



Briefing | Slovenian Presidency and EC - High-Level Conference on AI: From Ambition to Action

Dods - Debate Summary

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Documents: [Agenda](#) / [Artificial Intelligence Act proposal](#) / [Updated AI Coordinated Plan](#)

On September 14 and 15, at the occasion of the Slovenian Presidency of the Council EU, the Slovenian Ministry of Public Administration together with the European Commission (DG Connect) organised a joint 'High-Level Conference on AI: From ambition to Action'.

The event follows up on the proposal for a Regulation laying down harmonised rules on Artificial Intelligence (AI Act) and the updated Coordinated Plan on AI, published by the European Commission in April 2021, as well as the previous editions of the European AI Alliance Assembly.

The conference featured experts and policy makers from EU Member States, third countries, international organisations, academia, civil society as well as business representatives. Each of the two days was introduced at the highest-level by European Commissioner for Internal Market Thierry Breton, Slovenian Minister of Public Administration Boštjan Koritnik, and Slovenian Minister for the Digital Transformation Mark Boris Andrijanič.

Please find below a summary of this event.

DAY 1: A FRAMEWORK FOR TRUSTWORTHY AI

Opening Remarks

Boštjan Koritnik, Minister of Public Administration, Slovenia, began his intervention by highlighting that AI has an important impact on the environment, economy, social welfare and the overall quality of people's lives. In recent years, developments in AI have been accelerating, as can be seen in areas such as medicine, transport, engineering, law enforcement and several others. During the pandemic, AI has helped develop vaccines against COVID-19. This does not come without risks as AI can also have a disruptive impact, not only at micro and macroeconomic level, but also as regards human rights such as privacy, freedom of speech, etc. Indeed, with AI the scale of harm can be much larger when compared to traditional technologies. A balance must be struck between supporting innovation and protecting people's rights and freedoms.

Slovenia wants to encourage a discussion on how to adequately regulate this area and provide sustainable support for future AI development. We are entering somewhat uncharted territory, and only through wide participation in an open discussion can we gain an understanding of the potential effects of

various decisions in the future. This is why this conference will stimulate a discussion on the open questions between policy makers and leaders in the research community, business sector and civil society. Having conducted research in AI for over 40 years, "Slovenia is undoubtedly the right location for such a conference", argued Minister Koritnik. He also drew attention to the establishment of the first International Research Centre on AI (IRCAI) under the auspices of UNESCO and to Slovenia's work on AI at both the Council of Europe at OECD level. They are also one of the founding members of the Global Partnership for AI (GPAI).

He concluded by underlining that dealing with AI is a global issue and that AI must serve humanity.

Keynote Speeches

European achievement and ambition in AI Trustworthy AI - the role of law and regulation

John Shawe-Taylor, Executive Director, IRCAI-UNESCO, highlighted that general human intelligence is less unapproachable than they had previously assumed, as can be seen from the advances in natural language processing.

He also drew attention to the OECD AI Watch, which is a very valuable source of global information. EU funded research has brought about networks of excellence promoting principled machine learning over 10 years, such as PASCAL; the CompLACS project on composing learning for AI systems; and the XLife project combining symbolic and sub-symbolic learning and cross-lingual language.

Machine learning has transformed AI as it seeks patterns in data rather than logical connections. Humans are experts at rationalising their actions after events and perhaps the emphasis on logic was too strong. In view of the crisis facing humanity, AI can no longer be viewed as a luxury but rather as a necessity for all countries to embrace. But the potential for negative impact is also very significant: manipulation, surveillance, weaponry, marginalisation, etc. While those problems are not new, AI enables scaling in new ways already shown to be effective. However, AI can also help defend against such threats. AI is being used to detect fake news and other sources of misinformation and can also help identify bias in recruitment.

Regarding the IRCAI, there is the ambition to create a PASCAL like international network of centres applying AI to sustainable development. AI can also be used for the measurement of SDGs and this holds the potential to revolutionise investment in SD also through Social Impact contracts.

Mr Shawe-Taylor then suggested that it is important to train people to develop an understanding of the difference between the human and artificial mind. Such a skill will require an understanding of computational thinking but also an understanding of how AIs tick, gaining insights into what they can offer and what they cannot. This must be embedded in a humanistic perspective. This understanding will lead to trust and counter negative myths. Europe can showcase how educating citizens to take control of AI and be creative in its positive application globally can usher in a new era of optimism and prosperity.

Christiane Wendehorst, Professor for Civil Law, University of Vienna, stated that all social and economic ecosystems will to a large extent become AI ecosystems. When we shop online, apply for a job or enrol in university we will increasingly be confronted with decision that have been made also with the help of AI. The products and services being put on the market will also be revolutionised – not only with typical AI products like recruitment software but also classical products like toys which will have AI components integrated in them. Europe can lead the way by helping ensure legal certainty and also user trust that they can safely rely on AI for their operations.

But is there a case for law and regulation when it comes to 'trustworthy AI'? Law can be part of it but in her view, we need a multilevel governance approach to AI, comprising:

- Technology: Making sure R&D efforts go into trustworthy technology and high ethical standards by design and by default;
- Society: improving digital literacy and awareness for the potentials and limits of the technology;

- Economy: making sure there is a market for trustworthiness and the right incentives are in place;
- Law: making sure there is accountability and effective public and/or private enforcement.

In April this year, the Commission published the AI Act proposal. This proposal did not come overnight as there were years of preparation, notably by the High-Level Expert Group on AI (AI HLEG). It was not clear what would be the best regulatory approach and various options were on the table. It could have been a "second GDPR" with principles, procedures, individual rights and remedies including liability. It could have also followed an ethics-based approach, as proposed by the European Parliament. In the end, the Commission opted for a product safety approach, and Professor Wendehorst supported this decision as AI can also be primarily conceived as a product which is put on the market by providers and needs to be safe. The proposal rightly takes a risk-based approach. The majority of AI systems that pose no or minimal risk will be permitted with no restrictions other than the ones which already exist. For the rest, 'unacceptable risk' (e.g., social scoring) will be prohibited; 'high risk' (e.g., recruitment or medical devices) will be permitted subject to compliance with AI requirements and ex-ante conformity assessment; and 'transparency risk' (e.g., impersonation, such as bots) will be permitted subject to information/transparency obligations.

She then highlighted that AI as a technology has several dimensions – the 'physical' and 'social' dimensions – and these dimensions have specific associated risks – safety risks and fundamental rights:

- 'Physical' dimension' – Better healthcare, fewer traffic accidents, less emissions etc. thanks to better products and services involving AI;
 - Safety risks – Death, personal injury, damage to property, etc. caused by unsafe products and activities involving AI.
- 'Social' dimension of AI – Better decisions, more fairness, more free resources for human interaction etc. Thanks to outsourcing of decisions and activities to AI;
 - Fundamental rights risks – Discrimination, manipulation, exploitation, loss of control, etc. caused by inappropriate decisions and exercise of power based on AI.

Professor Wendehorst then underlined the fact that the upcoming proposal will not be a "monolithic block in the desert" since existing instruments of EU law such as consumer law, the GDPR, product safety law, non-discrimination law, as well as the AI Act and the upcoming proposal on liability will all have to be seen and work in conjunction with one another. She noted that once the AI Act proposal was out, some stakeholders wondered why for instance consumer interests are not separately mentioned in article 5 or why there is not a separate article on non-discrimination, etc. The reason for this is because such laws already exist in the EU's acquis and the key issue is therefore how the AI Act will work in tandem with those other pieces of legislation.

Looking at aspects of the AI Act which could still be improved, Ms Wendehorst mentioned emotion recognition systems. She then outlined a few of the key challenges ahead for regulating AI in Europe:

- Squaring the circle of creating an innovation-friendly environment and ensuring a high level of protection;
- Ensuring legal certainty and coherence in a fast-growing field of European digital law;
- Striving for technological neutrality in order to keep regulation future-proof;
- Ensuring build-in flexibility to be able to adapt quickly to new challenges that arise.

Finally, she called on the EU to move from ambition to action and ensure that AI in Europe is used for the benefit of humanity.

Video Interview on "A Human-Centric Approach to AI" with Roberto Viola, Director-General of the European Commission DG CONNECT

Q: What can be said about the impact of AI on fundamental rights and safety?

Director-General Viola argued that AI is a blessing by making many of the things we do safer. "Life in general is a dangerous exercise and we should not confuse life's dangers with dangers arising from AI." AI can make diagnoses more accurate and therefore safer, for instance. Of course, like any innovation there is also a 'dark side' to it, and no one wants to be denied a job or access to schooling because an algorithm decides so. Therefore, principles such as explainability, transparency, performance are central.

Q: Sectoral legislation already exists. Why do we need a specific AI regulation?

Director-General Viola noted that if we look at devices used in hospitals for instance, while there is indeed legislation regulating safety aspects, we cannot tell what an algorithm is doing or assess its performance. The AI Act is a horizontal instrument which complements existing legislation and introduces a level of rules where those were lacking, addressing specific gaps.

Q: What are the key principles of AI regulation for the Commission?

Director-General Viola recalled that the AI Act proposal came after 4 years of preparatory work and stakeholder engagement. They are not regulating for the sake of regulating. The risk-based approach ensures that not everything is regulated and also that the level of regulation is adapted to the risk level in question.

Q: Some stakeholders disagree with the list of cases for the risk-based approach. How did the Commission come up with the list?

Director-General Viola stressed that high-risk applications pose a threat to people's lives and health, for instance. The list of regulated devices, such as medical devices, already exists in current legislation. This is one thing. Then, the Commission looked at potential risks to fundamental rights arising from algorithmic decisions. Mr Viola underlined that there is no problem as such in using algorithms in decisions in the fields of education, employment etc., but it must be ensured that the datasets are well selected, that there is no bias, that everything is well documented, etc.

Q: Will compliance with the new legislation not be excessively onerous for companies?

Director-General Viola argued that having clear regulation is better than unclear or patchy regulation. This is the first systematic attempt to have a regulation on AI and they must ensure that citizens' fundamental rights are protected and preserved. There will be no need for increasing the costs of producing software in 300% in order to ensure compliance, he said. Even incremental steps can make a huge difference. A good algorithm is much more likely to be accepted in areas such as public administration, for instance, and this means that rewards can also be reaped from a company's compliance efforts.

PLENARY SESSION - Political Panel on AI Regulation with the Presidency of the Council EU

Nataša Briški, Journalist, Moderator, noted that the AI Act proposal is now in the hands of the co-legislators, following the ordinary legislative procedure. The European Parliament has chosen a lead Committee (IMCO) and the Council has also started technical discussions on this file.

Boštjan Koritnik, Minister of Public Administration, Slovenia, stated that the EU should become a world player in AI and define what it wants from AI, in line with European values as enshrined in our legal and social frameworks. This will require smart, effective public policies ensuring common benefits and improvement of living standards globally – not just within the EU. The Presidency encourages discussion and searches for solution on ethical and regulatory approaches to AI. Human-centricity, ethics, human rights, all need to play a central role. A high level of trust in AI is a pre-condition for the successful uptake of AI in various segments. They should not limit ourselves to 'soft approaches', or even self-regulation as the impact of AI in our society is already apparent. We should not regulate AI technology itself but rather

its use and ensure legal certainty. Secure AI systems is very important especially in those areas which bring higher risks to individuals and society.

Brando Benifei, MEP and rapporteur for the AI Act file, noted that the Parliament is still discussing internally how it will organise the work on this file. They expect to start the drafting process in a few weeks.

It is of paramount importance to get this complex framework right. They must ensure a proper balance between innovation and protection from the intrinsic personal and societal risks that AI brings. By creating a single market for AI where trust is the key element, they will be able to attract talent and citizens will be able to fully explore the enormous benefits that AI brings.

Beyond the debate on the prohibited use cases, they need to think about the requirements for high-risk applications and how it would work in practice. The proposed framework for conformity assessment "needs some fixing", he argued. The resources needed for the enforcement of the regulation will also be looked at. This is not easy due to the characteristics of AI and its adaptive and learning nature. Instead, they should focus on promoting AI systems that are understandable and support and serve people and society and not the interests of a few.

Katrine Winding, Director General of the Danish Business Authority, Denmark, stated that trustworthy and innovative AI must be two sides of the same coin. They have developed advanced AI tools for the detection of fraud and financial crime. They should facilitate and promote innovation but also make use of the tools to ensure a transparent, responsible and accurate application of AI.

They must aim at clear and narrow concepts in the regulation when it comes to the definition of AI – this goes for the broad definition of AI but also when it comes to the classification of high-risk AI. It is important to clearly limit the high-risk category to applications which may cause serious risks. Indeed, the high-risk category should be an exception. Implementation is key from the very beginning. They need to think of practical guidance, standards, and regulatory sandboxes.

To promote the consumer take-up trustworthy AI, they should also think about incentives. An EU labelling scheme is one way to do this. She also drew attention to the launch in Denmark of a seal on IT security and responsible use of data. A trustworthy AI trademark could become a competitive advantage for companies, she stressed.

Christa Schweng, President, European Economic and Social Committee (EESC), began by noting that the following week they would be adopting their Opinions on both the AI Act and the Coordinated Plan.

Both the AI Act and the Coordinated Plan are key to generate the confidence needed for Europeans to commit to AI. Only by putting humans at the centre of any development and application of AI can they ensure that fundamental rights and the rule of law will be protected. Many Europeans fear that AI could lead to unfair discrimination arising of various biases. It is thus essential to develop the two AI ecosystems of excellence and trust.

The EU can lead the way at global level in developing human-centric, inclusive, sustainable and trustworthy AI.

Marina Bill, President, European Partnership on AI Data and Robotics (Adra asbl), underlined that industrial AI is crucial globally, especially for Europe. Putting AI together with edge computing, 5G or digital twins allows for more efficiency, quality, variety, productivity, and also opens the door to the development of new data driven business models. For SMEs, work is necessary also at the knowledge and competence level to ensure a quick uptake.

Q&A with panellists

Q: Why a general law on AI?

Boštjan Koritnik, Minister of Public Administration, Slovenia, stated that AI will have an impact on all areas and legislation and can help solve complex problems and will be used in services and products that affect fundamental rights and freedoms. Human rights need to be systematically and consistently addressed across the EU and this is why an EU approach to AI is necessary now.

Q: Excellence is also an objective highlighted by the Commission and presented as one of the AI ecosystems to be developed. How to ensure a balance between excellence and trust?

Roberto Viola, Director-General of DG CONNECT, European Commission, focused on the ecosystem of excellence. He recalled that the EuroHPC Joint Undertaking pools European and national resources to procure and deploy world-class supercomputers and technologies. In addition to the Vega supercomputer in Slovenia, EuroHPC supercomputers are being installed in 6 other centres throughout the Union.

He also mentioned Destination Earth, which aims to develop a high precision digital model of the Earth to model, monitor and simulate natural phenomena and related human activities. It will be the larger public venture when it comes to putting researchers and scientists.

Q: Does the AI Act proposal achieve the objective of addressing the risks of AI to the safety of citizens? In which areas might the Parliament propose changes?

Brando Benifei, MEP and rapporteur for the AI Act file, replied that the Parliament has appreciated the Commission's nuanced approach regarding the risk levels as this is an improvement from previous debates focusing on a binary 'high risk or no-risk' approach. Apart from article 5, they need to better assess the procedures for putting AI systems in the EU market, particularly for high risk uses. Currently, all but one of the use cases listed in Annex 3 are allowed to undergo an internal conformity assessment procedure, after which the developer can affix the CE marking and declare compliance. As stated by Executive VP Vestager this helps build volume and a culture of development and speed up AI uptake in Europe. However, seeing how impactful these use cases are on people's lives and fundamental rights he wonders if it is right to go down this path and only find out about defective or non-compliant system by markets checks when it is already too late, and damage has been done – as often happens with other harmonised products. They need to reflect on this and find a balance between different interests.

Q: Does the Commission proposal achieve the right balance between protection of fundamental rights and innovation. Is there really a trade-off?

Katrine Winding, Director General of the Danish Business Authority, Denmark, stated that striking the right balance will be one of the fundamental tasks and probably also the most challenging one but there is no trade-off as they must address risks and protect citizen's safety. Trust is essential to ensure the uptake. But the framework should also serve as the foundation of an innovation-friendly single market with scalability across borders. At this moment the definition of AI is too broad and encompasses even simple statistical systems. They should be careful not to stifle the market.

Q: Could be EESC provide a glance at how they see the AI proposal?

Christa Schweng, President, European Economic and Social Committee (EESC), noted that they recommend clarifying the current definition of AI as it raises questions as to whether all examples can truly be considered to be AI and whether some important AI techniques are not missing. On prohibited practices, some wording is unclear regarding unacceptable risk and this can render the identification of certain bans harder and their circumvention easier.

They fully agree with the prohibition of social scoring, but prohibition limited to public authorities is not enough. They recommend also including private organisations and semi-public bodies.

As regards biometric identification, such practices are very invasive and pose a number of risks to fundamental rights. They call for a ban on the use of AI for automatic biometric recognition in publicly

and privately accessible spaces with exception for authentication purposes in very specific circumstances.

Finally, they call for a complaints and redress mechanism to be included for organisations and citizens that suffered harm from any AI system. All persons should be able to challenge decisions taken solely by an algorithm.

Q: How do they see the impact of the AI regulation in the EU value chain?

Marina Bill President, European Partnership on AI Data and Robotics (Adra asbl), noted that the European Partnership was formed to help establish an ecosystem to facilitate the uptake of AI across Europe. They must ensure that the impact is positive, and a few things could help ensure this. The GDPR and other initiatives such as the upcoming Data Act also must be taken into account so that complementarity can be ensured. First, AI rules at EU level must build on the various sectoral regulations in the internal market. The definition of AI must also be very clear and specific. Low risk AI systems must be able to continue operating without too much regulatory burden. Finally, the framework needs to remain flexible and future-proof.

However, the importance of investments on AI should also not be overlooked.

Q: What can the Slovenian Presidency achieve in the Council on the AI Act file?

Boštjan Koritnik, Minister of Public Administration, Slovenia, stated that AI deployment entails high risks in areas such as justice and home affairs, internal security, migration, and fundamental rights. They will give special attention so they can include law enforcement and judiciary purposes for AI. Justice and internal affairs ministers will have the possibility to contribute to discussions. As a Presidency they need to act as an honest broker, and they will hear all the voices and interests as this will help ensure the success of the AI Act.

At the same time, they need targeted investment and a balanced regulatory approach so as to avoid stifling innovation.

They want to present either the first compromise proposal or progress report by December this year.

Q: Will the AI Act make the EU a global standard-setter for AI?

Roberto Viola, Director-General of DG CONNECT, European Commission, confirmed that this is their expectation, as was the case with the GDPR. The fact that legislation at EU level is a result of a balance and a dialogue between Parliament and Council helps avoid unnecessary friction and favours compromises. The Commission does have a red line: there will not be an AI regulation for justice, another one for healthcare, another one machinery, etc. The horizontal approach must be kept.

Another issue is standards, and here they need the engagement of stakeholders and like-minded partners to have common standards as regards the certification of AI systems as otherwise many of the things that are in the regulation will not function properly.

Q: Should anything be changed as regards biometrics?

Brando Benifei, MEP and rapporteur for the AI Act file, noted that this aspect poses great risks and compromises EU values. The indiscriminate power given to public authorities for intrusive checks for security and law enforcement reasons is the real problem. The very fact that the Commission puts it into prohibited practices means that it acknowledges the high risk it presents for privacy and democracy and the risks of control. The exceptions that are detailed in article 5 are also clearly taking that into account but are too extensive and easily interpreted in various ways by the executives. Indeed, the Council is having discussions on this issue. Ideally, they should ban its use altogether. In the hands of countries that do not respect the rule of law, this would be of particular concern.

Q: Coherence of implementation throughout the Union will be assured by the new AI Board, while at national level the competent authorities will remain responsible. Can this governance model work?

Katrine Winding, Director General of the Danish Business Authority, Denmark, underlined the importance of avoiding a duplication of procedures. Also, implementation at national level can increase assessment capacity when it comes to certification. There can be a competency gap and member states will need a sufficient transition period, though.

Regarding the AI Board, this is a fast-moving technology and grey areas will always be found. An important task for the Board will be the development of guidelines and also ensuring a coordinated approach.

Q: Does the proposal ensure that humans must stay in control of AI?

Christa Schweng, President, European Economic and Social Committee (EESC), stressed that the development of AI must be responsible, safe and useful. Machines must remain machines and people must retain the control of machines. What they believe is lacking in the AI Act is making it clear that AI should serve to augment human decision making and intelligence, rather than replacing it. The AI Act should provide that certain decisions remain the prerogative of humans, particularly in domains where decision have a moral component and a societal impact such as the judicial system, law enforcement, healthcare and education. An AI stakeholder summit will take place on 8 November 2021.

Q: Will the AI proposal help ensure the uptake of AI by companies and the public sector?

Marina Bill, President, European Partnership on AI Data and Robotics (Adra asbl), stated that it can be a start and that the idea of setting up an AI Board is definitely a step in the right direction to ensure proper governance and enforcement of the AI Act across Europe and to avoid fragmentation. However, they would also recommend the establishment of a permanent exchange platform between the AI Board and industry and make it permanent. They also welcome the possibility for the industry to draw up codes of practice to promote trusts and adapt to evolving nature of AI. Most important, while the AI Act is mainly focused on the mitigation of risks, AI is also a massive opportunity and they therefore welcome the introduction of regulatory sandboxes, which should be easily accessible for SMEs and start-ups.

The partnership between the public and the private sector is key for the funding of AI projects. Countries still lagging behind on AI development and deployment should be supported and fragmentation should be avoided. Finally, compliance should also be streamlined.

PLENARY SESSION - International Panel on Regulation with views from International Organisations

Lucilla Sioli, Director for AI and Digital Industry, DG CONNECT, European Commission, Moderator, noted that the AI Act proposal has an important impact also at international level as it is the first example of a comprehensive legislation on AI.

Cédric O, Secretary of State for Digital Transition and Electronic Communications, France, noted that France has been committed to the discussions around AI regulation at both EU and the international level. He mentioned the French initiative with Canada and the work for setting up the global partnership on AI.

There are two tracks in the discussion. They will discuss the ethical impact and the balance between opportunity and risks, but they will also have a discussion on the enforcement of the regulation.

Marielza Oliveira, Director for Partnerships and Operational Programme Monitoring, UNESCO, stressed that UNESCO advocates for a human rights-based AI. They organise AI forums, including regional ones in Africa and Latin America. They also help set international standards and she highlighted the upcoming Recommendation on the Ethics of AI through which the majority of the UNESCO members arrived at a

common understanding on what the values are and the need of instruments to assess the impact of AI systems. The Recommendation could be adopted this November. They also develop policy guidelines to support national initiatives in developing human-centric AI. Finally, they also help uncover blind spots in AI development, governance and use.

A critical part of what they do is to build capacities. They identified the need to duly inform judges, lawyers, prosecutors and civil servants in the judicial sector on the threats, opportunities and benefits of AI in the judicial sector.

Gregor Stojin, Chair of CAHAI, Council of Europe, underlined that their perspective is focused on human rights, rule of law and democracy and that AI is but one of the technologies in the progression seen in the past decades. He recalled that the Council of Europe addressed data processing in the 1980s and cybersecurity in the 1990s, for instance, and that the GDPR itself is a descendant of Convention 108.

CAHAI has a mandate of three years and in the first year they looked at the need for any legal instruments for any binding character, starting with the question "do we need one?" or if the existing instruments could suffice. They sought to identify potential gaps as well as the instruments needed to address them. At this point they are in the process of developing the elements for a potential legally binding instrument AI and the elements could be developed by the end of this year. This will be the basis for the negotiations on a new treaty on AI and negotiations should start by May 2022.

Andrew Wyckoff, Director for Science, Technology and Innovation, OECD, spoke of the OECD's AI principles and underlined the importance of a human-centric approach they embody. Trustworthiness, privacy and accountability are amongst the key principles. Principles are good and give boundaries within which to act, but we need to go beyond them. They are following various tracks. One is the Global Partnership on AI and bringing the principles into practice. Then they have the AI Observatory. They are trying to develop tools to cope with the risk-based approach and ensure that things are interoperable across the globe.

Michael O'Flaherty, Director, EU Fundamental Rights Agency, noted that they support the delivery of commitments. They look at use cases and at the reality on the ground. There are enormous risks and he noted that at an earlier intervention a distinction was made between human rights risk and physical risks. However, he would argue that physical risks are also human rights risks.

They have flagged issues such as facial recognition and, in a way, this has made its way into the Commission proposal. The risk of discrimination through the application algorithms is important.

They found that the primary driver of the use of AI is not quality but rather efficiency and this is important from a human rights perspective. There is also support for the idea of strong and independent oversight, he remarked.

Q&A with panellists

Q: Are some applications riskier than others? Is there evidence for that? Also, is there a trade-off between fundamental rights and innovation?

Michael O'Flaherty, Director, EU Fundamental Rights Agency, did not think that there was such a trade-off. It is empirically self-evident that different applications have different risks levels. For this reason, they welcome the pyramid-based approach to risk followed by the Commission by the proposal.

He also noted that there is often a misperception of what human rights are. Human rights are often perceived as non-negotiable, monolith of "you may not's". We saw in the context of COVID that in the context of the right to health there had to be limitations on the right to privacy, for instance. But such trade-offs happen on a daily basis. If trust rises, then investments can also increase. Corporate social responsibility is becoming ever-more important and promotion of fundamental rights can ultimately promote innovation.

Q: What can be said of the link between the respect for fundamental rights and innovation? Is there a common view?

Andrew Wyckoff, Director for Science, Technology and Innovation, OECD, agreed that the word 'trade-off' is wrong but getting the balance and squaring the circle is easier said than done as innovation inherently involves risk. Innovation can help us find new tools to address ethical and human-centric issues. The similarities in the positions of OECD member countries on this far outweigh the differences. He noted that in the US many states banned facial recognition and now they are working towards a more Federal approach via the Federal Trade Commission. We see in AI strategies the importance of investing in R&D and boosting skills to promote an innovation friendly environment. The key is to ensure that this does not result in outcomes that need to be fixed after they come into the market.

Q: What are the steps to ensure the coordination at the EU level and global level to develop a human-centric approach to AI?

Cédric O, Secretary of State for Digital Transition and Electronic Communications, France, said that there is a lot of issues that are embedded within the question. First, the philosophy of the GPAI is embedded within the OECD but is not limited to the OECD, with a simple approach AI being first implemented within like-minded countries. He noted that there are a lot of democratic countries that are not part of the OECD, so they wanted to build a framework in which democratic countries with attachment to that human-centric approach could be involved. He stressed the need for these kinds of places to discuss because the debate is wider than Europe.

As far as Europe is concerned, France emphasizes two points: (i) to build on top of the Slovenian Presidency's work on the AI Act; and (ii) we must learn from the insufficiencies of GDPR. He stressed the need for a harmonized approach, both in the legal and the enforcement points of view. He said that the enforcement of the GDPR could be improved.

He raised a second issue: the human rights approach is not contradictory to a balanced approach. He underlined the need to keep in mind in Europe that if we want to be part of the discussion, we need to have players and stakeholders in the business sectors that are at the table and that are part of what the Americans and the Chinese are doing. This is why regulation is heavily needed but it should always go along with innovation. He concluded by saying that we aren't currently completely part of the discussion as far as business is concerned and noted that the major players are Americans and Chinese.

He mentioned one last point that he noted was important for France: flexibility. He said that we can have solid and important principles, but the implementation should be flexible. Parts of the answer are in protocols, the kind of protocols you implement, and the technical reassurances that the ethical principles you want to abide by are respected. On that, he noted that GDPR can be improved as well as it might not open enough room for experimentation.

He concluded by saying that these were the three points to follow to build AI regulations in the coming years in Europe: harmonization, a balanced approach, and flexibility.

Q: UNESCO is promoting a global approach. How do you think we can best respond in such a complicated topic and area to the needs of the different countries and regions to foster the development of AI?

Marielza Oliveira, Director for Partnerships and Operational Programme Monitoring, UNESCO, said that to have a truly global approach, that fosters innovation while providing safeguards to protect human rights and fundamental freedoms, it is necessary to convene and listen to different voices to effectively balance the utility derived from AI and its potential for harm to different communities. She noted that UNESCO's advantage in this area is that it is a global organization that has a clear mandate in digital transformation. This enables them to leverage the many initiatives that are already taking place, identify common positions, and expand and complement them.

She mentioned that 117 initiatives were published in the last 5 years, but the geographic scope was limited, with 91 of them emerging from Europe and North America. But while these initiatives help us

identify common elements on which to build global consensus on the principles for AI governance and regulations, we need to bring in other perspectives, especially from stakeholders that are less heard in global dialogues.

She noted that UNESCO's draft recommendations on the ethics of AI benefited from a widespread engagement as 193 countries negotiated the text that led to a truly global document. She stressed the importance of taking this from the local to the global level, but also the need to go from the global to the local level. She underlined the need for norms, guidelines, capacities, and standards at regional and national levels, and this motivated them to conduct AI assessments. She mentioned the case of Africa, and the fact that the survey showed the existence of many common concerns around the region, such as issues of data protection, and training for youth. There are differences that offer entry points for areas of engagement and gave the example that in Cap Vert they want to use AI for fisheries whereas in Botswana, they want to use it for forestry. The importance of UNESCO in bringing these different perspectives and helping to mediate and to consolidate them to convene these different points of view is what enables a global perspective to emerge.

Q: How to reach consensus and avoid duplication of the efforts being carried out by many different organisations?

Grego Strojín, Chair of CAHAI, Council of Europe, said that we first need to identify the problem to solve, then identify the tools at our disposal. He noted that international organisations are tools and they have a certain mandate, capacity, competence, and proposed that we look at the work of these organizations as complementary, as these organizations consist of stakeholders with different interests.

He agreed with Cédric O's explanation that the democratic countries form the bulk of GPAI and noted that one of the Council of Europe's goals is to promote democracy even when there is a lack of it by creating standards. He noted that this is a difficult task, but that they are trying to see and convince the countries on what are the reasons for implementing some standards, regarding AI and other technologies, that would benefit their citizens in order to scale up individual human rights to the society level.

To deal with this, at the Council of Europe, we are trying to avoid discussing the issue that is technologically neutral, or that is in the competence of others, such as the work of the OECD in classification and terminology, and FRA regarding the insights into the examples of how AI has been impacting society. We use this to create a framework that would primarily obligate member states – not the industry or the users. This framework translates the general obligations that our member states already have, which is to protect and promote human rights, rule of law, and democracy, in the context of AI.

How to address the issues of design, development, research, and application of AI so that we identify the different actors, such as developers and designers, and how their roles and responsibilities can be translated into rights for citizens and obligations for the state? He noted that there won't be a complete consensus at the end, but there will be a unanimous body of work ready to be adopted in a legally binding instrument.

He concluded by saying that in the case of OECD, it's about the economy, and human rights is just a layer that we have to take into account among others, such as climate change and peace for example. They are doing what they can within the layer of their mandate, and his approach is to remind member states that while they are members, they have obligations towards their citizens.

Q: What can be said of the communalities and differences in the approach to AI by organisations like the G5 or UNESCO?

Cédric O, Secretary of State for Digital Transition and Electronic Communications, France, said there are not as many international initiatives on AI as there are on climate change, but there is political pressure from the people for better regulation. France's goal is to improve AI regulation at all levels. He stated

that there are different discussions in the frameworks like the G5 and UNESCO and they are not the same even with the same partners; some might overlap, though.

Michael O'Flaherty, Director, EU Fundamental Rights Agency (FRA), reacted that there cannot be enough human rights commitments. There is a set of human rights commitments across the different international organisations. But the organisations must talk to each other about the design stage. The collaboration between the FRA and Council of Europe at the design stage is excellent. But he noticed that as soon as the international organisations go into the implementation phase, they tend to do their own thing. The EU and the Council of Europe, for example, need to go into close collaboration for the groundwork, i.e., a close maintenance of contact. Some close collaborations are a must to avoid contradictions in the interpretation of the universal human rights commitments from the Council of Europe.

Andrew Wyckoff, Director for Science, Technology and Innovation, OECD, did not envy the role of Mr O role in navigating the many international AI rules. He talked about mutual trust stemming from the knowledge of the other's weaknesses. But at the same time to seize on the individual strengths to push forward the international AI agenda.

Marielza Oliveira, Director for Partnerships and Operational Programme Monitoring, UNESCO, reiterated the need for collaboration and complementary commitments. She tried to bring in groups that were left behind like indigenous people, disabled people, scientists, etc. because they can contribute to AI and are trusted by a wide range of stakeholders. She said that technological regulation has social implications. The risks of AI must be considered in an inclusive matter which fosters innovation in line with human rights. That is why she was proud about the broad international collaboration on the AI policy platform. Which will build upon the achievements and complement each other. They should avoid overlaps but also close the gaps.

Q: What are the conditions of a trustworthy international cooperation on AI policy?

Marielza Oliveira, Director for Partnerships and Operational Programme Monitoring, UNESCO, replied "cooperation, cooperation and cooperation". Also, sharing knowledge and a digital ecosystem that is suitable for the needs of all, which avoids the risks and mitigates the dangers.

Andrew Wyckoff, Director for Science, Technology and Innovation, OECD, replied trust building, which is about identifying pieces of the puzzle that they can assemble together to crack the problem. New groups like GPie brings new info into equation. There must be a foresight.

Q: How to foresee the changes and be prepared?

Gregor Strojín, Chair of CAHAI, Council of Europe, was not fearing AI but the humans. There will be no 'Terminator' or 'Matrix'. He was more concerned about inhibitors of innovation and demanded more transparency on the AI use by national authorities. This is not about the algorithm itself but signalling the usage of AI and its purpose especially when it impacts personal rights. In times of Covid some aspects of the GDPR have been ignored. There must be the possibility of redress for individuals to protect their rights in case of violations.

Q: What complementariness there is in the different international organisations on the protection of human rights in the context of AI?

Michael O'Flaherty, Director, EU Fundamental Rights Agency (FRA), advised not be intimidated by AI. There are myths like AI is too complicated, too expensive, that regulation will strangle innovation, etc. and every single one of them will be tackled. AI is made by, for and through humans, so it must be based on human rights.

Cédric O, Secretary of State for Digital Transition and Electronic Communications, France, highlighted the cooperation between international organisations and the need for a better enforcement of agreed rules on deep technology. The challenge for public authorities is the technological gap towards private

players developing new technologies that are a black box to everyone else. There has been progress on the definition of the ethical and technical AI framework. First, public authorities need to know what is happening online, and second, they need the power to enforce the law and be on par with private players.

International Reflections on Global Governance of AI / USA - Cameron Kerry, Ann R. & Andrew H. Tisch Distinguished Visiting Fellow, Governance Studies, Center for Technology Innovation, Brookings

Q: Which kind of global dialogue on big data and AI will we need to steer the impact of AI?

Cameron Kerry noted that AI operates on a global scale, with very large teams that need a lot of data and computing power. So, the answer needs to be similar and operate across borders and disciplines. Democratic and like-minded countries need to present a consistent and coherent alternative that harnesses the benefits of AI in ways consistent with their values.

Q: Which concrete steps on AI collaboration would you recommend?

Cameron Kerry stated that their recommendations are based on over a one year of conversations with government officials and experts. They focus on three areas. One is regulatory cooperation and there we see that there is a significant overlap in a risk-based approach that's reflected in the AI regulation. This allows them to look at common approaches to risk assessment, to common red lines for certain uses, etc. Communication is important and no unilateral steps should take place without that type of international conversation. We need to work towards a broad set of rules and flesh out the next steps in standards development around key issues such as auditing standards which could be important to enforcing regulatory policies.

Another area is joint research and development, which provides opportunities to do a number of important things at the same time and also tackle use-cases in necessarily concrete ways.

BREAKOUT SESSION – Liability

The Breakout Session on Liability primarily discussed the issue of a possible reversal of the burden of proof, where the views expressed by the participants were not aligned. Implications for insurance coverage and state compensation were carefully considered during the exchange, as well as the implications of products that the regulator has yet to consider. The message that emerged was that it is highly significant to not only look at the liability of producers, but also at other actors in the supply chain or in the lifecycle of AI products that could be liable.

Felicia Stoica, Deputy Head of Unit, Machinery & Equipment, DG GROW, European Commission, explained that this discussion is timely due to the fact that the EU is working full speed to develop an AI ecosystem of trust because in turn, trust will ensure a quick uptake of AI technologies. According to her, to this end, the EU has crafted a comprehensive agenda on AI and the Report on Safety and Liability adopted in February 2020. She explained that these two strands have culminated in the first package of legislative measures proposed in April this year, namely the AI Act and the revision of the Machinery Directive.

Ms Stoica pointed out that the AI Act and sectorial legislation set out ex-ante rules, but liability rules remain a key piece of the puzzle where damages occur. That is why these legislative measures will be followed by an initiative in 2022 on EU rules to address liability issues related to new technologies, including AI systems, for which there are still some questions to be answered, she said.

Ursula Pahl, Deputy Director General, BEUC, noted that AI systems can cause harm through accidents, impacting safety, health and property, but also there can be harms due to the abuse or misuse of AI systems to manipulate consumers, to impact their privacy, or through discriminatory decisions that

work out to the detriment of consumers. As such, Ms Pachl pointed out that there are new areas of damages and immaterial harm that need to be considered.

One classical problem that BEUC sees with AI systems is the steep increase in the asymmetry of information between businesses and consumers, which is also the classical *raison d'être* of consumer protection. However, she noted that in the case of AI systems, the damage that they can cause has brought a marked aggravation in this imbalance of market power. For Ms Pachl, the most important issue is identifying the one responsible according to the legal framework in case there is a harm caused by an AI-driven system. She highlighted that BEUC has already conducted a survey in nine Member States almost two years ago, which clearly showed that consumers believe AI can be dangerous because machines fail, while at the same time, it is very unclear for them who is responsible or who to turn to.

What BEUC sees in the current legal protection of consumers is that there is great legal uncertainty since the majority of AI features are not clearly regulated. Ms Pachl stressed that when consumers do not have clear rights, this means that they have no rights. According to her, in the current situation, BEUC believes that consumers do not have enforceable rights that would enable them to trust that they can be compensated and have access to redress.

Timotej Globačnik, Director, Research and Development, Gorenje, APPLiA, stated that connectivity and AI can bring smarter products with new and attractive features, products that can communicate with each other, learn from each other, and adapt to user behaviour. However, in order for this to work, many things need to happen at the same time, he explained, with one issue that makes things complicated is that there is sometimes a division between the part of embedded software that operates in the product and another part of software that operates on the cloud.

Mr Globačnik pointed out that the complexity of this becomes even larger and it gets more challenging for producers when it comes to testing the solution to find all the possible problems that might arise on the market in order to ensure that products are really safe enough for users to feel secure in using it in the future. Cybersecurity was another major issue that he wanted to raise, because some technologies that were considered safe in the past are not considered safe anymore. As such, interconnected systems need to have the capability to be updated in time in order to fix potential security problems when they arise, he said.

The last point he wanted to make was to underline that product standards and safety legislation should go hand-in-hand to facilitate on the one side the safety of the product and on the other to gain the trust of the final consumer.

Felicia Stoica, Deputy Head of Unit, Machinery & Equipment, DG GROW, European Commission, explained that in the past year, the Commission has tried to ensure a robust *ex-ante* safety legal framework, but the job is only half-way done, with the remaining issue being the liability regime. She then wanted to shift the focus of the discussion to solutions, more specifically on the type of measures and actions that are needed at EU level to close this gap.

Ms Stoica emphasised that the concept of 'defect' is central to the Product Liability Directive, where a product is considered defective if it fails to provide the level of safety that a person is entitled to expect. She thus asked the speakers what level of safety they consider a person should be entitled to expect, such as the cases of autonomous vehicles or other AI systems that respond to their environment and operate by learning and functioning through this input from the environment. The second question that she had was whether a producer can make use of the development risk defence when its self-learning products evolve unexpectedly or in unexpected ways.

Eleonora Rajneri, Professor, Private Law, Università degli Studi del Piemonte Orientale, Université Paris-Dauphine, noted that the application of the Product Liability Directive to an AI system presents different problems due to the fact in particular that AI systems learn constantly; therefore, they change their behaviour through data that the system receives from the outside world. According to her, this combination between autonomy and learning gives rise to risks that are not predictable in advance and are somewhat unforeseeable.

Ms Rajneri explained that the Product Liability Directive has a static approach, since it refers to defects existing at the time the product has been put in circulation. According to her, there are many articles in the Directive referring to this very precise moment, while from the point of view of development risk defence, producers are not liable if he/she proves that the state of scientific knowledge and technological know-how when he/she put the product in circulation in a way that it was not able for the defect to be discovered.

She pointed out that, even when adopting a more dynamic interpretation of the notion of defect, including potential existing defects when the product was put into circulation, the producer will raise the developer risk defence in any claim brought against him/her. What this does, Mr Rajneri explained, is to increase the length and the cost of litigation, while the original rationale of the developer risk defence is for it to be an optional tool by legislators to keep the producer safe from those risks that are unforeseeable and, therefore, not manageable.

However, she explained that the Directive, with the developer risk defence, charges the producer with strict liability rules for those risks that, although unavoidable, were statistically foreseeable in advance, which means that the producer is able to calculate the total cost of this liability, which makes it easily manageable through insurance or proportional increase of the price of the product. Mr Rajneri pointed out, however, that this management risk approach does not apply to unforeseeable risk.

Professor Rajneri explained that there is an alternative solution to deal with the cases of damages that are unforeseeable to the development risk defence in Germany with the law on pharmaceutical products. More specifically, she pointed out that this law does not provide the developer risk defence, meaning that the producer is responsible for collateral effects that were unforeseeable. At the same time, she continued, the law caps liability, allowing the producer to manage the cost because he/she knows in advance what the total cost is of this absolutely strict liability.

According to her, this solution has two advantages: at first, it cuts the litigation based on development risk defence, which is going to be consistent, and at the same time, it provides an answer to the need for social solidarity towards the victims that otherwise would have to bear the full cost of the damage that was unavoidable also for them. However, Ms Rajneri emphasised that the German law applies the same cap for all producers, regardless of economic size, which led her to wonder whether it would be better to make it proportional to the risk that they generate to society.

In her concluding remarks, she stated that there is a need for a single Product Liability Directive for all types of products, not specific legal provisions for AI systems because this would mean the fragmentation of the law and it would be in contradiction with the aim of fostering trust and legal certainty as pursued by EU Institutions. That is why in her view, this legal provision that strikes a balance between injured party and producer can be complemented with some specific regulation for the so-called liability of the operator, as suggested by the Resolution of the European Parliament.

Felicia Stoica, Deputy Head of Unit, Machinery & Equipment, DG GROW, European Commission, wanted to address the issue of the concept of 'burden of proof', because when someone seeks compensation for harm caused by AI products or services, the person has to prove different things: under the Product Liability Directive, the person has to prove that the product was defective as well as the causal link with the damage. She pointed out that the Commission's Report on Safety and Liability concluded that the burden of proof could present a serious challenge for victims, which is why she asked how this could be addressed.

Marco Bona, Co-founder, Pan-European Organisation of Personal Injury Lawyers, replied that the issue of the reversal of the burden of proof inserts itself among several other issues, such as in connection with the notion of 'defective product' and the notion of 'being put into circulation'.

Mr Bona noted that the suggestion by the Commission in its Report on Safety and Liability to review the reversal of the burden of proof in the Product Liability Directive requires a lot of careful consideration, he said, pointing out that the recent proposal by the European Parliament from October 2020 regarding the liability of operators, which also proposes the reversal of the burden of proof in relation to operators

of high-risk systems, ends with saying that operators shall not be held liable of the harm or damage caused by 'force majeure'.

Nevertheless, he wanted to point out that every time legal expressions like 'force majeure' are addressed, they are very complex and can jeopardise the harmonisation of the rules. The major difficulties in his view when it comes to AI system will be in terms of proving causation and what really happened behind a damaging event. For him, the best approach in this case would be to not make reference to concepts like 'force majeure' or other legal categories and think more in line with the concept of 'implication'.

To be more specific, Mr Bona stated that when it comes to the reversal of the burden of proof, a new rule would be needed whereby the injured party is called to prove that the system was implicated in causing the damage. It would then be up to the producer or other liable parties to prove that there was no implication of the AI system in the damage. As an example, he mentioned the road traffic accident liability system in France, where the concept of 'implication' works quite well, which is closely interconnected with the issue of insurance covering these damages.

That is why for him, it is important to consider the ramification for insurance coverage for damages if the burden of proof is reversed and whether this should go in the direction of social security systems or State compensation along the lines of compensation for victims of crimes. Lastly, Mr Bona stated that he fully agrees that this issue should be addressed within the framework of the Product Liability Directive without its fragmentation.

Felicia Stoica, Deputy Head of Unit, Machinery & Equipment, DG GROW, European Commission, wanted to know what regulatory options are currently being considered by the Commission. With regards to the burden of proof specifically, she asked if it will only consist of compensation claims against producers and manufacturers, or also against service providers and the deployers of AI.

Ioana Mazilescu, Deputy Head of Unit, Contract Law, DG JUST, European Commission, explained that this discussion is very useful because the Commission is currently in a process of reflections, which is why she said to not have any definitive answers because work is still ongoing on these issues. The next step for the Commission is to follow-up the approach announced in the AI White Paper, she said, to have a holistic view by looking at the whole of the liability framework.

Ms Mazilescu underlined that producer liability for defects is important because it is one of the harmonising instruments that the Commission has at its disposal, since there is a whole array of liability but only one route that victims can take, namely under national law fault-based claims and strict liability. According to her, it is very often that a person who suffers the damage would rather go against the immediate liable person, who is often the one operating the product, with only a few cases where they would go against the producer. In the large world of liability, there are many other parties involved, she said, which is why the Commission plans on looking at all of them, from service providers, operators, and developers, to producers and users, in order to understand how all of them are affected by AI.

The initial conclusion of the Commission is that this technology, when it has these characteristics of opacity and autonomy of behaviour, challenges the core of the liability concept, namely trying to find a person that is liable. Based on online questions, Ms Mazilescu specified that the Commission has no intention of giving legal personality to AI, which means that liability must always end up in a person that is liable, whether natural or legal.

The main issue with the specificity that AI presents, she explained, is that often the faulty behaviour that led to the damage is usually much more remote in time, much more complex to identify, with the Commission concluding that this amounts to a situation where the victim cannot provide this proof.

Ms Mazilescu said to have a lot of sympathy for the suggestions calling to clarify the Product Liability Directive, firstly because the Directive refers to all products, not just AI, which is why the Commission needs to also clarify what a product is, particularly relevant for software, and to clarify concepts like embedded software, since these are emerging in practice. About the burden of proof, she said that the difficulties do not come only from AI, because when looking at it from a product perspective, complex

products such as pharmaceuticals also raise concerns. As such, by reviewing the Directive, the Commission wants to be as holistic as possible when it comes to AI, but also as holistically as possible when it comes to the Product Liability Directive.

According to her, a reversal of the burden of proof or some sort of deviation from the concept is on the cards for the European Commission when it comes to complex products. At the same time, the Commission will also be looking at other elements that are relevant, such as the placement on the market, because for learning products, this is a very important aspect, as well as the development risk defence.

Ms Mazilescu highlighted that the regulatory option considered by the Commission is to limit or adapt the cases where this kind of defence might be used, even beyond the Product Liability Directive, because the difficulty of the burden of proof is that it impacts all cases that involve AI. As such, the Commission is reflecting on how to harmonise a reversal of the burden of proof when it comes to the victims of AI in other claims. In that situation, the idea is to not put the burden on the victim to prove how the AI works, she said.

Another element that she said has not been mentioned yet but is still very relevant is the relation with the AI Act, since it has defined certain terms and has proposed introducing certain requirements that are relevant for liability. According to Ms Mazilescu, the Commission's intention is to take this into account and allow liability to continue to play the role that it should in a legal system, namely both its compensatory and prevention roles. Liability should thus support compliance with the AI Act requirements, she said, and create a comprehensive ecosystem of trust. If a producer fails to comply with the requirements under the AI Act, then the reversal of the burden of proof could play a role.

Finally, with regards to strict liability in general, she noted that the Member States have very diverse regimes with different scopes and conditions. If the Commission will do something in this area, it will be limited to harmonising only possible elements for a small category of cases where values such as life, health, or property are at stake and where the Commission believes that especially third-party victims might need more protection. In conclusion, Ms Mazilescu noted that also the European Parliament's Resolution goes into this direction, but underlined that the Commission is still assessing all options on the table.

Felicia Stoica, Deputy Head of Unit, Machinery & Equipment, DG GROW, European Commission, wanted to know if the solution of the German pharmaceutical law could be applied for all products in order to avoid a fragmentation of the law only for some products, such as pharmaceuticals or AI products.

Eleonora Rajneri, Professor, Private Law, Università degli Studi del Piemonte Orientale, Université Paris-Dauphine, replied that it would be much better to have a single legal provision for all kinds of products and avoid fragmentation, but added that she is not sure whether the reversal of the burden of proof would be sufficient to solve the problem of access to justice that was also raised by President von der Leyen. According to her, there is a problem of asymmetry of information that might be solved with the reversal of the burden of proof, but this carries with it a cost: the more the product is complex, the more specialised expertise is needed, which is very expensive and most likely not affordable for the single victim.

As such, she underlined that, even if there would be a reversal of the burden of proof, this does not make the claimant free from the burden to pay for his own expertise in order to respond to what has been said by the defendant. For her, this increase in price is a problem that impairs access to justice. She then noted that the Italian law transposing the Directive has a peculiar legal provision, according to which whenever it is likely that the defect has been caused by the product, the judge might ask the defendant to anticipate the cost of the expertise of the claimant. While not being able to provide any data about the impact of this legal provision, Ms Rajneri stated that it is an interesting way to solve the problems relating to the asymmetry of information, access to justice, and the cost of expertise.

Felicia Stoica, Deputy Head of Unit, Machinery & Equipment, DG GROW, European Commission, asked if a producer should be made liable for a defect that emerges after a product is placed on the market.

Timotej Globačnik, Director, Research and Development, Gorenje, APPLiA, pointed out that cybersecurity is a complex issue because it changes through time: according to him, if a producer can provide proof that, at the beginning, he used the latest state-of-the-art technologies and did all the tests before the product is placed on the market, there is the question whether liability can be automatically put on the producer. If at some point in time some technologies are not considered safe anymore, the user has the option to update the product over communication channels, but some users may not want to do that in order to fix those holes, he said. As such, Mr Globačnik stated that it cannot be that liability is immediately placed on the producer, because it is an issue that needs to be looked at from different angles.

Felicia Stoica, Deputy Head of Unit, Machinery & Equipment, DG GROW, European Commission, wanted to know Mr Bona's view on the liability of social media platforms that use non-transparent AI algorithms to promote misinformation and hate speech.

Marco Bona, Co-founder, Pan-European Organisation of Personal Injury Lawyers, stressed that it is important to look not only at the liability of the producer, but also of other subjects. He recalled that the Commission's Report from 2020 indicated that there is a need to look at the liability of operators, while the European Parliament raised the issue of the liability of the operator in order to expand the scope of the reflection to avoid putting all the burden on the producer. Mr Bona suggested to possibly expand the compensation for the victims of crime also to these new situations, indicating also that recent rulings from the European Court of Justice have emphasised the need to expand the protection of victims also in terms of covering pecuniary losses. On the other hand, Mr Bona stressed that the State should not always have to pay for the fault of operators or producers who are not planning their products for the future. At the same time, the question of state compensation is unavoidable, he said, especially for cybersecurity crimes.

DAY 2: EU AS A HUB FOR CUTTING EDGE AI

Introduction

Mark Boris Andrijanič, Minister for the Digital Transformation, Slovenia, underlined the importance of an innovative and AI-driven Europe. Europe excels in creating and exporting forward-looking regulation, as seen in the GDPR but also environmental legislation. But we are not nearly as good in creating and exporting digital services. The US and China have shown more economic dynamism and progress. Also, only one 'unicorn' out of eight is European.

We need to ensure safety and uphold fundamental rights. But we must also create an environment which boosts digital innovation. We must complete the digital market so that start-ups can scale up, and boost research funding, bringing the universities and industries together. We must be able to raise capital to attract talent. We must also harness the potential of AI to safeguard the lives of citizens.

The EU is making a lot of progress in many of these fronts. The creation of the announced EU single market for data will be a game changer for European development of AI.

Establishing a values-based foundation will be crucial to show citizens that AI is trustworthy and human-centric. Increased transparency and oversight will benefit everyone – including businesses in the short and long term.

AI-driven innovation will be key in areas such as healthcare, transportation or the green transition. We must invest much more in training and re-skilling programmes. They wish to explore better ways of increasing funds in AI and R&D. They will also promote green AI and strengthen AI education.

Video Interview on "How to boost European AI" with Thierry Breton, European Commissioner for Internal Market

Q: How can European AI flourish and how can we ensure that AI is not only used but also made in Europe?

Commissioner Breton stated that, when it comes to AI, Europe has the necessary assets and strengths, such as industrial applications. AI research is also very strong in Europe, and so is HPC. Europe must now not lag behind.

The EU has its single market – the largest in the world. The Commission is promoting enabling conditions for AI development in the EU, in a SME-friendly way. The updated EU Coordinated Plan on AI indicates the way. Acquiring, accumulation and sharing AI knowledge via a governance model. Taping into the potential of data, Fostering EU computational infrastructure.

The AI, Data and Robotics Partnership is one of the European Partnerships in digital, industry and space in Horizon Europe. This Partnership will drive innovation, acceptance and uptake of these technologies. Testing and experimentation facilities must be fully available for the development of AI.

He also announced the launch of the member states expert group which will assist in the roll out of the Coordinated Plan.

Q: How can the EU remain competitive?

Commissioner Breton stressed that the development and market uptake of AI both go together. Currently, the uptake is lagging behind. The Commission proposal for the AI Act aims at, inter alia, ensuring legal certainty. Another reason for the low uptake is the lack of information and this can be particularly challenging for SMEs. The network of Digital Innovation Hubs should help in that regard. The updated Coordinated Plan identifies a number of areas for action.

Q: Can the AI Act slow down AI development and innovation in the EU?

Commissioner Breton argued that the opposite will happen; it will foster development in the EU, especially for SMEs, as it ensures legal certainty. Companies can establish credibility in relation to the risks associated to AI, including start-ups and innovative SMEs. Having multiple national jurisdictions would stifle AI development in the EU and SMEs would suffer the most. Also, they calculate that only 5-15% of all AI applications would be affected by the AI Act.

We need both data and AI as one reinforces the other. The future "tsunami of data" can only be explored with the help of AI and without this data AI would lose a lot of its potential. A Data Governance Act was already presented last year, and the Data Act will be proposed later this year. The data value should be allocated in a fair way and usage rights should be clear to people and businesses. This all should incentivise the use of data in Europe. He also highlighted the setting up of sector specific data spaces and the creation of the European Alliance for Industrial Data, Edge and Cloud.

Q: Should we look at a global solution?

Commissioner Breton noted that there's been a huge interest in the EU's approach. Many third countries provided input to the public consultation to the AI White Paper. The Council of Europe, the OCED, UNESCO and other organisations have developed or are developing approaches to AI, but none is as advanced as what is being done in the EU.

They are engaging with the US via the Trade and Technology Council (TTC) Working Group. We should not underestimate the advantage of the EU making the first move.

Panel Session on Enabling Conditions for AI in Europe

Carme Artigas, Spanish Secretary of State for Digitalisation and Artificial Intelligence, stated that AI is a disruptive technology with huge transformation potential and an essential vector for the digital

transformation. The Spanish government has published its national AI strategy which includes development missions to integrate AI in strategic sectors of the national economy; a national observatory; and a charter of digital rights which includes rights for AI and new technologies.

Ieva Martinkenaite, Moderator, Head of Analytics and AI, VP Telenor Research, stated that Europe can become a world leader in AI. To drive excellence in AI research and innovation, bold actions are needed to ensure scale in the update of various AI technologies. The importance of computer infrastructure and policy mechanisms was also highlighted. She also mentioned an ethical and human-centred AI as a new development for the new digital decade. She then addressed the various panellists.

Q: How can we mobilise AI talents to join force and make Europe an AI powerhouse?

Antonio Krüger, Professor of Computer Science and CEO of the German Research Centre for AI, noted that Europe has a strong scientific foundation on AI. It has shaped AI for many decades and always had the potential to attract talent. The US and China made great efforts to ramp up their scientific research resources and in Europe we must also strengthen our scientific foundation as well. To attract talent, we must enable them to work in an AI ecosystem that allows them to develop start-ups and access capital.

We need a 'Lighthouse for AI' which needs to be a physical place with the necessary infrastructure and that showcases our scientific excellence. We must develop European collaboration. A human-centric approach to AI in Europe is a great starting point and this should be one of our main directives as it will help attract talent.

Q: What about infrastructure?

Jan Jona Javoršek, Head of Networking Infrastructure Centre, Jožef Stefan Institute, mentioned the EuroHPC Joint Undertaking, which has allowed multiple EU countries to invest together and develop supercomputing centres. On the other side of this there is data. The European Open Science Cloud (EOSC) is a different initiative and it's good that both have great research communities working on them. Data must be available in the centres that are to process it. They must ensure enough capacity to preserve the data, software models so they can be compared, re-run, etc., instead of simply inserting data and then having the outputs. A more scientific approach is needed.

Q: What is the role of data?

Yvo Volman, Acting Director for Data , European Commission, stressed that we need to have the data available, as it is the basis for AI. We must tap into the potential of industrial data and the Data Strategy seeks to do this. Data infrastructure, the skills for handling data, and the common European data spaces are all key elements and building blocks. The Data Governance Act aims at regulating intermediaries that bring the supply and demand of data together.

The Data Act will look at the more substantial matter of who can do what with data and access rights. It is important to make more public sector data available for use in AI and training algorithms in general. Data sets on statistics, mobility, etc. can be of great use. They will also support the creation of common European data spaces. A healthy and competitive data economy must be built. Data must be used in line with European values and with this data available they will be able to attract and keep talented people.

Jo De Boeck, Executive Vice President & CSO, IMEC, stressed that AI will be everywhere. We have to bring everyone in. Explainability is very important for the public and the latter can learn that this is an opportunity. The benefits of AI must be reaped in Europe. Testing and experimentation are also key. Data and algorithms don't go without hardware and for this reason the EuroHPC JU is a key element of the ecosystem.

Q: Commissioner Breton mentioned that in order to build an AI powerhouse in Europe the ecosystems of excellence and trust must both be promoted. How can we develop an inclusive and competitive AI community?

Miapetra Kumpula-Natri, Member of the European Parliament, stressed that the boosting of AI is not an end in itself as the purpose(s) are very important. Governing the data in the right way is crucial as currently European actors lack data. Respecting European values is also key.

On the issue of talent, this is important, and she also mentioned the issue of gender balance in the tech sector. Developers could be inclusive societies.

Q: Europe has excellent research capacity and universities. The problem is moving this excellence to the market. What are the main bottlenecks to be overcome?

Jo De Boeck, Executive Vice President & CSO, IMEC, said larger companies have a greater absorption capacity to bring research and know-how into their own teams. The training aspect is very important and so is bringing AI researchers into the industry. Many are demotivated as they see that the support and investment capacity of the company is too low because of the return of investment not being clear. The start-up community and SMEs' core businesses are being transformed by AI. So, training and R&I are both necessary.

Q: What are the top priorities to get access to data and good collaboration opportunities between companies to develop AI?

Yvo Volman, Acting Director for Data, European Commission, argued that first we need to tackle the lack of trust. He clarified that when they mention data sharing it does not mean that all data will be made available for free. Another big issue is lack of legal certainty. The question of who can access and use what data to maximise the value of data for society will be addressed by the Data Act. A third issue is interoperability as data can be used within sectors and also across sectors as otherwise, we are creating silos. He noted that in the agricultural sector there is a code of conduct and people in the value chain come to agreements on how data can be shared. Data altruism also allows companies and people to share their data on their own initiative for the common good.

Q: What are the plans for the EuroHPC and how is the converge of AI and HPC transforming industrial applications? Also, what are the key bottlenecks?

Jan Jona Javoršek, Head of Networking Infrastructure Centre, Jožef Stefan Institute, noted that the Vega supercomputer was built in Slovenia. The best aspect for him is that the countries building the machines are interested on how the machines are being used and by which users. There is a fast turnaround of ideas and re-design. This has spurred a new way of talking to the vendors, who have become more flexible and are also talking more with each other. The biggest bottleneck is the lack of infrastructure experts, computer engineers and system administrators who can handle HPC and very large data lakes. Often, they cannot offer competitive positions to these people, he regretted.

Q: Public awareness, infrastructure and skills are all key issues. HPC experts need that capacity to be in place. What can the Parliament do to ensure that these skills are being developed since primary school?

Miapetra Kumpula-Natri, Member of the European Parliament, saw this issue as a triangle comprised of (i) infrastructure, (ii) data, and (iii) people and knowledge. The Commission President has also highlighted during her SOU speech the importance of digital skills.

Q: How can we measure our level of success in building an AI powerhouse in Europe? Also, what concrete demands can we submit to policy makers?

Antonio Krüger, Professor of Computer Science and CEO of the German Research Centre for AI, stressed that Europe is doing quite well in research and there are scientific metrics to measure that. In Europe we must enable innovation, create new businesses and improve the market share. We have the strong asset of industrial data, also coming from SMEs. We must now bring our innovative research and our data potential together and from this synergy good things will come.

Regarding recommendations to policy makers, he mentioned the importance of having strong European Research Council programmes; strong collaboration between research institutions and industry; and develop a European AI Powerhouse as a central place where people can meet.

Q: What concrete next steps are necessary to enable AI talent to have access to high quality industrial data and testing environments?

Jan Jona Javoršek, Head of Networking Infrastructure Centre, Jožef Stefan Institute, mentioned fostering and attracting talent; having explainable AI; and ensuring interdisciplinary work between science, industry and policy making.

Miapetra Kumpula-Natri, Member of the European Parliament, disagreed with having a single and central 'AI Lighthouse' as proposed by Mr Krüger since Europe needs to develop networks. We must also attract European talent.

Jo De Boeck, Executive Vice President & CSO, IMEC, noted that high ambition attracts high levels of talent and this is very important. We must bring AI and the necessary information to European regions and localities to ensure the necessary acceptance and uptake.

Yvo Volman, Acting Director for Data, European Commission, stressed that Europe can be at the forefront of AI development. The Data Governance Act must be adopted as soon as possible, and the co-legislators are indeed moving fast. The upcoming Data Act will also need to be adopted fast and the various data spaces need to be set up.

The link between the data, AI and robotics communities is also key and they must bring industry and research together. The new European Partnership on Artificial Intelligence, Data and Robotics brings together the three communities which in end are actually "a single, large community".

Antonio Krüger, Professor of Computer Science and CEO of the German Research Centre for AI, clarified that having decentralised centres that support local industry is also very important. But when it comes to attracting talent then the central AI Lighthouse, he proposed would be beneficial. Both are needed, he remarked.

Keynote Speech

The potential of human-centric AI innovation for healthcare and wellbeing

Nora Khaldi, CEO & Founder, Nuritas, stated that people are living longer but live longer with diseases and this is a negative development. There are burgeoning costs and the health systems, as they stand, are not sustainable. The challenge is therefore living healthier for longer.

She then explained that nature holds many of the solutions to treat and even prevent diseases such as diabetes. The problem is that discovering natural health promoting functional ingredients takes decades as there are trillions of molecules. AI allows them to move from concept to market in less than 2 years and also to develop different products in parallel. She then outlined what she sees as the major drivers in enabling AI conditions in the healthcare and wellbeing area:

- **Talent:** Talent is hard to find. It is difficult to compete against multinationals for the same pool of talent. Incentives targeted towards indigenous growing companies are important.
- **Funding:** Tech companies can rapidly move from prototype to sales. In the health area however, this is much slower. AI can fasten the cycles, but they can still remain much longer than the usual pure AI tech cycles. This is due to regulation, clinical trials, etc. Funding schemes, supporting these AI companies with longer cycles, is a necessity. Without this Europe will fail to maintain any companies using AI in these regulated areas such as health.

- Partnerships: Building a portfolio of partnerships with larger multinationals is key to the success of AI companies, especially in health. Building ecosystems that foster those collaborations to happen is not a nice to have but a must if the EU wants to develop an AI ecosystem.

International Reflections on AI and Climate Change: CANADA

David Rolnick, Assistant Professor and Canada CIFAR AI Chair in the School of Computer Science at McGill University and at Mila - Quebec AI Institute, stated that there is a wealth of opportunities for AI and machine learning to help tackling climate change, and there are four main roles that AI can play. First, distilling large amounts of data into actionable information. Second, optimising complex systems, such as reducing the energy to heat and cool a building, or improving the efficiency of freight transportation. Third, improving predictions, such as near-term forecasts of solar power generation that help balance the electrical grid. Fourth, accelerating scientific modelling and discovery, for example, by speeding up the design of better batteries and photovoltaic cells.

However, AI is not a silver bullet. It can be a useful tool, but it's just one in society's toolkit. AI has an impact when it helps fixing existing bottlenecks or provides information to guide policy, optimisation needed by the power sector, and so on. Some problems don't require AI at all to be solved. The impact of AI depends on how it is used and can actually increase greenhouse gas emissions as seen from its use in oil and gas extractions. In some cases, too, by improving efficiency, AI can lead to rebound effects – for example, if self-driving cars make driving easier then this can result in people driving more.

At the Mila - Quebec AI Institute, he works with partners across many sectors to develop innovations in machine learning and AI-driven solutions for problems in climate change. They use AI to optimise electrical grids and use AI-enabled camera traps and satellite imagery to understand how biodiversity is changing.

BREAKOUT SESSION – Financing AI Innovation

The discussion focused on what has worked well in the past and what can be expected in the future of financial instruments, particularly on how to foster innovation while ensuring the respect of fundamental rights and cooperation across Member States. While there were encouraging messages in terms of developments in that direction, it was underlined that financing needs to be adjusted to the demand of science-based VCs and that there is significantly more need for capacitation and ecosystem development, since not everything is about injecting financing in the market. The discussion also touched upon concepts such as democratisation to understand and speak AI language among the business community, as well as AI literacy and helping the ecosystem understand better how to implement and benefit from AI. Finally, those who intervened generally indicated that financial schemes need to be adapted to these new types of technologies.

Minerva Elias Franquesa, Senior Manager, Innovative & Alternative Financing, European Investment Fund, noted that the EIB recently published a study on Global AI and Blockchain Landscape, addressing among other topics the EU's positioning on these technologies vis-à-vis international geographies, while also clearly identifying market gaps in terms of debt and equity financing. In view of that, she asked for a presentation of the main findings of the study as well as on the market failures and barriers that have been identified.

Shiva Dustdar, Head of Division, Innovation Finance Advisory, European Investment Bank (EIB), recalled that the EIB's study 'Artificial intelligence, blockchain and the future of Europe' was published in June this year. The EIB looked at the landscape from four vantage points, she said: the demand side, the supply side, market infrastructure, and an ecosystem perspective. According to this study, there is generally a low investment volume in Europe: of the roughly €25 billion invested during 2019 in AI and blockchain technologies globally, Europe's share is only 7% compared to roughly 60% in the US and 16% in China.

According to Ms Dustdrar, this 7% corresponds roughly to €1.75 billion, but when looking at this from an annual investment gap perspective, there is an 80-20% split between AI and blockchain, with a great need for more investment in scale-up, which is a common issue in Europe when it comes to innovation. Looking at the supply side of financing, she said that this is an investment community that is less specialised and looking at the issue of AI with limited appetite, which is a bit odd, she said, considering that AI is one of the most transformative and potentially disruptive technologies.

On the demand for financing side, she said that Europe has a low R&D investment environment, perhaps explained, according to her, by the fact that all large tech companies making these investments are not in Europe, creating some structural issues. Furthermore, Ms Dustdar stated that there is also the issue of the digital market and the lack of sufficient regulation or data to further enhance this demand.

On the market infrastructure side, what Ms Dustdar said that is needed is to ensure a much better marching between companies looking for financing and those supplying financing, but also the broader digital infrastructure that needs to be put in place to enable all these technologies. Finally, one element that she said emerges from all EIB studies, is that the innovation ecosystem in Europe is rather fragmented when it comes to financing. As such, on AI, she said to believe that there is a unique opportunity to bring all these various instruments from EU and Member State level together.

Minerva Elias Franquesa, Senior Manager, Innovative & Alternative Financing, European Investment Fund, pointed out that the EIC taskforce has identified three major bottlenecks for AI; funding, innovation performance, and ecosystems. Ms Elias thus wanted to know what is holding back European innovation and innovative start-ups, particularly in terms of barriers to funding.

Jean David Malo, Director, European Innovation Council (EIC), wanted to complement what was said earlier, namely that in Europe, there is a particular paradox which especially applies to AI: namely, that Europe has a very strong research performance that was also demonstrated in the context of AI, since the largest talent pool of AI researchers in the world is European, with more than a third more researchers than in the US and almost double that of China. Furthermore, he continued, Europe is also leading in terms of the number of high-level publications over the last two decades, showcasing the strong knowledge background. However, he noted that Europe cannot translate this into innovation, which is even more true for deep-tech oriented innovation that can create new markets.

According to Mr Malo, Europe suffers from two 'Valleys of Death' when looking at the early stage: first, the transition between lab and enterprise is an issue, because there is this pool of talent, but what is lacking in his view are relevant pathways to ease the transfer from lab to enterprise. Secondly, he continued, in the very early stage of the life of some start-ups in Europe, it is not possible to provide them in their very first year of their growth with the necessary ease to scale-up quickly.

In Mr Malo's view, this is due to a number of factors, starting from the situation of the European VC market, where there are smaller VC funds whose granularity of their portfolios are such that they are not able to provide and take the necessary risks needed for this type of companies. On top of that, there is also the fragmentation of the innovation ecosystem, he said, but specified that, while even in the US there is a fragmentation of the innovation ecosystem, the connectiveness that exists in the US is not present in Europe. For this reason, he suggested to do a lot more in terms of connecting the various national, regional, and EU-level actors to work together so that all European talent has the capacity to access the means that exist.

Mr Malo stressed that liquidity in Europe exists, but the key question is how to connect all of this and deliver for the race with huge enterprises that also have support from leading countries. If the EU is to maintain its position and be among the leaders of tomorrow, then the way that this support is provided needs to be addressed, he said.

Minerva Elias Franquesa, Senior Manager, Innovative & Alternative Financing, European Investment Fund, stated that AI has a gigantic potential on many sectors and economies across the EU. She thus wanted to know in which sectors there is the highest value-generation potential and whether funding is really accessible for innovators.

Renaud Champion, Founder & CEO, PRIMNEXT, and Vice President, AI Data and Robotics Association (Adra asbl) explained that there are currently three main sectors where AI, data, and robotics have the most value-creation potential: industrial automation and supply chain management, which goes from manufacturing to agriculture, logistics inspections, and maintenance. According to him, AI has the potential to rethink production processes in factories, warehouses and agriculture, but there is a need for a significant scale-up effect.

The second sector where he said to believe AI would have the most beneficial impact would be mobility and smart cities, meaning new ways of considering transportation, both personal and professional, and how urban infrastructure needs to adapt. According to Mr Champion, it also touches upon the questions of energy management and sustainability. Finally, the third sector as a source of value creation thanks to AI is healthcare, he said, referring particularly to prevention and diagnosis, but also surgery and rehabilitation. For him, AI can help to look at the patient in a very holistic way.

Mr Champion then noted that in all these sectors, there is a large variety of funding tools available, from public and private institutions, but those tools are very segmented: one tool for SMEs, one tool for large companies, one for machine learning, one for robots, one for data, etc. When dealing with AI globally, he stressed the need to unify all these instruments because a very diverse panel of stakeholders is involved. According to him, funding will be efficient by building bridges between these stakeholders, across different borders, with nations that also have different interests.

He then pointed out, however, that there are tools in Europe like the Digital Hub Networks that are going in the right direction, but there is a strong need to stale them up and make them more mature. Furthermore, Mr Champion pointed towards other possibilities that are available, but they also need to be interconnected.

In his view, all European companies are being impacted by AI in almost every business function, regardless of the sector of activity or nature. As such, the funding challenge becomes ensuring that all those companies in Europe, regardless of size and activity, can afford AI services and products. Mr Champion underlined that this is not always possible, primarily due to a lack of awareness, due to the cost of the solutions, as well as due to the practical implementation of these solutions in production processes. These questions are key especially for SMEs, he said, which is why he urged lawmakers that they be addressed.

Minerva Elias Franquesa, Senior Manager, Innovative & Alternative Financing, European Investment Fund, highlighted that Merantix Labs has created a fund to support new venture financing, asking for a summary on the business and start-ups struggles in securing financing for AI, especially in the ideation and incubation phases of these ventures.

Nicole Büttner, Co-founder and CEO, Merantix Labs, replied that from the journey of Merantix Labs, the transfer from research to actual commercialisation not being smooth enough is the real problem. She noted, however, that there are successful models in the US for addressing this, such as the creation of cross-functional departments bringing all AI researchers in one place, which brings about questions of cross-fertilisation and funding.

She then explained that the fund set up by Merantix Labs firstly looked for funding from the EIF but did not obtain it because the Venture Studio is technically a fund but looks too different from a normal fund. As such, she suggested that the EU could be more flexible towards new models.

The second problem that she wanted to highlight is that everything seems to be focused on EU grant financing, while what companies would need is for the public sector and decision-makers to actually become clients of start-ups and help them with commercialisation by becoming users and clients. Nobody wants free money, she said, but a sustainable business model that can carry itself over the long-term.

Another issue that she wanted to address was that of diversity, noting that the focus tends to be on the same markets that have been used for decades, but there are now new emerging markets and consumer

needs, especially in the realm of AI. As such, in her view, money should be going to diverse teams that can explore those markets because they know these users and how to adapt to them.

Finally, Ms Büttner stressed the need to make it easier for institutional investors, like pension funds, to invest in funds such as hers. What this means is for the risk premia to be reflective of the actual risk the investment carries, she said, so as to make it easier for professional investors to do this.

Minerva Elias Franquesa, Senior Manager, Innovative & Alternative Financing, European Investment Fund, wanted to know what the main challenges that start-ups are facing are in this implementation, especially in the early stages before they reach the revenue phase.

Hajdi Ćenan, CEO, Airt, explained that she is also a member of the Ecosystems Leaders Group initiated by Commissioner Gabriel, representing all Member States and looking into how to make Europe become a global powerhouse for start-ups. She noted that the Group managed to create an Action Plan with 21 points, with the two most important ones being talent and access to finance.

When talking about talent, she underlined the need to figure out how to attract talent and retain it, especially for a start-up that needs experts in new technologies and has to figure out ways to finance those experts. She explained that usually, these start-ups offer something that larger companies do not, which is ownership of the start-up. According to her, Europe has not yet solved the problem of employee stock options properly, which is one of the main reasons for which start-ups are leaving Europe and going to the US. As such, the legislator needs to come up not just with nice words on paper, but a usable model for the communities, she said.

When it comes to financing, Ms Ćenan wanted to mention that one of the main strong points of the EU is that it has a lot of funds, but reiterated the message that European start-ups do not want free money but to develop a business model that is viable and scalable up to the global scale. That is why, when it comes to innovation, she underlined that a key characteristic is that it is never known what the final outcome could be, while the conditions that come with grants can be too limiting and restrictive, since they are told exactly when, how, and how much to invest. For Ms Ćenan, this is not the best approach to bring about scalable global-level businesses at the end of the line.

This holds true especially for early stages, she underlined, pointing out that angel investors are not really developed in Europe. Ms Ćenan highlighted that the UK solved this problem through its Seed Enterprise Investment Scheme (SEIS), which already proved its results since the UK has the highest number of unicorns that are not EU companies anymore. What this does, she explained, is that it takes the risk off of those private investors that are really interested in investing in the earliest stages of a start-up, which are also the riskiest.

In her concluding remarks, she stressed that another problem with early stages is the VC ecosystem in Europe is risk-adverse: in the US, a start-up is invested in to become successful, but in Europe, start-ups are invested in when they are successful. That is why for Mr Ćenan, this is a problem that urgently needs a fix.

Minerva Elias Franquesa, Senior Manager, Innovative & Alternative Financing, European Investment Fund, explained that the Lunar Venture fund invests in start-ups with high innovation potential, which is truly specific to this sector. She thus invited Mr Verbin to share his experience with financing AI and related technologies and the challenges encountered in the day-to-day deal screening activities.

Elad Verbin, Founding Partner and Lead Scientist, Lunar Venture, presented Lunar Venture as a fund that invests in computer science start-ups that come with big technical risks. In his view, the main problem with innovation in AI, blockchain, and computer science is that Europe has massive amounts of talent, with amazing researchers, entrepreneurs, and founders from computer science backgrounds, who have started amazing European companies, but are now US start-ups.

According to Mr Verbin, the reason for which they move there is due to the investment in the ideation stage: European VCs that are positioned to invest in start-ups do not know much about computer science

or machine learning because there is no clear path for computer scientists to go into VC and no path for computer-scientist-based VCs to obtain funding. He explained that Lunar Venture was funded by the EIF and many private entities, but in order for Europe to win in this space, there is a need for a much stronger VC ecosystem, he said. As a specific suggestion, Mr Verbin stated that more funding needs to go towards micro-VCs under €100 million because larger VCs do not invest in seed stages.

Minerva Elias Franquesa, Senior Manager, Innovative & Alternative Financing, European Investment Fund, wanted to focus more on the future and explore ways to move from ambition to action, asking if multilateral collaboration can be beneficial in this respect. She thus wanted to know, considering the recommendations of the study on how to move beyond market failures and barriers, how the EIB group is planning to move forward.

Shiva Dustdar, Head of Division, Innovation Finance Advisory, European Investment Bank (EIB), first replied that previous comments about how Europe can gain some major competitive advantage for her would mean to focus on industrial and B2B activities with the right enabling regulatory environment and the right financing for these technologies.

In her view, there is a huge opportunity for Europe to really make a difference and be part of this race: she highlighted that many studies have picked up on the point of the power of innovative procurement and the public sector to become a customer or a client. Ms Dustdar said to be convinced that there is a powerful role to play for a European procurement approach, which the procurement of the COVID-19 vaccine showing that it is possible for this to happen. A more holistic approach to procurement would thus be a powerful market-creating tool, she said.

The other important point that was made for her is the link between AI and diversity, particularly through a gender lens, being able to ensure that investments go to diverse teams who can then sue that lens in combination with a growth mindset for all disruptive things. She thus suggested that perhaps there is a need to disrupt mindsets because the old funding structures might not be the right ones.

The EIB Group, according to her, is thus looking at adopting this holistic perspective, both on the upstream side by providing advisory support to governments and companies on the use of these technologies and how to better access the fragmented financing space; as well as by continuing to fund market studies to ensure that the EIB Group remains future-oriented and future-proof in its own investment decisions. What the EIB Group could do better, according to her, is to better translate ethical issues and trustworthy AI principles in these investment decisions.

The EIB Group is aware that there is a need to provide bigger quantities to larger funds so that they can have bigger ticket sizes, she said, while emphasising that co-investment plays an important role because studies have repeatedly shown that they are crucial to scale-up European companies and prevent them from moving elsewhere. The EIB is thus trying to make sure that it can use its full range of instruments while also bearing in mind infrastructure needs, in line with the EU focus on trustworthiness.

Minerva Elias Franquesa, Senior Manager, Innovative & Alternative Financing, European Investment Fund, wanted to know what solutions the EIC has identified and what funding initiatives and instruments for AI it plans on promoting in the future.

Jean David Malo, Director, European Innovation Council (EIC), recalled that he initially identified two main gaps: the first is the move from lab to companies, which he stressed is important to do from the very early stages, even at the moment in which the public support research-related or technological development projects. He explained that in the past, what the EU, national, and regional levels public procurement programmes did is to fund the emergence of knowledge, but without providing the tools for people to use as soon as possible what emerges from a research project.

According to Mr Malo, this is the reason why the ECI has profoundly modified the objective of what was funded for over 30 years to the concept of future emerging technologies programmes that accompany project promoters to already identify the potential use of what they are discovering, which could also be used in a totally different domain from what they sought originally. That is why for him, it would be

important to use people who have a good knowledge of the environment and the reason why the EIC has introduced the programme for managers in the way the institute handles projects.

The second point that he raised is that if Europe wants to stay in the race, there is a need to first of all take more risks at the very beginning. According to him, a number of companies that are emerging, developing, or maturing technology and their position on the market need a fundamentally different type of support than grants; secondly, he continued, by taking more risk, the EU could directly invest in these types of companies instead of relying exclusively on the VC market. He explained that the objective within the EIC is to invest in these kinds of companies not through loans, but in conjunction with VC actors. According to him, the pilot project that was launched in 2020 identified 150 start-ups, 40 of which related to AI, and in more than 95% of the cases, EIC invested together with other players to de-risk the process.

The third point that he wanted to make is that one of the reasons why some VCs in Europe are not making these kinds of risk decisions is due to their non-knowledge of the area. That is why Mr Malo suggested that they be provided with the capacity for technical due diligence to accompany financial due diligence, providing them with additional information in order to take these decisions.

Minerva Elias Franquesa, Senior Manager, Innovative & Alternative Financing, European Investment Fund, asked Mr Champion in his view, what considerations should factor in the decisions by financiers and policymakers in terms of regulations, mechanisms, guidelines, and supporting finance.

Renaud Champion, Founder & CEO, PRIMNEXT, and Vice President, AI Data and Robotics Association (Adra asbl) noted that the question is relevant to the entire value chain of innovation at different levels: the first one is when funding fundamental research, possible exploitation routes should be investigated at the very beginning and identify early IP opportunities. He stated that today, innovation is not always a priority, which is why some money should be dedicated to what comes after the public funding.

Secondly, he continued, there is a need to favour technology transfer, not only as a way to value research, but also to promote entrepreneurship. In his view, inventions should stay the property of the inventor, or at least under the tech start-up that created them. He stressed that this is not a question of licencing, but one of ownership, since there are many technology transfer contracts that are confiscatory from the very beginning, which has to change.

The third level is when it comes to growth through the so-called 'Valley of Death': for Mr Champion, there is a need for enough money and more risk appetite at the very early stage, as well as ensuring that certification processes are not innovation scarce. In this respect, he wanted to mention healthcare, because the certification route for medical devices is such a pain in Europe, that some innovators are going directly to the US FDA or for the NPA certification in China. In his view, pre-commercial procurement mechanisms are key and should be easily accessible to start-ups and SMEs without much administrative burden. The Financial Support for Third Parties (FSTP) mechanism under Horizon Europe goes in the right direction, he said, with the cascade funding schemes, but there is a question of scale and the amount available.

Mr Champion stressed that the entire conversation is about scale-up, so ensuring that there is big money available without barriers from regulation. On this note, he wanted to underline that he is a strong promoter of trustworthy AI that is safe and favours human wellbeing and that ethical and societal issues need to be integrated in the design, use, and deployment of AI systems; however, not at the expense of innovation, he said, since it is dangerous to regulate everything under the precautionary principle without letting serendipity happen.

Finally, he wanted to emphasise the need to build a unicorn ecosystem to bring about AI champions in Europe through an easier path to IP within a strong, unified technology marketplace at European level. This would require, according to him, a significant change of mindset in large corporations and the way that they consider strategic acquisitions. For Mr Champion, there is a strong need to involve bigger users and give them the incentive to consolidate a sector by acquiring smaller innovative companies at the

right price or help end-users collaborate with start-ups to build a strong commercial pipeline, because in the end, the main funding source for a start-up is selling products.

Minerva Elias Franquesa, Senior Manager, Innovative & Alternative Financing, European Investment Fund, asked how Ms Büttner sees the creation of successful business models around innovation, as well as what role collaboration plays in this regard to bring AI from research into practice.

Nicole Büttner, Co-founder and CEO, Merantix Labs, said to believe that there is a need for ecosystems and not strategies, for both collaboration and co-creation. She explained that Merantix Labs invites start-ups that might even be in competition with the ones that it incubates, corporates who are working on AI initiatives who can be clients, who have data, and have problems, it invites university spin-offs from Berlin universities that are AI-relevant, as well as investors, creating one place where they can interchange and get to know each other. According to her, the power of Silicon Valley was that everyone knew each other, which is also the core of an ecosystem to discover problems, solve them innovatively, have rapid communication, etc.

She then pointed out that in manufacturing, there are a lot of small, specialised companies that are siloed-off, which is horrible for AI data. What is needed is the creation of a space for data sharing that encourages these companies to create Big Data silos not used by Google or other such players, which they can then monetise and build sustainable business models on. This means working with competitors, but also implementing technical ways to solve issues such as data protection, she said.

Minerva Elias Franquesa, Senior Manager, Innovative & Alternative Financing, European Investment Fund, noted that Airt is already working towards AI democratisation, building knowledge, contributing to computer literacy, and providing companies with machine learning without them having to hire their own AI specialists. Ms Elias wanted to know what future plans are in place to support innovation in AI through learning and through offering start-ups the skills that they need.

Hajdi Ćenan, CEO, Airt, stated that one of the big problems with AI is its low adoption, since it is very difficult to implement by companies. She then quoted recent research that showed how 1/3 of all AI projects fail because they never reach production, while others fail due to a lack of production-related data or integrated development environments and the necessary expertise since AI experts are scarce. According to Ms Ćenan, this creates a problem for companies in implementing the benefits of AI into their own businesses and processes.

She then explained that Airt tackled this problem by building a platform that can be used by non-data scientists, namely developers, to connect the data: developers know the technology, their business, and their domain, allowing them to not need to learn new skills or new programming languages. In this sense, Airt is trying to democratise the use of AI, she said.

On the other hand, Ms Ćenan wanted to stress the problem of VCs not really understanding the technology as such, which is why education is important. In this respect, Ms Ćenan highlighted that the Croatian AI Association is collaborating with other national AI associations throughout Europe to promote what the technology is and how it can be used. That is why for her, it would be very important due to upcoming AI Regulations, to increase understanding and capacity, because nobody knows yet what certification will be required, who will be in charge, or what the costs will be, which factor in the discourse of making AI as available as possible.

Minerva Elias Franquesa, Senior Manager, Innovative & Alternative Financing, European Investment Fund, asked for some recommendations to European investment bodies like the EIB and EIF, when designing support instruments for SMEs and start-ups working in the AI sector.

Elad Verbin, Founding Partner and Lead Scientist, Lunar Venture, stressed that the VC ecosystem in Europe needs to change because they do not know AI at any stage and they cannot be constantly helped through external due diligence: investors need to be able to do the due diligence in house, he said. That is why Mr Verbin suggested that more money go into new VCs and new players, who at the moment cannot raise money because all of the funding goes to larger players who do not do the job very well.

Secondly, Mr Verbin said that he does not want to call for less red tape, but different red tape, because currently the process is too hard and too risky. He explained that when EU or national governments allocate capital, it does so based on old rules, but the people deploying the funds do not have the right incentive structures for new VC styles. That is why he reiterated his call to provide small amounts of funding to a larger group of new micro-VCs under €100 million because it could release hundreds of billions of euros.

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