EUROPEAN AI POLICY CONFERENCE

Trends in Leadership, Strategy, and Innovation

CENTER FOR DATA INNOVATION

European AI Policy Conference

Trends in Leadership, Strategy, and Innovation

Contents

About the AI Policy Conference

The Center for Data Innovation hosted the "European AI Policy Conference: Trends in Leadership, Strategy, and Innovation" as an online event on December 1, 2020.

Artificial intelligence, or AI, is emerging as the most important technology in a new wave of digital innovation that is transforming industries around the world. Businesses in Europe are at the forefront of some of the latest advancements in the field, and European universities are home to the greatest concentration of AI researchers in the world. Every week, new case studies emerge showing the potential opportunities that can arise from greater use of the technology. Yet the best evidence suggests that Europe is losing ground to its American and Asian competitors. That is why the EU and its member states have been pursuing strategies to bolster the development and adoption of AI. But to fully realize its ambition to become a global leader in AI, Europe needs to attract an influx of new resources and talent, focus on the building blocks essential to AI, such as data, talent, and research, implement important policy changes, and earn support from its citizens.

This day-long conference brought together leading voices in AI from across Europe to discuss why European success in AI is important, how the EU compares to other world leaders in AI today, and what steps European policymakers should take to be more competitive in AI.

Topics included:

- Where does Europe have a competitive edge in the global AI economy?
- Which sectors of the economy present the greatest opportunities for AI disruption?
- How can Europe promote AI leadership in strategic sectors?
- How are businesses, universities, and governments using AI for social good?
- What progress are researchers making in building secure, safe, and trustworthy AI?
- How can Europe remain at the forefront of AI development and adoption?
- Which policies will ensure AI delivers benefits for all of Europe?
- How can policymakers strengthen the building blocks for Europe to succeed in AI?
- How can Europe enhance international cooperation on research and data sharing?

This report provides an overview of some of the highlights from the conference. Videos from the event, along with more details about the speakers and program, are available on aipolicyconference.org.

Introduction

This event brought together leading voices in AI from across Europe to discuss the importance of ensuring European success in AI, the progress the EU is making to compete globally, and the next steps that policymakers should take to ensure European leadership in AI.

Over the last few years, the global capabilities of AI have improved considerably with the development of better, cheaper, and faster hardware, greater storage capacity for data, larger and more detailed datasets, and more accurate algorithms. These advances have unlocked new applications that we, as consumers, interact with every day.

Companies are using AI to drive more efficient operations and processes, transform their business models, and offer innovative, personalized products and services. Their success is set to directly correlate with their ability to automate processes using AI.

Leveraging AI can enable greater access to basic goods and services such as education and healthcare, or the better allocation of natural resources. It is worth noting that many facets of AI's potential, as well as the importance of digital transformation at large, became ever clearer during the COVID-19 pandemic.

"Many nations are racing to achieve a global innovation advantage in AI, because they understand that it is a foundational technology that can boost competitiveness and help solve societal challenges today and tomorrow."
– Eline Chivot, Center for Data Innovation

This technology is also important geopolitically. Many nations are racing to achieve a global innovation advantage in AI, because they understand that it is a foundational technology that can boost competitiveness and help solve societal challenges.

Some countries focus more on accelerating the development and adoption of AI, while others on defining the rules, ethical norms, and standards for its use and development. The EU is largely following the latter strategy, and could be the first to enact rules targeted at AI as it goes from plans to action in 2021.

However, the bloc is grappling with hard questions. How can it strike a balance between regulating the technology and allowing AI innovation to flourish? What are the policies that will help the EU develop its existing assets, foster entrepreneurship and research, support and retain its talent, and promote data quality? Which policies will ensure no one is left behind and that all benefit? What are the EU's key assets when it comes to AI, which sectors are showing great promise for EU leadership, and in which areas should the EU step up its game? How can policymakers create a policy framework that is future-proof and equipped to support AI and that encourages responsible development and use without limiting innovation, lowering adoption, or duplicating existing rules? Finally, how should the EU keep working with its allies on all this?

Opening Sessions

Keynote: Dita Charanzová

In her keynote speech, Dita Charanzová, Member of the European Parliament for Renew Europe and Vice President of the European Parliament, shared her vision of what European leadership on AI should look like. She highlighted the strengths and the opportunities the EU should build on, how to address the areas where progress is needed, where Europe can do better, where it can lead and work with others, and what should be the objectives of the EU AI legal framework.

The COVID-19 crisis has accelerated the digital revolution, leading to changes and innovation in various areas and economic sectors. Businesses are looking even more to AI as a way to reduce costs and increase efficiency. According to Charanzová, in legislating on AI, it is equally as important to consider the limitations of AI and what it can achieve. Policymakers should assess the risks of AI based on the impacts its use could have on health and fundamental rights. At the same time, the EU's plans for AI should create an environment conducive to innovation, be grounded in facts and realities, and address concerns proportionately and appropriately. Taking action is necessary, and will always entail taking risks. Without accepting risk, societies would not have reached the same level of technological progress that they benefit from today.

"Fear should not guide our approach. The EU should not fall into the protectionist trap. We should not develop AI that only works for Europe." – Dita Charanzová, MEP

Charanzová cautioned against certain proposals such as conformity assessments on AI systems, which according to her will lead to delays and costs, and present a real barrier to innovation. These mechanisms should be the exception, not the rule. She also stressed that the solution to concerns raised regarding AI should not lie in banning technologies such as biometrics.

Finally, Charanzová emphasized that the EU should maintain its focus on priorities such as investment, R&D, access to data, and completing the digital single market.

Keynote: Tabitha Goldstaub

In her keynote speech, Tabitha Goldstaub, Chair of the UK Government's AI Council and Co-Founder of CognitionX, recalled the importance for governments to support AI development. Goldstaub referred to the UK government's commissioned review on how the AI industry can be grown in the UK, produced by Dame Wendy Hall and Jérôme Pesenti. Recommendations included improving access to data and the supply of skills, as well as avenues to maximize UK research and support AI uptake. To help deliver on these commitments, the government announced the UK AI Sector Deal and the creation of three bodies: The Office for AI, the Center for Data Ethics and Innovation, and the AI Council. The latter pivoted its focus to aiding the response to COVID-19, by exploring how the AI ecosystem and the most innovative tech companies could support and be supported in this response.

Goldstaub emphasized the urgent need to develop AI further and ensure AI systems can be used and deployed in critical situations like the pandemic. The UK needs a strategy for AI, especially given its

need to nurture its partnerships with EU member states. Goldstaub highlighted the UK government's need to double down on AI investments, as well as to become more adaptable to disruption over the next 10 to 50 years. Support for AI should indeed reflect the rapid pace and evolution of the technology and its applications. This requires integrating approaches to AI ethics, security, and social implications.

"The promise of AI being able to solve challenges humans are unable to is really coming to fruition."
- Tabitha Goldstaub, Chair, UK AI Council

Public confidence and trust in science and technology, as well as buyer confidence at public and private-sector levels, are paramount drivers behind AI adoption, and can ensure that the technology's benefits spread throughout society. Building up confidence will depend on systems that ensure full accountability, ethics, and transparency. It will also be key to develop the best science and the most robust applications, to commit to rolling out ambitious skills programs for AI and data literacy, to promote cutting-edge skills, and to make the AI sector more accessible, diverse, and inclusive. Finally, increasing adoption will also require supporting the AI startup vendor ecosystem. As AI innovation relies on data, Goldstaub recommended consolidating and accelerating the infrastructure and governance needed to increase access to robust and diverse datasets.

Panel – How Can Europe Spread the Benefits of AI?

Panelists discussed the best ways in which policymakers and decisionmakers could ensure that the benefits of AI and data-driven innovations are truly inclusive. Sepp Hochreiter, Professor at Johannes Kepler University Linz, noted that instruments and networks of research such as the European Laboratory for Learning and Intelligence Systems (ELLIS) can act as a bridge to bring new techniques into various European industries' strong production systems, including by working with large foreign technology firms. Several elements in the EU's AI strategy, such as digital innovation hubs (DIHs), are a promising way to drive AI development by pooling resources and tackling barriers to transforming innovations into successful commercial applications. However, Eline Chivot, Senior Policy Analyst at the Center for Data Innovation, mentioned that despite calls for a coordinated approach, many member states still have not adopted national digitalization strategies, and some of the DIHs have received limited support from EU countries.

Increasing AI adoption across the EU will require work from businesses in all sectors. Engagement with large global organizations can help make AI more accessible to European SMEs. Phillip Malloch, Director of Economic and Social Policy at Facebook, said that millions of businesses use platforms like Facebook and the services they provide to digitize and reach consumers across different parts of their industry.

Panelists agreed that regulating too heavily, strictly, and prematurely would result in a missed opportunity. They shared the view that while the EU is on the right track by opting for a risk-based approach, policymakers should carefully define what high-risk is and should not adopt too broad of a definition for it. For high-risk applications, some regulation might be useful. However, no innovation is possible without a certain degree of risk—the EU should mitigate it to the extent possible, but not use it as a reason to ban certain technologies. According to Hochreiter, to regulate technology appropriately, policymakers should gain a better understanding of AI to be able to make a careful distinction between AI applications. For example, the technology used for facial recognition systems is similar to that used to detect cancer tumors.

"We need to make everyone a technology believer."
- Michel van Leeuwen, Director for AI Policy, Government of the Netherlands

Regulatory coherence will be a key element to guarantee clear rules and consistency in the implementation across member states. Michel van Leeuwen, Director for Artificial Intelligence Policy at the Ministry of Security and Justice of the Government of the Netherlands, advocated for a "learning approach," which should be flexible enough to accommodate for innovation, and build on existing EU regulations. There are national laws and structures in place in member states that already address concerns in the use of AI (e.g., labor laws for AI recruitment tools). Introducing more legal complexity would make enforcement harder, and disincentivize innovation, given that beneficial applications created in one country may risk being illegal in another.

Panelists briefly debated whether a dedicated European AI governance agency would help align member states' activities, funding, and resources more efficiently. Magdalena Piech, Head of Regulatory Affairs at Allegro and Chair of the European Tech Alliance, noted that the EU and member states are already home to multiple authorities covering different issues ranging from data protection to consumer protection and competition issues.

"The EU needs to build up a good ecosystem to apply and use AI by involving everyone, from its schools to its companies and its research ecosystem" - Sepp Hochreiter, Founding Director, Institute of Advanced Research in AI

Hochreiter raised strong concerns regarding the extent to which the EU is falling behind in the AI competition. He mentioned that many researchers are leaving academia to work for foreign companies and are leaving Europe because of overregulation. EU policymakers should not overlook priorities such as talent retention and investment.

Because data for AI is a global resource, the EU should engage globally, using the standards and norms of broader ecosystems. At the same time, speakers concurred that common standards are

hard to build, measure, and enforce. As AI is a varied technology, it cannot fit into a single defined-as-standard model. Working with government agencies on certifications for AI systems, validating processes (as opposed to regulating outcomes), and sandboxing would be more beneficial.

The EU's AI framework presents an opportunity to adopt a positive approach towards technology in order to enhance the uptake and acceptance of AI across member states. Many AI applications do not pose risks to physical wellbeing, fundamental rights, or healthcare systems. Yet worries about AI are significant in Europe, and can affect the willingness and readiness of the European population to embrace the technology. According to Piech, companies have a role to play in ensuring that the practical uses they make of AI enhance safety and improve daily lives; those who do so will be those who gain the confidence and trust of consumers.

"European companies may be diverse, with activities across sectors, but all agree AI is essential." - Dr. Magdalena Piech, Chair, European Tech Alliance

Speakers touched upon the issue of skills and education as another driver of inclusion and adoption. Industry has a key role to play in this area as well. To ensure organizations have the expertise in-house to be able to handle AI rules, more new jobs such as legal officers, chief data officers, and chief compliance officers, will be essential—but AI is not just something for people with technical expertise, and is not only about hiring technical talent and specialists. Malloch advocated for an overarching data-driven culture in organizations, involving and equipping all stakeholders with technical knowledge to understand how the technology interacts with their expertise.

Rather than considering AI only as part of a global race, panelists suggested that it may be wiser for the EU to see the current global context and competition as an opportunity to enhance cooperation with its partners and foreign, global companies, as these often build leading technologies that can enhance EU capabilities. Such partnerships should not be viewed as a zero-sum game. Maximizing the value of AI and spreading its benefits can best be achieved if the EU invests in its own strengths.

Breakout Sessions — Unleashing European AI Leadership in Strategic Sectors

Many industries are beginning to show how using AI can support innovation and unlock significant benefits. In health care, doctors are using AI to deliver faster and more accurate diagnoses, and researchers are using AI to discover life-saving drugs. In the financial sector, institutions are using AI to prevent and detect fraud. And AI is at the core of many promising solutions to create safe, autonomous driving and improve transportation networks. Three breakout sessions delved into the various ways organizations are developing and applying AI in healthcare, financial services, and mobility; explored the benefits AI applications can deliver; and considered the policies that can best support industries' use of AI.

Breakout #1: Unleashing European AI Leadership in the Healthcare Sector

The COVID-19 pandemic has led to a more widespread appreciation of the value of AI and data, and has catalyzed adoption of certain types of innovation and applications—especially in the healthcare sector. According to Mathias Goyen, Chief Medical Officer EMEA of GE Healthcare, there has been a clear wake-up call for the healthcare industry to build and invest in a more modern, digitized healthcare infrastructure. Patients' attitudes are also changing, as for example, they are becoming more amenable to virtually visiting their general practitioners.

There are countless examples of how AI can improve the economy and society in the most concrete ways. Panelists agreed that AI has great potential in terms of discovering new treatments and medicines, improving health and healthcare systems, and facilitating patient care through wearables and other tools that enable telemedicine and personalized healthcare. The healthcare sector is an area where AI and human intelligence can collaborate in real-time, to detect risk and coordinate complex needs.

Daniel Nathrath, Co-Founder and Chief Executive Officer of Ada Health and Goyen, advocated for a hybrid model whereby AI can augment the work of practitioners to improve care. Speakers mentioned that AI in healthcare is never about replacing or substituting doctors. AI can help diagnose disease more accurately and faster, and relieve humans from repetitive and boring tasks, hence freeing up time for clinicians to interact at a human level with their patients. The special relationship between the doctor and his or her patient will never disappear. Nathrath added that while telemedicine adds convenience for patients, it does not address a key structural problem in healthcare: The seven million person shortage in health workers worldwide.

Michal Boni, Senior Research Associate at the Wilfried Martens Centre for European Studies, and Jason Tamara Widjaja, Associate Director, Foundational Data and Analytics (AI) at MSD, discussed the importance of investing in approaches and methodologies that can improve data quality. For many commercial applications, techniques such as synthetic data can help. Another approach is federated learning, which has emerged due the difficulty of getting data in one place to train machine-learning models. Federated learning allows the algorithm to "visit" different data sources without centralizing data ownership into one place. It is still in its experimental phase and may not be applied to sensitive applications yet, but it is a promising approach. Nathrath called on policymakers to monitor the quality of various AI solutions through objective benchmarking tools, such as for symptom assessment, in collaboration with industry.

Boni triggered a discussion among panelists about key elements of AI use, including explainability, interpretability, and transparency. The panelists argued that explainability and transparency can drive wider adoption and acceptance, for instance by helping both patients and practitioners gain full confidence when decisionmaking or a diagnosis are supported by a deep learning algorithm. But there are technical and legal complexities that should be factored in. Widjaja mentioned that explainability may be difficult to enforce for all AI models, given their varying levels of complexity. It would be useless to provide an explanation that is too complex to understand for anyone who does not have a PhD in computer engineering, and irrelevant for business interpretability. While recognizing the importance of ethical principles, Nathrath cautioned against over regulation in Europe, which could lead to reliance on solutions from China and other markets, whose systems might provide less protection than innovations created in Europe. He suggested that providing patients with more rights to access data and the option of portability for their own health records can help achieve both interoperability and better protection.

Ceri Thompson, Deputy Head of the eHealth, Wellbeing and Aging unit at the European Commission's DG CNECT, explained that increasing the accessibility and availability of the data to capture more of its value is at the heart of the EU's policies. The EU is trying to overcome the challenges to address what it has identified as the need for European data processing and data storage solutions. The common European data space for healthcare takes priority, especially given the sensitive datasets involved, such as electronic health records, genomic data, cancer imaging data, and patient and disease registry data. A mine of data sits within public sector organizations, and they should make this more easily available and accessible—in a secure way so as to ensure trust and participation from all stakeholders, including individuals. Better data sharing for dynamic innovation requires more investment in robust technology infrastructure and clear governance frameworks and agreements, as well as the development of testing and experimentation facilities dedicated to the various data spaces.

Thompson referred to the Commission's recently adopted Data Governance Act (DGA), which aims to help individuals make their data more easily accessible. This is something that could be of interest to patients with particularly rare or chronic conditions, as they could benefit from the greater use of more data to enhance AI-based solutions in healthcare. The DGA will create data altruism organizations, entities whose role is to facilitate this type of data sharing, strengthen existing mechanisms for data sharing, and clarify and secure frameworks so that innovators know how and where they can work with data—an element which was missing during the pandemic and slowed data sharing in the healthcare sector.

Breakout #2: Unleashing European AI Leadership in the Financial Sector

While the financial sector is ahead of others in using AI, it is still at a relatively early stage. Yet AI already enables financial organizations to enhance their business operations through quicker and more precise problem-solving, allows real-time, risk-based fraud analytics, and improves the operational resilience of networks. It is therefore instrumental in building security and thus consumer trust. In this sector, there are both consumer-facing AI applications as well as internal applications such as automated credit scoring. All come with their particular sets of benefits and challenges, which require specific policy responses. In particular, there are concerns over how financial institutions use personal information in AI systems used for pricing insurance, predictions, high-frequency trading, or creditworthiness assessments, and how the use of large datasets in finance could raise issues such as the inability to explain why a loan is not granted, or higher pricing charged against certain population groups.

A common concern among both regulators and industry is how to adapt existing regulations to new technologies, and the barriers to adoption that stem from regulation. Roeland Van Der Stappen, Head of Regulatory Affairs for Europe at Visa, and Ondřej Kovařík, Member of the European Parliament for Renew Europe, recalled that the financial sector is already subject to heavy regulations, such as those involving fundamental rights, competition rules, and consumer protection for commercial practices. As a result, this industry would likely benefit more from guidance and clarity regarding how they can develop and use new AI-powered applications, and consistent supervisory interpretation of AI use cases. Jan Ceyssens, Head of the Digital Finance Unit at the European Commission's DG FISMA, responded that the Commission will provide EU banks and insurers with particular guidelines to clarify how to use AI after the new regulation is adopted in 2021. This approach does not mean financial institutions will be singled out as a high-risk sector for AI: Regulators will look at specific use cases, and examine which risk management tools are or should be used for different applications.

According to Linda Strazdina, Senior Consultant and Head of Technology Practice at Afore Consulting, access to quality data is key to unleashing the potential of AI technologies and financial services. The winners of the emerging digital financial services landscape will indeed be those who can best access, utilize, process, and analyze data. Panelists concurred that if Europe is to become a leader in AI adoption in the financial services sector, the EU will first have to address the fragmentation of its data market, as well as the lack of access to a large, centralized data pool, necessary skills, and venture capital funding. These roadblocks make it difficult to commercialize services and products across countries. One key opportunity the EU should seize in order to lead in AI is its ability to transform basic research and innovations into commercial applications.

Existing standards and safeguards for data protection and data privacy provide one way in which the EU has tried to address and improve in this regard. Another key success element is access to significant post-processing capacity, which is why the Commission wants to enhance the use of cloud services by financial institutions. The data strategy released earlier this year has set the tone for the EU to go further in this direction, by creating a framework for EU businesses to have access to data, including through a dedicated common data space for the financial services, with the aim to move from open banking to open finance.

The EU should ensure its AI framework tackles the growing limitations to cross-border data flows: These are important to data quality and to best ensure fraud prevention.

The challenge of regulation is to combine the objectives to provide a legal framework that would encourage innovation and investments that enable growth, while protecting consumers and addressing the different legal, social, and economical issues associated with AI. Kovařík recommended that to boost the use of AI in the financial sector, EU policymakers should also address the shortcomings that exist in legislation such as the GDPR, in particular with respect to public-sector data access. The pandemic has shown that while public institutions are gathering large amounts of data, these are not always easily accessible, or are not available at all for businesses to develop applications. There needs to be an update of the EU regulatory framework, but the bloc already has a number of rules that apply to and are fit for AI applications as used in the financial sector. A new framework should be sufficiently open and forward-looking to adapt to new challenges and the evolution of AI with agility. For instance, it should be able to respond to the ways in which AI adoption may continue to change the financial sector, the organization of the market, the offer and structure of financial services, the emergence of new types of products, the changing interactions between financial institutions, and the emergence of new players that are using AI.

Speakers briefly touched upon the importance of trust, accountability, and ethics in this sector. Companies have adopted governance and accountability structures to use data and AI responsibly. For example, the Visa Data User Council and Visa's model risk management committee bring together subject-matter experts and senior executives who developed their organization's internal guidelines on responsible data use. These were informed by the hundreds of frameworks that have been adopted across the world. Continued dialogue between regulators and industry, and the exchange and integration of best practices, provide a good way forward to promote innovation in AI.

Breakout #3: Unleashing European AI Leadership in the Mobility Sector

Panelists discussed AI trends in the mobility sector, and the various ways in which their organizations are already implementing AI technologies across a range of applications and initiatives. From traditional services such as routing (driving assistance), to public transport scheduling and fully

autonomous cars, AI technologies enable greater convenience, better planning, and more efficient logistical support on a much larger scale.

Private-sector collaboration with local governments facilitates solutions that help address challenges of urban mobility. For instance, by using AI and location data insights, they can gain a better understanding of the different patterns that exist in urban mobility and traffic, both of vehicles and individuals, and then optimize public transport to reduce commuting times or traffic jams. Companies developing AI technologies are co-creating smart city initiatives to address mobility challenges in a holistic way. According to Nacho Rodríguez Solís, Lead Data Scientist at Vodafone Business, this means that the focus is not only on optimizing urban public transport networks, addressing traffic jams or commuting time: It also involves larger sectors such as the tourism industry, and applies to broader aspects such as waste management, energy management, and even public lighting. Indeed, insights generated by location data can help optimize a number of different local city services. Initiatives are also about making these more accessible to citizens.

The mobility sector's digital transformation through AI is closely related to efforts toward greener urban mobility, which explains its rapid adoption in this sector. An interesting trend to follow given the impact AI will have on the adoption of electric cars is the availability of new electric car networks in cities. In addition, the mobility sector evolves within a fast-moving living environment; this requires real-time, two-way communication between the public and the organizations working with their data, and ever greater access to and availability of open data. This environment also requires faster connectivity for real-time responsiveness, as organizations increasingly need to guarantee that autonomous systems can be connected through the fastest possible networks, e.g., to rapidly transfer data to cars. As more data will be generated at the edge (on devices, on-site), many different devices, which have different requirements in terms of speed and data quantity, will have to be connected.

As the European Commission is considering legislation to cover so-called high-risk sectors, including transport and parts of the public sector, panelists shared concerns over the consequences of excessive regulations policymakers may apply to AI, particularly through type-approval frameworks, while the future role of the technology is unknown. Michael Kopp, Director of Data Science and Head of Research at HERE Technologies, asserted that there needs to be greater efforts toward smart, harmonized regulation, with common standards and contracts to facilitate data sharing within and outside Europe. Tighter regulation and scrutiny over data privacy have made it difficult for organizations to ensure they are fully compliant. Marian Gläser, Co-Founder and Chief Executive Officer at Brighter AI, explained how the GDPR's reference to anonymization for compliance is not entirely well defined. While organizations are addressing this by developing algorithms and techniques to process anonymized datasets and help companies comply, a lack of clarity and legal certainty will limit opportunities for data sharing and prevent the ecosystem from flourishing. Any new requirements or liabilities should be more specific and should not impose additional burden on sectors developing applications that present low risks to EU citizens.

There has been mixed press for automated driving technologies, their reliability, and robustness, which has impacted public support and raised concerns. But policymakers and all stakeholders involved in the development and use of AI should work to ensure everyone is on board with this application. Without public acceptance, no technology can spread through society and adoption of beneficial innovations will slow down. While the plans of the Commission to improve data access through a common data space for the mobility sector are welcome, Kopp and Solís cautioned that the competition is global, and if regulations foreclose or limit the participation of foreign companies

in its market, the EU will run the risk of coming up short. Data is a global market in essence. The ability to easily collect traffic patterns in the United States, to then transfer this data to Europe, and vice-versa, would greatly improve innovation, deliver safer and more convenient products, and drive the competitiveness of companies operating not only in Europe but also globally.

Panel — What Should Be in Europe's AI Legislation?

While there is no single regulation that applies to all AI, some of the EU's existing frameworks do cover some AI services and products—one example being the Product Liability Directive. However, according to Gabriele Mazzini, Legal and Policy Officer at the European Commission's DG CNECT, current regulations either do not cover some of the possible uses of AI at all, or only apply to the products but not the software or the tools specifically. Mazzini added that existing regulation may not cover some of the risks related to safety, such as physical harm, or to fundamental rights and freedoms.

The Commission's framework should not focus solely on the threats and risks of AI, but also on its opportunities. To this end, the Commission should avoid imposing burdensome obligations on companies developing or using AI. Axel Voss, Member of the European Parliament for the EPP Group, called for more balance between data protection and innovation and for the improvement of specific details in the GDPR (which to some extent limit AI innovation) to support innovation. He insisted on the need to speed up the regulatory process, as the EU should focus on catching up with a fiercely competitive global environment in which it already lags behind others, and still has to tackle unresolved issues such as the lack of investment, skills, and infrastructure.

"The EU needs to speed up its regulatory process, as we are already behind in AI. To survive in the digital world, we need to be stronger on the building blocks of AI, and faster, by coming up with a regulation soon." - Axel Voss, MEP

Mazzini agreed that a key factor for a successful implementation of the regulation is to have the right architecture and framework in place for testing facilities, such as via the network of digital innovation hubs. These are more hidden components of the EU's AI strategy, but are just as important as the conversation around the definitions of high or low risk AI.

Other important elements can contribute to effective regulation and innovation, including making broader public datasets more available to drive innovation, identifying options to collect and share more of both industrial and personal data (particularly to address concerns about bias and discrimination), and making sure member states coordinate and share their pools of data to compete as one, not in isolation. Furthermore, policymakers should work to ensure legal certainty for businesses, enhance citizens' trust in the technology by addressing their concerns regarding the use of AI, and provide national authorities with the right tools and processes to enforce rules. In particular, to implement the proposed AI framework, member states will need to mobilize additional governance and resource capabilities such as knowledge and expertise. For some existing AI-embedded products or sectors, countries already have authorities in place. According to Mazzini, member states could choose to afford additional powers to their authorities, or a supranational

authority could be in charge of coordinating member states' efforts. But this should not create unnecessary overlaps or add complexity to the business environment.

Many different types of systems using AI raise different policy and regulatory considerations, as well as different opportunities and challenges. This requires approaches for risk assessment and management that reinforce accountability. Audrey Plonk, Head of Digital Economy Policy Division, Directorate for Science, Technology and Innovation at the OECD, mentioned how the OECD's work aims to propose more user-friendly frameworks, using generally accepted baseline standards, to assess the impact and economic and social benefits of AI systems in terms of privacy, transparency, and access to research and data. These frameworks can help stakeholders contextualize and think through both the challenges and benefits of AI. Plonk shared in more detail how a forthcoming OECD classification will help in this respect.

According to panelists, as the different uses of AI pose different risks, the choice of a risk-based approach by the EU is sensible. An AI embedded in a self-driving car poses different risks to safety than an AI that is purely software-based. Jason Albert, Managing Director at Workday recommended that policymakers envisage the framework in terms of the nature of the AI, the impact of the decision on individuals, and the area in which a system operates. Some areas may require more oversight that combines compliance with existing rules and impact assessment, and self-regulatory measures. Rules should be flexible enough to be workable across different industries.

Non-regulatory approaches are desirable. The OECD developed tools and a structure providing practical guidance and sharing approaches, to help make AI principles actionable and context-based and assess which implemented policies are effective and appropriate based on the experience of others. This work includes process-oriented tools such as labelling schemes and documented frameworks focusing on the process.

"What we have so far is abstract. There is a real need at both EU and member state level to go from principles to practice." - Katharina Zweig, Head of the Algorithm Accountability Lab, Technical University of Kaiserslautern

An oft-cited issue in the conversation around AI legislation is how the framework can account for bias, discrimination, and fairness. Dr. Katharina Zweig, Professor for Computer Science and Head of the Algorithm Accountability Lab at the Technical University of Kaiserslautern, explained that reconciling what these concepts mean from a legal perspective and their day-to-day meaning is challenging because of the very diverse uses, measures, and definitions of these terms. As a result, understanding how to regulate and incorporate these concepts into laws will be complex. Indeed, while in computer science, there are 24 mathematical measures to quantify fairness, society may have a hundred different other ways of measuring fairness, and which are integrated into law represents only a fraction of those.

Hodan Omaar, Policy Analyst at the Center for Data Innovation, recalled that while algorithmic transparency can help non-experts understand how a system works, mandating transparency that would require companies to share details about their models could hamper their incentives to further develop these models and innovate. Albert and Zweig responded that if this concern is

addressed correctly, there should be a way of providing transparency without having to disclose proprietary information or trade secrets. At the same time, policymakers should not underestimate the costs that providing accountability and transparency could inflict on companies, and should therefore balance these requirements with the risks that the use of a particular algorithm entails.

Keynote: Jérôme Pesenti

Jérôme Pesenti, Vice President of Artificial Intelligence at Facebook, shared remarks on how his organization is using AI, and on the EU's process to create a legal framework for AI.

In his view, the EU rightly aims to ensure that its economy and societies can reap the benefits of AI, while building an ecosystem of trust around the technology. Indeed, the lack of trust in AI risks hindering its adoption and stakeholders should address it.

"Technological progress is unstoppable. Technology is also the one best place to tackle many challenges."
- Jérôme Pesenti

Facebook and many other companies have realized the mistakes of the past, and recognize the need to put responsibility at the core of innovation. Today, Facebook wants to place responsibility at the heart of how it develops and uses AI, and to participate in the policy process by bringing a constructive perspective and collaborating with policymakers and people.

Pesenti explained how Facebook uses AI, and how sophisticated algorithms determine what users see on the platform. The company also uses AI to implement the complex set of policies it has developed, including for online content moderation, and to connect, protect, and empower people by placing AI at the core of new experiments.

Open research is an important component of responsible development and deployment of AI. Facebook aims to do so by publishing all its research, including the codes, partnering with universities and various other organizations, and leveraging industry consortiums such as the Partnership on AI.

While AI will keep evolving and its capabilities will increase, Pesenti recognized that this involves risks. It is therefore critical for all actors to commit to the ethical guidelines and frameworks developed by the European Commission, the OECD, and other organizations, by adopting fair, accountable, robust, and privacy-respecting frameworks and integrating good principles into their processes and tools. For instance, Facebook has integrated greater transparency into its platform, as users can now understand why they see a particular post on their news feed. The company also ensures it works equally and inclusively, for example through its Fairness Flow system that assesses and measures whether the algorithms it deploys are biased for or against particular groups of people.

According to Pesenti, neither companies nor governments can achieve the goals of a responsible approach to AI on their own. Involving new people from various backgrounds and fields of expertise is important for the overall discussion. While stating that regulation plays a significant role, Pesenti

cautioned against the overlapping of existing and new rules. The new framework should reuse rather than add to existing laws such as the GDPR.

> "Many AI applications are impacting the world, and that impact will keep improving. We need to get it right this time." - Jérôme Pesenti

Finally, Pesenti shared his view that the EU and its partners, including the United States, have an opportunity to come together to ensure EU values are placed at the heart of their approach to AI, and advocated for greater collaboration.

Panel — Building Blocks for European AI

Panelists first discussed the EU's key strengths in AI, particularly its research capabilities, which benefit from significant funding. Global, non-EU companies are increasingly investing in Europe, for instance by opening new labs, investing in workforce, or engaging with academic institutions. Indeed, the EU is home to a thriving developer community and world-class universities with research excellence. In addition, the EU has better industrial data than others such as the United States, and is a world leader in robotics and low-energy consumption AI systems. The bloc has advanced policies for open data and aims to facilitate access to and availability of data, for instance by creating instruments to identify high-value public datasets, and make them accessible to businesses.

> "If the EU wants to do world-class AI, it needs to ensure as many companies as possible can implement AI as a tool. AI shouldn't be just for the few." - Aurélie Caulier, Senior Lead Public Affairs EU, Zalando

However, data availability remains an area in which the EU lags, partially because of the lack of coordination among member states with respect to public-sector data, and because the bloc struggles to convert its large research base into successful commercial applications. Some organizations may not want to share their data for reasons owing to intellectual property rights and innovation incentives.

According to Robert Dehm, Attaché Information Society and Telecommunications at the Permanent Representation of Germany to the EU, the diversity of the EU is also its strength. Member states have an opportunity to learn from each other, from Estonia's pragmatic and agile attitude towards technology adoption, to Romania's strong cybersecurity ecosystem and industry. However, Dehm recalled that the EU has yet to fully deliver the single digital market.

While companies may be early adopters of AI, they are investing significant resources in research for their solutions. The complexity of AI systems can be such that developing an AI use case can take months, and require specialized expertise within teams. Aurélie Caulier, Senior Lead Public Affairs EU at Zalando and Peter Lochbihler, Director of Public Affairs at Booking.com, asserted that to achieve this, and more broadly create an environment where AI can prosper, the EU should enable easier access to the right talent, including by overcoming visa restrictions. Lochbihler recalled that the EU should adopt a more opportunity-driven attitude that sees scalable companies as part of a winning equation.

"For too long, the EU has made it too difficult for small businesses to scale." - Peter Lochbihler, Director of Public Affairs, Booking.com

Caulier emphasized that companies need to digitize before even thinking about using AI, and this remains a transformative process many organizations have yet to go through in Europe.

Panelists see the EU's process as largely positive, including because it aims to pool resources, which represents an opportunity in terms of investments and research, as well as from a regulatory perspective. Industry representatives added that the responsible and ethical use of AI matters to their consumers and to the people developing and improving systems.

Daniel Castro, Director of the Center for Data Innovation, questioned whether the EU does have an edge in producing ethical AI systems: EU researchers are lagging behind their U.S. counterparts in addressing ethical AI. Among all the research papers accepted at the 2018 FAT/ML (Fairness, Accuracy and Transparency in Machine Learning) conference, only 5 percent of the authors were European, despite the fact that the conference was hosted in Stockholm, while 85 percent were American.

Speakers shared views on whether it will be through regulation, investment and research, or companies' practices that ethical AI continues to develop. Fernanda Viegas, Senior AI Researcher and Co-Lead of Google's PAIR (People+AI Research) Initiative, explained it should be a multi-pronged approach. It is first about building transparency into systems, designing explanation capabilities, and focusing on accuracy and performance—which requires resources and expertise. It is also a value question. Once the systems are deployed in the real world, accuracy alone is no longer enough as questions of transparency, explainability, and other concerns arise. Addressing these questions will require bringing various stakeholders into considerations of which values should guide decisions. This is complex given the multiple mathematical metrics that exist around principles such as fairness, each one of which comes with specific trade-offs.

Undifferentiated regulation would have a suffocating effect on innovation. To come to practical solutions, the EU should seek a mix of regulation and voluntary commitments, such as through the development of digital-trust product labels in dialogue with academics, society, and regulators. Organizations have shown they can be active and responsible players in the conversation around ethical issues, including by joining various networks of knowledge and innovation such as the European Commission's high-level expert group on AI.

"The level of openness that exists today in AI among industry players and universities is unprecedented…Most of what we create is open sourced, and we share it with the world."
- Fernanda Viegas, Senior AI Researcher, Google

Given that AI systems have increasingly migrated from labs to the market, scaling from small prototypes to applications that can affect society, industry has started to take ethical considerations into account from the inception phase. Many companies have set up their own ethical AI processes and layers as part of their review systems, and have formalized and shared these processes. For instance, Google created a guidebook with concrete guidelines to help developers address questions around fairness.

The EU's assessment list of ethical principles can be helpful to organizations, but they are no panacea: Some may not all easily apply depending on the organization, the system, or the use case, and may even be impractical to certain AI systems.

Panel: How can Europe Enhance Data Sharing Cooperation With its Allies?

Transatlantic data cooperation is unquestionably valuable. Panelists discussed how Canadian, U.S., and European companies and research organizations partner to develop AI technology, using data from both sides of the Atlantic, as well as what could improve their collaboration and ensure the continuity of data transfers. According to Robert Sinclair, Minister-Counselor and Deputy Head of Mission of the Mission of Canada to the EU, the COVID-19 pandemic has shown that research and business networks are well connected and can produce valuable cooperation on issues of common interest. There is ongoing dialogue around respective data and digital policy developments, and strong alignment among research agendas.

Various existing frameworks and fora reflect the holistic approach to AI governance that the EU and its partners are promoting: a multi-stakeholder, multilateral, and human rights-based approach, which involves government, private-sector, civil society, and researchers. Inclusive approaches to trade, such as under the EU-Canada Comprehensive Economic Trade Agreement (CETA), and multilateral organizations such as the G7, the UN, and the OECD, are the right ways to engage with like-minded partners, shape common norms, and develop frameworks for AI based on shared commitment to human rights and support for rules-based international order. The Global Partnership on AI (GPAI) is an example of how countries can advance a vision for a global AI ecosystem that aims

to protect citizens' privacy and data, enable responsible and trustworthy innovation, and foster diversity across AI as a field.

According to Guido Lobrano, Vice President of Policy, Director General for Europe at ITI, it is possible to design data transfer and trade agreements that protect the privacy of data across borders while directly facilitating data transfers. For instance, the APEC cross-border privacy rules system includes privacy certification for companies to demonstrate compliance with internationally recognized data privacy protections. It is a good example of a multilateral framework that is more scalable than other approaches, and does not affect national laws directly.

Another important theme included the urgency to fix transatlantic flows of data: The future development of new technologies, among them AI, and the functioning of all companies will increasingly rely on global data flows. Governments should therefore work to facilitate, rather than obstruct, the cross-border transfers of information, and support bilateral and multilateral commitments to preserve it. This means maximizing interoperability and the convergence of data governance regimes across shared values.

Since the EU-U.S. Privacy Shield was recently invalidated, panelists underlined the importance of working towards a balanced approach to mitigate the uncertainty this created for thousands of businesses. The recommendations of the European Data Protection Board provide a valuable toolbox of pragmatic measures to help stakeholders comply with the ruling. According to Lobrano, a longer term solution likely involves a form of international pledge or agreement capturing best practices about surveillance, privacy, and transfers, and including as many third countries as possible.

Sue Daley, Associate Director of Technology and Innovation at techUK, said that similarly, reaching a data adequacy agreement between the UK and the EU will be essential to avoid a disruption of data flows post-Brexit that would impact all sectors.

Data sharing, data access and availability, as well as the security and the quality of data are cross-cutting issues underpinning efficient data cooperation. Thorsten Hülsmann, Chief Financial Officer of the International Data Spaces Association (IDSA), suggested that the EU data strategy should include more concrete design principles for data spaces, and should use existing achievements from different initiatives as a basis for open data ecosystems. This can help data exchange in a secure and interoperable way.

Panelists discussed how to enforce data governance principles legally and technologically, to enable AI applications, enlarge data pools, and to ensure that all companies are incentivized to participate in data sharing. This requires organizations to identify common principles, values, and governance for data-sharing mechanisms, beyond those that exist within their own sector. Hülsmann advocated for data governance based on the findable, accessible, interoperable, and reusable (FAIR) data principles.

Data localization laws, speakers agreed, are an emerging concern. They pose a threat to developmental AI, and do not enhance data security or privacy. Forced data sharing is no solution either. Lobrano asserted that this should remain voluntary: Mandating data sharing could otherwise disincentivize investment in innovation, or put at risk intellectual property rights or trade secrets. Policies should rather incentivize both private companies and the public sector to make even more data available—for example, through data sharing schemes that are open and non-discriminatory, tax schemes, or compensation for the database shared.

Panelists also discussed the EU's recent Data Governance Act. The overall strategy and the next steps should aim to maintain Europe as a market that is open to innovators. Lobrano raised concerns over the proposed provisions on international data transfers, as they could introduce a new level of legal complexity. Creating an additional adequacy mechanism for personal data may not be the right approach, or should be scalable so as not to require the Commission to take action for every single third country.

The EU should approach data-driven innovation as a global opportunity to work with other countries and address the rise of China in the global technology race. Regarding the ways in which the bloc and its partners can revitalize the dialogue with China or Russia and avoid any further fragmentation and division of cyberspace, Sinclair recalled that to first build trust, there should be adherence to the rule of law and fundamental rights, which some countries fail to demonstrate.

Speakers concurred that as the AI ecosystem is global, and technology is not developed in regional silos, the EU agenda for AI should expand to be more effective. They highlighted the significance of commitments to international cooperation on AI based on the promotion of fundamental rights, partnerships with like-minded countries, and the recognition of mutual interdependence.

Closing Sessions

Keynote: Cornelia Kutterer

In her talk, Cornelia Kutterer, Senior Director at Microsoft, shared her organization's approach to responsible and trustworthy AI, and how it operationalizes relevant principles.

Because AI is different from other technologies in terms of its similarities to aspects of human intelligence, and because of its rapid pace of innovation, companies like Microsoft started to reflect on the use and impact of technology and AI on society from the ground up, fundamentally shifting their approach. This requires them to consider the context where AI systems are deployed, and the people who may be involved, and to do so by looking at both the technical and societal issues involved. Cross-disciplinary expertise and technical tools are critical to do this. In addition, companies like Microsoft should be thoughtful about how to resolve value tensions between benefits and harms, and between different systems' stakeholders.

"Responsible AI is about people first, in everything we built: What do people need? What are the benefits of systems shared across the ecosystem of stakeholders? What harms can we perceive and how will we mitigate or manage them?"
- Cornelia Kutterer, Senior Director, Microsoft

According to Kutterer, Microsoft has operationalized the values that influence their decisionmaking to consistently drive organizational approaches. To this purpose, Microsoft has established various governance systems such as a responsible AI office, published a series of research papers, and developed design guidelines and standards such as an AI fairness checklist to help engineering crews anticipate potential issues throughout the software development lifecycle.

Regulatory efforts around AI should start from one important assumption: Regulation will only be meaningful when tailored around certain risk scenarios. The first includes uses of AI that may directly result in the denial of consequential services or support to individuals in areas such as financial decisions, housing, insurance, education, recruitment, or healthcare services. A second category of risk scenarios involves the use of AI in ways that may create a significant risk of fiscal or even emotional harm to an individual, for example life or death decisions in military contexts, safety-critical manufacturing environments, clinical decisionmaking in healthcare, or almost any case involving children or other vulnerable populations. Finally, a third category of risk scenarios includes uses of AI in a way that may result in a significant infringement of human rights.

> "A governance system for AI should and must be agile to the changing nature of technology and business." - Cornelia Kutterer, Senior Director, Microsoft

While regulations should focus on those areas that pose the greatest risks for safety or fundamental rights, there should also be incentives for governance mechanisms and other self-regulatory measures for both high and low risks. However, establishing meaningful and impactful governance mechanisms for the development and deployment of AI is an effort that requires a significant investment of time and resources. Governments should therefore set up incentive mechanisms for SMEs that may lack appropriate financial and human resources to achieve this.

Keynote: Anna-Michelle Asimakopoulou

Anna-Michelle Asimakopoulou, Member of the European Parliament for the EPP Group and Vice Chair of the Committee on International Trade (INTA), referred to the work of the various European institutions on AI, including the European Parliament, which places a human-centric AI approach at the heart of their reflections and legislative work. The model she believes the EU should be (and is) advocating is one that seeks balance and provides flexibility, to allow businesses to innovate, scale, and compete while protecting citizens' rights and promoting trust in the technology.

As part of the work developed within the Parliament's Special Committee on Artificial Intelligence in the Digital Age (AIDA), Asimakopoulou and other MEPs will propose a long-term roadmap for AI in Europe, focusing on economic sectors. The first draft will be available in the spring of 2021.

> "In the new technopolitical world order, what is at stake in the AI race is nothing less than our core values of liberty, equality, and justice that underpin free and open societies." - Anna-Michelle Asimakopoulou, MEP

Asimakopoulou recalled that in the background, there is a fierce race to AI the EU cannot ignore and should urgently address. She particularly pointed to China's massive investments in technology, including AI, 5G, and quantum computing, its plans to dominate international standard-setting bodies, and the ways in which it skews international trade rules and shields its large tech companies from competition. She urged democracies to establish a robust alternative to China's autocratic

technosphere. Under Donald Trump's U.S. presidency, the EU had a "wake up" call and realized it was naïve to see China as both a strategic partner and a systemic rival, which could accelerate the bloc's response through various policies.

> "While digital sovereignty is a laudable response to external threats, weaponizing digital trade relationships will only take you so far, and it is very likely that it will eventually backfire. Simply stated, protection is a good idea but protectionism is not." - Anna-Michelle Asimakopoulou, MEP

The EU should, however, continue to promote collaboration with countries that share its values, international agreements, and multilateral rules. Asimakopoulou stressed that democratic nations around the world need to get past their fractious disagreements about privacy rights, data flows, competition rules, and taxation and come together to reach workable and mutually beneficial compromises.

Asimakopoulou cautioned against protectionist policies as a response to external threats, and recommended that the EU and the United States use these threats as an opportunity to consolidate their long-standing relationship, with democracy at the heart of this bond and as a guide in the digital world.

Keynote: Ricardo Castanheira

Ricardo Castanheira, Digital Counselor at the Permanent Representation of Portugal to the European Union, spoke on behalf of André de Aragão Azevedo, Secretary of State for the Digital Transition of the Government of Portugal. As the country prepared to take over the rotating presidency of the EU Council from January to June 2021, Castanheira shared Portugal's priorities, activities, and agenda, as well as the country's vision for European leadership in AI.

How will Portugal make the best of its presidency to push forward these efforts, as the Commission releases its proposal in the spring?

> "The EU should ensure democratic access to AI and data, in particular for SMEs. AI must be made available to all players, and incorporated by organizations of all sizes."
> - Ricardo Castanheira, Digital Counselor, Permanent Representation of Portugal to the EU

Castanheira highlighted the three principles guiding the objectives for Portugal's forthcoming presidency. These also broadly reflect the country's position regarding the EU's future framework for AI. First, Portugal sees the digital transition as a strong driver of economic recovery and a unique opportunity to strengthen the single market. Second, Portugal upholds as a key priority the digital empowerment of citizens and businesses sustained by a trustworthy and ethical digital environment. Third, Portugal aims to enhance the EU's role as a global digital reference.

The presidency recommends a regulation that is future-proof and flexible. It should be one that avoids excessive and unnecessary regulatory burdens and compliance costs, as these could hamper innovation and investment, while promoting high quality and trustworthy AI. Castanheira argued that what sets the European digital model apart is its strong ethical dimension. It is a competitive differentiator that makes the EU a trusted partner and an attractive market for other countries to invest in.

Portugal believes the future AI framework should adopt a risk-mitigation approach, especially when fundamental rights are at stake. Castanheira recommended a careful review of the definition of "high-risk" proposed by the Commission, given the diversity of AI applications that exist or may develop. For example, applications rolled out in the mobility sector are different from those used in healthcare. This definition should also be evidence-based.

In addition, Castanheira specified that Portugal advocates for a greater use of regulatory sandboxes—or "free technological areas"—where datasets can be trained and AI solutions can be tested to evaluate risks and to assess where regulation is needed. Castanheira also noted that policymakers should take into account the evolving nature of AI. What may be good rules enacted for today may not be fit tomorrow. With this in mind, the Counsellor pointed to voluntary schemes for low-risk applications as a welcome option.

To harness the benefits of AI, the EU should ensure there is public acceptance and trust in the technology. Portugal believes that, as the EU has been a pioneer in data protection, and as its standards have become a global reference, the bloc also has an opportunity to lead in AI if it creates a framework that boosts security, trust, innovation, and investment. But to achieve these goals, Castanheira recalled that prerequisites include a principles-based approach common to all member states, and an effective AI single market—in other words, regulation should aim to avoid any further fragmentation.

Given the many initiatives concerning data, such as the EU data strategy, the Data Governance Act, and the forthcoming Data Act, Castanheira called for coherence between the EU's AI regulation and the proposed data frameworks.

"The EU framework for AI should be a future-proof, flexible regulation, one that avoids excessive and unnecessary regulatory burdens that could hamper innovation and investment, especially for SMEs and startups, while promoting high-quality and trustworthy AI."

In addition, Portugal's priorities include a focus on digital skills. Castanheira referred to the challenge of the skills gap the EU is facing, and stressed the need to accelerate the upskilling and reskilling of the European workforce. Furthermore, the EU should work to ensure democratic access to AI and data, in particular for SMEs and startups.

The EU has a chance to take the lead in AI by creating a forward-looking and smart regulatory approach. It could then become a haven where startups can innovate and develop technologies in a trustworthy and business-friendly environment. At the same time, Castanheira cautioned, this is a global challenge that calls for global responses. The EU should not hesitate to also be a frontrunner within multilateral fora and ensure regional and global partnerships endorse the development of ethical and trustworthy AI.

The Road Ahead

The EU's proposed model and vision are to ensure that technologies support a more prosperous and inclusive digital society in general, and a responsible use of AI in particular. The pandemic has pushed European policymakers to be more ambitious in AI.

Europe is lagging in the global race for AI. In a poll of the conference's attendees, 91 percent agreed that Europe is not winning this race. However, not all is gloomy. The EU's diversity, research networks, world-class universities, and developer ecosystem, are some of the assets that the bloc can count on and should invest in. In addition, the EU performs well on a number of specific markets such as industrial AI, and at developing and commercializing technologies in industrial systems.

If it wants to be a leader in AI, the EU needs to build capacities by attracting talent, fostering networks of innovation, and boosting investment in R&D areas where European companies can scale up and compete. The EU should also consolidate an environment conducive to innovation, and avoid rules that will add more burden and costs on those developing the technology.

Many discussants agreed that talent, and talent retention in particular, will be key to the EU's success in AI innovation and use. In various sectors of the economy, the EU and organizations should promote AI and data science expertise.

Policymakers, academics, and industry representatives mentioned that the EU may not need a massive set of AI regulations, and that this would be undesirable to start with. While a regulation's role and objective should be about building trust, the conference's speakers recalled that the EU should not underestimate the costs that requirements such as AI transparency and accountability represent. The EU has a comprehensive legal structure, and policymakers should assess the extent to which existing rules (including privacy laws, labor laws, and more) already cover the technology before creating any more.

During the conference, experts emphasized that if the goal is to develop competitive AI that Europe can sell globally, then it cannot only work in Europe. The Commission should aim for closer market integration and regulatory cooperation with trustworthy international partners such as OECD countries.

The Commission's framework on AI should aim to establish legal certainty, ensure citizens' trust, and help national authorities properly uptake the regulation consistently across the EU. Overall, the EU should adopt AI legislation that enhances the digital single market, and that aligns with its global allies, such as through the OECD AI principles and the GPAI.

Healthcare, mobility, and financial services, are just a handful of sectors out of the many that are set to benefit hugely from advances in AI. Discussing AI in those sectors illustrated how both systems and the usage of these systems are very diverse, and how rather than regulating the technology, policymakers should examine the uses of AI in those specific sectors.

The conference's discussions evidenced the commitment of industry to develop fair, transparent, accountable, robust and privacy-respecting AI systems, and to use AI to connect, protect and empower people. They are investing in Europe because it has strengths such as a thriving developer community and world-class universities. Industry is also aware of the challenges incumbent in using AI, and many businesses are trying to steer digital progress in the right direction, such as by using more data visualizations to foster transparency and user understanding of complex AI systems.

The conference included conversations around data, a key element for AI. The broader digital ecosystem depends on cooperation to facilitate global data flows. Speakers agreed that it will be important to ensure secure and trustworthy data flows through common technical specifications and responsible governance, and to incentivize both private companies and the public sector to make data available.

Governments should also work to facilitate and promote rather than impede cross-border data movement. In particular, it is critical for the United States and the EU to come together to make sure responsibility is at the heart of digital innovation, and reduce business uncertainty. Speakers urged policymakers to come up with an early resolution for a new agreement between both parties, and to work towards a clear, consistent, and transparent data transfer regime that builds trust and confidence and enables technologies like AI. There is also hope that the EU and the UK will preserve their collaboration. Close partnerships with economic allies present an important opportunity to foster the development and use of AI by pooling resources and increasing investments to pursue common values.

Acknowledgements

We would like to thank the organizations who supported the European AI Policy Conference, and particularly our sponsors: Ada Health, Allegro, Allied For Startups, Booking.com, the European Tech Alliance, Facebook, FiscalNote, GE Healthcare, Google, HERE Technologies, MSD, Visa, Vodafone, Workday, and Zalando.

We would like to thank our knowledge partners: CEPIS, Internet Economy Foundation, ITP Europe, and Renaissance Numérique.

We would like to thank our media partners: EU Insider, EUReporter, MLex, and One Policy Place.

Our special thanks also go to our Program Committee members: Alex Cooke, Alina Gnerre, Andreas Constantinides, Aude Schoentgen, Claudia Canelles-Quaroni, Crispin Maenpaa, Elena Kell, Elizabeth Adams, Emanuela Girardi, Emmanouil Patavos, Fabro Steibel, Federico Menna, Fredrik Heintz, Kalin Tomov, Leonard Van Rompaey, Natasha Kalauz, Nicolas Moës, Ossi Piironen, Paul Adamson, Peter Spyns, Philip Weiss, Ramya Srinivasan, Roslyn Layton, Sakib Ershad, Susanne Hartig, and Wendy Hall.

ABOUT THE CENTER FOR DATA INNOVATION

The Center for Data Innovation is the leading global think tank studying the intersection of data, technology, and public policy. With staff in Washington, D.C., and Brussels, the Center formulates and promotes pragmatic public policies designed to maximize the benefits of data-driven innovation in the public and private sectors. It educates policymakers and the public about the opportunities and challenges associated with data, as well as technology trends such as open data, artificial intelligence, and the Internet of Things. The Center is a part of the Information Technology and Innovation Foundation.

contact: info@datainnovation.org

datainnovation.org