a very visible, physical effect: machines are likely to become omnipresent, reminding people of the rapid changes they experience.

14 See arguments from Viktor Orban: "the transformation of populations is taking place in Europe, partly because speculators such as George Soros are making large financial profits from the 'ruination' of the continent."

Automation and democracy

In addition to these effects, automation can fuel the debates already taking place about democracy and the viability of democratic politics. Democracy is under attack from strongmen, nativists and populists who all speak in the name of the "majority" against the elites. These attacks question the notion that the best political and economic model for the world is liberal democracy combined with market economy. Some of the attacks focus on the "liberal" element of liberal democracy and claim to build an illiberal state – in the name of the majority. Other attacks focus on market economy, claiming that if rising inequality and job loss are the results of it, some other form of economic management should be searched for. Liberals naturally defend the existing liberal-democratic order, which puts them in an awkward position as they have to argue for outcomes they themselves are not comfortable with. Furthermore, Liberals become defenders of the status quo and become identified with an increasingly unpopular social and political system. Liberalism was born as a critical ideology and Liberals are often best when they question and criticise, not when they defend established orders.[15]

15 Economist (2018)

Attacks on democracy can also arise from the elites and supporters of Liberal policies.[16] While this is a relatively new phenomenon, the notion that the "unqualified" majority can be an obstacle to progress is gaining steam. James Miller captures this as sentiment as asking "why should we entrust the fate of the Earth to large numbers of ordinary citizens foolish enough to support self-destructive policies and manifestly unfit leaders".[17] Automation, rising unemployment and inequality can lead to a situation in which a huge portion of the electorate can be unemployed – while those at the top of the economic ladder have limited political say. From this point of view, Trump can look like a relatively "benign" populist, rather than satisfying all the impulses of his constituents he drives their anger towards cultural elites rather than the economic system in general. Future populists could be very different, when they discover that attacking economic elites could be even more politically successful. These elites would of course not accept this but could very well seek to undermine the democratic notion of one person = one vote. On the theoretical level, this is already happening: the libertarian Jason Brennan explicitly calls for an "epistocracy": a system in which only the

16 Mounk (2018)
17 Miller (2018)

qualified can vote instead of the uninformed masses.[18] Many of these attacks against democracy would find support among Liberal voters.[19] The day may not be far when Liberal politicians have to explain to their own more highly educated, often younger supporters why unskilled, economically inactive, populist-supporting voters should have as much a say in politics than they do.

Automation and Liberal politics

All of the above means that the spread of frontier technologies can adversely affect the potential for Liberal politics. Without well thought-out answers, Liberal politics can become the victim of disaffected and resentful voters turning to populists or socialist alternatives. There is certainly a historical precedent for this: Liberals came out on the losing side of previous industrial revolutions. The second industrial revolution at the end of the 19th century – the first of the major technological changes taking place within quasi-democratic framework in democratic countries – led to the disappearance of the old party systems

18 Brennan (2016)
19 Traub (2016)

where Liberals and conservatives were the dominant forces. While the conservatives managed to hold on, Liberals were often replaced by socialists. The mass participation of low-skilled workers in the political process was good for democracy but bad for Liberals; they were either absorbed in different parties – as in the US – or were eventually relegated to third-party status, as in many European democracies. The third industrial revolution in the second half of the 20th century resulted in liberal-economic policies becoming more widespread, but the political benefits went to free-market conservatives and Christian democrats rather than Liberal parties. Already, the 4th industrial revolution seems to repeat some of these tendencies. The internet and social media were originally heralded as bringing great potential to Liberals; upending power structures and allowing skilled, mobile, young people unprecedented economic opportunities.[20] Today, social media is more associated with lack of transparency, unaccountability, big corporations and fake news.

Fortunately, Liberals still have time to prepare for the coming political conflicts of the coming decades. It is important to start from what Liberals should not do: they should not become the party of automation

20 Sparrow (2017)

and technological progress alone. In most countries, people today see more downsides than upsides to automation. In the US, for instance, 76% believe job automation will increase inequality; only 43% believe it will make the economy more efficient and only 26% believe new, higher-paying jobs would be created, The numbers are similar in other developed countries – with notable exceptions, like Japan.[21] In a Pew survey conducted in 2017, 85% of Americans expressed support for restrictions on workplace automation.[22] Thus, worries about automation are present today – before much of this process is underway. Once jobs actually start disappearing, resentment may very well grow.

If job automation is worrying to most people, there are two logical options that could shape Liberal politics: Liberals can work on increasing support for automation – where possible – and have something to say to those losing out on automation. Liberals, however, cannot become or, in some cases, remain the party of the "skilled" and the "smart" – they cannot be relevant if they have only little to say to people who today resent automation.

21 Wike-Stokes (2018)
22 Gramlich (2017)

Five ideas for Liberals

Liberals can deal with the political implications of frontier technologies by adopting policies and ideas early on that resonate with their voter base, are new and exciting so that they generate political interest and lay the case for an inclusive approach to technological change.

1. Liberals should focus on technological change that is positive and visible and make the case that they occur not naturally but thanks to Liberal regimes
2. Liberals can become the party of more leisure and less work (as an alternative to "saving jobs")
3. Liberals should focus on digital education, potentially introducing compulsory digital education
4. Liberals can welcome and encourage digital democracy and promote methods that give greater weight to concerned and informed citizens to correct mistakes of majority rule
5. Liberals must be on the side of emancipation of intelligent machines

Figure 1. Perceived impact and visibility of different forms of technological change

Perceived impact	Visibility	
	High	Low
Beneficial	**Examples:** Internet availability, information everywhere, easier communication **Liberal strategy:** Identify with and emphasize liberal roots	**Examples:** Medical advances, safer online platforms, scientific breakthrough thanks to big data **Liberal strategy:** Support without high emphasis
Harmful	**Examples:** Machines causing deep anxieties (justice system, armies) **Liberal strategy:** Oppose with high emphasis	**Examples:** Big data **Liberal strategy:** Keep discussions to lower profile whether support or oppose

1. Perceived impact and visibility of different forms technological change

Frontier technologies can cause a lot of worry, because in general discussions people might focus on the technologies they understand the least and fear the most. So it might be prudent to differentiate between different technologies. From a political standpoint, it could be useful to imagine technological changes in a 2*2 matrix displayed in figure 1. where technological changes are grouped according to the perceived benefit/harm and their visibility. Some technologies are

clearly visible and are mostly appreciated by the people: smartphones, access to the internet and information anywhere or electronic administration fall here. Some technologies are perceived as beneficial – but people might not know much about them. Advances in medical technology are good examples. Some change is visible and probably disliked: robots taking away jobs, robots in the military or police could be included in this category. Some technological changes are unpopular but not visible, like the amount of data collected by corporations and sold to third parties.

All these changes make technological and economic sense and in some ways improve their respective fields. Still, Liberals should differentiate them based not only on economic but political criteria: they should actively look for ways in which the most unpopular changes could be managed, even going as far as to introduce legislation limiting their use themselves. Using machines in the police or judicial system might be one of these areas: Liberals could advocate retaining humans in such sensitive positions. More importantly, Liberals should identify themselves with the more beneficial – and therefore more acceptable – changes and start arguing for potentially popular emerging technologies. If Liberals can successfully claim to be the political force which brings about

advances in health care and education via technology, instead of allowing these changes to be seen as "natural" and therefore not attributable to any political force they have a strong political base to build on. Liberals can be in the majority in cases which resemble the emancipatory struggles of old, in which religious and moral concerns are portrayed by opponents as being incompatible with free choice and technology. Public majorities eventually arose on the side of choice and it is safe to expect this be the case once again.

2. More Leisure and less work

One of the ways in which Liberals can respond to rising unemployment is by advocating for less work; by challenging the notion that a person's self-esteem is somehow connected to his or her job. This might be difficult and even counter-intuitive as tradition middle-class Liberal constituencies place a high value on hard work. Still, arguing that it can be acceptable for someone to sacrifice work for pursuing other interests; that self-realisation can be more important than material benefits can be one of the ways Liberals can reach people on the losing side of automation. Liberals can connect this attitude to their core beliefs by advocating that in the long run, occupation and the type of work – including temporary, full time, or new

other atypical – can become a matter of choice. Liberals should embrace the most positive potential implications of the 4th industrial revolution: namely, that it enables people to work less.[23] Doing more meaningful, more satisfying work during shorter hours enabling more free time could become a very popular notion and can be a powerful counter-argument to opponents on the left and right who would make "protecting the jobs" their central issue.

3. Education and lifelong leaning for the digital era

When discussing how societies in general should react to automation, the role of education is always emphasised. Life-long learning, the need for the education system to prepare for future uncertainties and the importance of education in general is frequently underlined. In political debates, however, general arguments about the importance of education can sound shallow and become clichés as all political parties generally seek to underline their commitment. Liberals should move further and could propose dramatically more inclusive education for adults; some sort of compulsory adult digital education should not be dismissed out of hand.

23 Avent (2018)

4. Reinventing democracy with digital technology

Liberals can best respond to the challenges that automation raises to democracy by accepting that the present formula of representative democracy may need to change and incorporate new ideas and techniques to survive. This should not lead to abandoning faith in the democratic process; liberals should not give in to elitism or any form of illiberalism. This is not the same as saying that democratic processes and institutions must remain unchanged. Technology offers a number of possibilities to enhance and expand democracy and Liberals should embrace them. Liberals can become champions of methods that aim at involving the electorate in decision-making besides the regular election cycles via e-referendums, online voting and civil participation in decision making. This requires building participatory platforms for citizens; supporting ideas like the "Cultural Genome Project" that can raise awareness for the diversity of cultures[24] and in general using online tools to involve and inform. At the heart of these issues is the idea that informed and concerned people should be given a stronger voice in matters that affect them. Rather than having everybody – the full electorate and their representatives – decide

24 Helbing et al. (2017)

everything, certain questions should be decided by people with a clear stake and/or interest.

5. Emancipating machines

Liberals have always been at the forefront of emancipatory struggles. They have fought to extend voting rights to women, civil rights to minority groups, the right of the people to their own body or equal rights for LMBTQ persons. The coming emancipatory struggle of the 21st century will be the struggle for the rights of intelligent machines. This is the area in which frontier technologies and science-fiction meet: we are still very far from machines that are so intelligent as to be candidates for civil rights, which is not to say the discussion is not already underway.[25] It seems both logical and politically smart that Liberals become involved in this impending issue. The history of civil rights and Liberalism, its philosophical and ideological assumptions and the need to "enlarge" their constituencies, all point to the direction of Liberals being on the side of emancipation.[26] If Liberals are being branded by their opponents as being "for" the machines, they might as well try to gain politically from it.

25 Doherty (2016)
26 Pinker (2018)

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Citizen-Centred Digitalisation

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The future is here. Self-driving cars have made their way into the streets, there are robots that can help to do the dishes, and social media has fundamentally changed the way we socialise, mobilise and organise. At the same time, questions are being raised about the social and ethical implications of these developments.

This book puts the citizens at the centre of the digitalisation debate by exploring how we can make the most of the opportunities of digitalisation, while ensuring that it is a force for good for every citizen. We explore a number of the issues needed to consider in order to achieve this. What can we expect from the AI revolution? How can Europe construct an education system which is fit for the digital era? How to transform our cities into 'Smart Cities'? And how can we safeguard a stable place for the Liberal movement in the digital era?

This publication makes a Liberal contribution to one of the most defining political issues of our time, that of the digital transformation of our societies. For a liberal society of the future, it is crucial that we put the freedom, opportunities and abilities of the citizens at the centre of the debate about this transformation.

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