A Roadmap for Europe to Succeed in the Digital Economy

By Eline Chivot | December 2019

Nations that lead in digital innovation and adoption, especially at the enterprise level, will be more competitive in industries ranging from agriculture to financial services and manufacturing. Indeed, Europe must harness the power of digital innovation not just to increase economic growth and expand prosperity, but also to address important societal challenges related to the environment, public health, transportation, and other pressing concerns.

The EU's digital policies should reflect its twin goals of growing Europe's economy and leading through its values. But matching the pace of digital innovation and levels of adoption that other markets are achieving, especially in the Asia Pacific and North America regions, also will require strong political will to achieve harmonized, innovation-friendly digital policies and regulations throughout the EU.

EU policymakers—including those in the European Parliament and Commission—should seize the opportunity of a new political cycle to redouble efforts to deliver the Digital Single Market, thereby cementing and implementing a strong vision for the digital economy. In concert with this, policy officials across EU institutions should commit themselves in the next term to developing new laws and regulations essential for providing a policy framework to drive growth in the digital age.

To that end, this policy briefing includes a number of recommendations for how EU policymakers can address fairness in online platforms; respond to concerns about online hate speech and disinformation; balance privacy, competition, and innovation to maximize economic welfare; and improve European competitiveness in emerging digital technologies such as artificial intelligence (AI) and the Internet of Things (IoT).

1. PURSUE TECHNOLOGICAL LEADERSHIP IN EMERGING DIGITAL TECHNOLOGIES

Europe should pursue technological leadership in emerging digital technologies where global leadership is not yet established, such as AI, IoT, and robotics—not past or current technologies such as cloud computing, Internet search, and social networks. It makes little sense, nor is it possible, for Europe to try to clone the services offered by Google, Baidu, Facebook, or Tencent. Instead, the EU should seek opportunities to lead in emerging technologies that will **challenge incumbent firms.**

To achieve this, and spur digital transformation in industries such as energy, financial services, health care, manufacturing, and transportation, EU policymakers should provide funding for member states to accelerate their e-government efforts, especially to adopt technologies such as AI and IoT, which can significantly enhance services. For example, to support a wide array of IoT applications, the EU should **develop an "EU Smart City App Store"**—a common repository of approved commercial applications and open-source code—which other EU cities can adapt and reuse. It should establish national challenges across its member states, with prizes to spur the development of IoT applications with high social or economic impact. The EU should also encourage robust public-private partnerships for ambitious civic technology projects.

To ensure it is a lead adopter of AI across these important industries, EU policymakers should ensure its member states coordinate their efforts and national strategies to **efficiently invest in research and development, transfer research into commercial innovations in Europe, spur digital skills development, provide more and broader access to data, and create a harmonized regulatory environment** that enables AI and broader digital innovation. EU policymakers should collect best practices and recommendations of member states' national digital or AI strategies, to identify where and how they can pool resources and join forces. For example, they can coordinate targeted educational and awareness-raising campaigns for companies to increase their capacity and willingness to adopt AI and promote digitization. And while many digital policies may indirectly assist firms to become digital leaders, there are steps that governments should pursue with much more vigor and commitment to directly impact AI adoption. One is to increase the use of AI in the public sector to increase productivity and improve services. Another is to increase access to high-quality public-sector data, such as transport and health data, that businesses, researchers, and others can use to develop and deploy AI.

As part of this goal, EU policymakers should encourage every EU member state to **appoint a chief data officer** not only to champion data innovation domestically, but also to serve on an EU-wide advisory panel charged with counseling the European Commission on the development of a cohesive vision and strategy for capturing the full benefits of data-driven innovation.

2. CREATE A REGULATORY FRAMEWORK FIT FOR THE DIGITAL ECONOMY

Most industries will be transformed by the next wave of digital innovation. Any EU laws regulating digital technologies in order to "level the playing field," especially with foreign companies, could very well backfire by hindering EU digital transformation and the creation of EU digital leaders.

Although the EU has made substantial progress in creating a Digital Single Market, European firms, regardless of size or age, still face challenges in scaling up and developing emerging technologies; this is because of the EU's current regulatory framework and fragmented market. EU policymakers should **identify and update policies that create unnecessary challenges to Europe's digital transformation** in the current regulatory framework.

In particular, EU policymakers should **amend the GDPR to address shortcomings** that impede the digital economy, including the unnecessary restrictions it has created for AI. Data provides the building blocks for AI, and with unnecessary regulatory restrictions on the collection and use of information, European businesses will simply not be able to use the technology to its full potential.

EU policymakers should work to help European digital startups scale more quickly. Scale is often a requirement to be competitive in the digital economy, and these benefits are passed on to consumers. This means that EU legislators should **simplify and harmonize rules for the Digital Single Market.** Full cross-border access to online content and services for all users is not yet a reality. In addition, EU policymakers should **restrain competition regulators that assume "big is bad"** as this will limit the ability of European firms to be competitive, especially vis-à-vis massive, state-backed national champions from China. Competition policy for the digital era should recognize that in many industries, especially network industries, scale is essential for productivity, innovation, and consumer welfare.

The Parliament should mandate that the Commission **create an Office of Innovation Review** within the Regulatory Scrutiny Board whose mission would be to serve as an "innovation advocate" in the regulatory process. Europe would be better off operating on the innovation principle, not the precautionary principle as it considers policy orientations and responses governing future digital technologies. For example, rather than supporting

calls to slow the introduction of new technologies until regulators adopt new rules, policymakers should take steps to encourage all innovators (existing and new, big and small, domestic and foreign) to enter markets, such as by establishing regulatory sandboxes—frameworks that enable firms to work with regulators to test their innovative products, services, and business models with real consumers in a controlled environment on a trial basis.

European policymakers should continue to **foster a dialogue with industry** to ensure the policies proposed by the Commission are pragmatic, grounded in facts, and not detrimental to innovation. Crafting better regulations and implementing EU legislation more effectively will require more involvement of regional and local authorities, industry stakeholders, think tanks and other expertise. Moreover, the Parliament should assert its presence within the policy design process, for instance during ex-ante consultations and impact assessments. European policymakers should also prioritize industry-led codes of practice such as on disinformation, co-regulation, and guidelines for industry; such policy tools can close the gap between the pace of policymaking and that of technological innovation in ways that some other forms governance cannot.

This dialogue is particularly relevant and necessary to ensure the EU economy continues to benefit from the growth of the Internet sector, driven by the success of online platforms. EU policymakers have updated a number of policies that touch upon the intermediary liability framework of online content. Overly prescriptive rules and one-size-fits-all solutions could have unintended consequences, such as restricting innovation, limiting consumer choice, and in some cases, harming freedom of speech. Previous proposals have imposed a set of obligations on online platforms that may not be appropriate for the full diversity of participants in the Internet economy. For example, some companies may be only hosting, caching, or transmitting user content, others may not be able to access user content as they encrypt user data end-to-end, and still others have full control of user content. Holding all these different types of companies to the same set of standard obligations to monitor or remove content would not make sense.

The Commission's policy agenda includes a **Digital Services Act**, which will set out new liability and safety rules for digital platforms, services, and products. This could either lead either to re-opening the eCommerce Directive or to creating a new instrument. Pressure for action is growing, but EU policymakers, in their legislative proposals, should **preserve these liability protections**. Reducing current legal provisions could carry serious negative repercussions for the EU economy, as well as for the availability of online services and products that consumers currently access. Any updates to these rules should modernize definitions and ensure, through

stakeholder consultation and impact assessments, that these regulations maintain a proper balance among the roles and responsibilities of online intermediaries, so as to protect consumers and avoid unnecessary penalties on digital platforms and stakeholders. At the same time, policies to reduce illegal or unethical activities should continue to be pursued and extended because these efforts can advance important social goals without limiting digital transformation. For example, policies to block sites that engage in online piracy can support greater adoption of legal streaming services while reducing copyright infringement.

In addition, EU policymakers should **avoid supporting policies that limit digital transformation**, such as discriminatory taxes on digital services or companies, technology bans, or onerous regulatory restrictions on technologies like ride-sharing applications, autonomous delivery robots, self-checkout systems, facial recognition systems, and more.

3. INVEST IN RESEARCH

Emerging digital technologies such as AI, robotics, and IoT enable firms to be more efficient and competitive. To be a leader in these fields, EU firms need to be at the forefront of their R&D and commercialization. It is not enough to be world class in university research (as the EU is in AI), in part because much of that knowledge becomes accessible to researchers and companies around the world, including China. Europe also needs to be world class in technology commercialization. Therefore, the EU should **increase technology R&D** in partnership with the private sector.

The Parliament should ensure that the Commission preserves and expands its ambition for its next framework program Horizon Europe for 2021–2027 and its new Digital Europe investment scheme, as these funds are critical to support and achieve Europe's digital transformation. The Digital Europe program will allocate €2.5 billion directly to AI, and an additional €700 million will be invested in advanced digital-skills training and education; under Horizon Europe, the proposed research funding for AI will increase significantly relative to the previous program, Horizon 2020. In addition, AI is outlined as a specific research topic, along with robotics. One remaining objective of the Commission is to increase public and private investment in AI by at least €20 billion through 2020.

But for this funding to be most effective, industry in the EU needs much more say in determining the technology areas and projecting the EU funds. EU policymakers should advocate for the creation of **an Industry-University Cooperative Research Center program for digital technologies** where universities and industry work collaboratively to determine key research areas. Closer cooperation and consistent knowledge sharing between industry researchers and academia can foster successful innovation by encouraging research that is commercialized into new products and

services. Through their questions to the Commission, members of Parliament should also encourage the funding of more **industry-supported university R&D centers** on multiyear contracts rather than funding individual projects. This is important to ensure continuity of research, centralize R&D efforts, and guarantee resources for firms.

Member states' governments and EU institutions should continue to **support current proposals intensifying funding efforts**, such as the proposal for the Directorate General for Research and Innovation for R&D funding in robotics and AI. The EU should expand the Pan-European Venture Capital Funds-of-Funds (VentureEU), a joint program of the Commission and the European Investment Fund, which aims to boost investment in innovative start-up and scale-up companies across Europe. The EU should also dedicate funding specifically for AI start-ups.

4. ENCOURAGE PUBLIC SUPPORT AND NURTURE A DIGITAL-READY POPULATION

Public support for digital transformation will be critical in ensuring digital adoption. Public understanding about how digital transformation will lead to increased living standards and better quality of life will be important for overcoming anti-technology views. Without public support, the political pressure to pass legislation limiting innovation will grow, as will the pushback on companies that seek to implement digital innovations and adopt digital business models.

But Europe needs more than a digitally supportive population, it needs a digital-ready population. To foster a digital-friendly culture, the EU should encourage its member states to **integrate digital skills such as data science and computer science courses into their primary, secondary, and university curriculums**. The Parliament should ensure the Commission increases grants to create entrepreneurship education programs and increases project-based learning in EU schools and universities. In addition, policymakers and other elites need to encourage the public to support digital transformation. By sharing and advancing **an optimistic narrative** about how digital transformation will lead to increased living standards and better quality of life; and by investing in knowledge and education the EU can ensure a climate conducive to competitiveness in the digital economy. Facts support technological optimism, as they show that automation will create more jobs than it will eliminate. EU policymakers should also lead the effort to debunk myths and fears about AI. For example, the European Commission could initiate information campaigns to raise awareness of how the private sector is using AI by working with businesses to articulate more clearly the value their technology offers.

The EU should also build on public-private partnerships for digital skills development. For example, the EU should fund a pilot program that would **establish more maker spaces in European high schools** in order to boost digital manufacturing and engineering skills. EU member states should **develop local digital skills training** programs by partnering with local universities and industry, including through coding "boot camps" and specialized training in areas like cybersecurity.

To ensure it can attract and retain talent, the EU should **provide flexible visa options for tech researchers and entrepreneurs.** EU policymakers can follow the lead of Lithuania, whose national AI strategy created "startup visas." This special visa category enables founders to migrate and establish their business—including hiring—with fewer or more flexible administrative requirements and faster procedures to acquire residence permit in various member states.

Finally, EU policymakers should encourage member states to **fund training on AI capabilities and opportunities for SMEs** to ensure these businesses, which may not be able to hire tech experts full-time, are able to hire companies providing these services and successfully manage these types of projects and contracts.

5. SPEARHEAD TECHNOLOGY POLICIES

Parliament should support the Commission's plans in its efforts to prioritize and ensure the efficient implementation of existing programs and policies that affect particular industries in ways that strategically drive digital transformation (e.g., smart agriculture and DG AGRI; fintech and DG ECFIN; smart transportation and DG MOVE). The EU should align these programs and their funding as much as possible with the imperative of driving digital transformation.

In addition, policies should aim to allocate substantial resources to improve digital infrastructure across member states, thus enabling faster transport and better internet connectivity. For example, the EU should **develop best practices on how local authorities can streamline their infrastructure siting requirements** to lower costs of deployment for 5G infrastructure. Many existing codes regulating wireless infrastructure were designed assuming 30-meter-tall macro-towers. However, 5G is anticipated to require denser networks of smaller, less obtrusive, but more numerous cell sites, requiring a re-think of infrastructure regulation. Efforts to streamline permitting processes, access to rights-of-way, and historic preservation review would help **accelerate 5G deployment.** The advent of 5G networking also adds to the urgency to the demand for commercially licensed spectrum. The Commission should encourage member states to **coordinate 5G spectrum band plans** as much as possible, if not outright consolidate spectrum management functions at an EU-wide level. Uniform

spectrum availability throughout the single market would allow for greater economies of scale and a less fragmented market, especially if paired with a more permissive merger policy.

With the growing importance of addressing security challenges to 5G networks and their supply chain, the EU should build on the current policy and security framework. The efforts to date, as in coordinating member states' national risk assessments, and working toward a common toolbox of mitigating measures each country can adopt, is a good start. However, given the severity of the risk, the sunk cost of potentially vulnerable equipment in some member states, and the large negative externalities involved with 5G security risks, **stronger action is warranted at the EU-level.**

The EU should **set up shared platforms for public sector open data.** The public sector has vast amounts of data in a number of sectors promising for AI research and tools, such as health care, energy, and transport, that other stakeholders should be able to access. For instance, because most health care in European nations is provided by public health authorities, the EU has an opportunity to amass extremely large datasets on patients and outcomes.

As many AI uses and applications rely on the availability of data, EU policymakers should encourage member states to **build and implement a European data strategy** to accelerate data access and sharing between government authorities, researchers, and companies—thereby addressing the current lack of infrastructure coherence and interoperability of datasets. The data strategy should also address opportunities for exchanging data with non-EU stakeholders as well as opportunities to improve data quality.

For additional resources, please see:

- Daniel Castro and Eline Chivot, "To Promote Data Innovation, All EU Governments Should Appoint a National Chief Digital Officer" (Center for Data Innovation, October 10, 2019), https://www.datainnovation.org/2019/10/to-promote-data-innovation-all-eu-governments-should-appoint-a-national-chief-digital-officer/

- Eline Chivot, "How the Next European Commission Should Tackle AI" (Center for Data Innovation, September 4, 2019), https://www.datainnovation.org/2019/09/how-the-next-european-commission-should-tackle-ai/

- Daniel Castro, Michael McLaughlin and Eline Chivot, "Who Is Winning the AI Race: China, the EU or the United States?" (Center for Data Innovation, August 19, 2019), https://www.datainnovation.org/2019/08/who-is-winning-the-ai-race-china-the-eu-or-the-united-states/

- Eline Chivot "To Succeed in the Digital Economy, Europeans Need to Like, Not Fear, Technology" (Center for Data Innovation, June 25, 2019), https://www.datainnovation.org/2019/06/to-succeed-in-the-digital-economy-europeans-need-to-like-not-fear-technology/

- Eline Chivot and Daniel Castro, "The EU Needs to Reform the GDPR To Remain Competitive in the Algorithmic Economy" (Center for Data Innovation, May 13, 2019), http://www2.datainnovation.org/2019-reform-the-gdpr-ai-a4.pdf

- Eline Chivot, "How the EU Could Accelerate Its Smart City Initiatives" (Center for Data Innovation, April 10, 2019), https://www.datainnovation.org/2019/04/how-the-eu-could-accelerate-its-smart-city-initiatives/

- Eline Chivot, "Does Europe's Competition Policy Work Against EU Firms Getting Needed Scale?" (Center for Data Innovation, April 3, 2019), https://www.datainnovation.org/2019/04/does-europes-competition-policy-work-against-eu-firms-getting-needed-scale/

- Robert D. Atkinson and Stephen Ezell, "Promoting European Growth, Productivity, and Competitiveness by Taking Advantage of the Next Digital Technology Wave" (ITIF, March 26, 2019), https://itif.org/publications/2019/03/26/promoting-european-growth-productivity-and-competitiveness-taking-advantage

- Eline Chivot, "The Fight Against Online Disinformation Calls for Concerted Approaches to European Policymaking" (Center for Data Innovation, February 18, 2019), https://www.datainnovation.org/2019/02/the-fight-against-online-disinformation-calls-for-concerted-approaches-to-european-policymaking/

- Robert D. Atkinson, "The Task Ahead of Us: Transforming the Global Economy With Connectivity, Automation, and Intelligence" (ITIF, January 7, 2019) https://itif.org/publications/2019/01/07/task-ahead-us-transforming-global-economy-connectivity-automation-and

- Joshua New, Daniel Castro, and Matt Beckwith, "How National Governments Can Help Smart Cities Succeed" (Center for Data Innovation, October 30, 2017), http://www2.datainnovation.org/2017-national-governments-smart-cities.pdf

- Robert D. Atkinson, "'It's Going to Kill Us!' and Other Myths About the Future of Artificial Intelligence" (ITIF, June 2016), http://www2.itif.org/2016-myths-machine-learning.pdf

- Doug Brake, "Spectrum Policy and the EU Digital Single Market: Lessons from the United States" (ITIF, December 7, 2015), https://itif.org/publications/2015/12/07/spectrum-policy-and-eu-digital-single-market-lessons-united-states

- Joshua New and Daniel Castro, "Why Countries Need National Strategies for the Internet of Things" (Center for Data Innovation, December 16, 2015), https://www.datainnovation.org/2015/12/why-countries-need-national-strategies-for-the-internet-of-things/

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