EUROPEUM Brussels Office

Permanent Representation of the Czech Republic to the European Union

REPORT

EU as a leader in AI excellence

Tuesday 7th of May 2019
Permanent Representation of the Czech Republic to the EU

- **The conference titled „EU as a leader in AI excellence", organized by the EUROPEUM Institute for European Policy in cooperation with the Permanent Representation of the Czech Republic to the EU and under auspices of the Ministry of Industry and Trade of the Czech Republic, took place on Tuesday, May 7 2019. The debate reflected on EU's ambition to become a global leader in the field of artificial intelligence research, current trends and future challenges.**
- **The event featured Commissioner Věra Jourová, Ambassador Jaroslav Zajíček, Khalil Rouhana (Deputy Director-General of DG CONNECT, European Commission), Petr Očko (Deputy Minister, Ministry of Industry and Trade of the Czech Republic), Bertrand Pailhès (AI National Strategy Coordinator of France) and Milena Jabůrková (Vice-President of the Confederation of Industry of the Czech Republic). Debate was moderated by Magnus Franklin from Teneo Brussels. More than 80 people participated in the discussion.**

The EUROPEUM Institute for European Policy co-organised a First to take the floor was Věra Jourová, Commissioner for Justice, Consumers and Gender Equality of the European Commission. She opened her keynote speech by stating that the AI is set to change everyday lives of every citizen, the question remains how – and it is EU's main task, to make such a change a change for the better, by focusing on it's traditional values, such as data protection, human-centric approach and careful regulation. She suggested four key pillars for EU's approach to the EU. Firstly, research in the field must be developed in cooperation with private sector. Secondly, EU member states need to cooperate in creating EU centres of excellence - projects such as Horizon 2020 support the model of international cooperation. Thirdly the EU is ready to invest into the AI research, up to 20 billion EUR every year beside the Digital Europe program. Fourth pillar is the focus on people and talent management. The EU must find ways to keep big brains in Europe and pay them adequately. At the same time, trust of the citizens will be essential for future AI development and human-centric approach must be kept. To support those pillars, Jourová stressed that the EU has a very careful approach to regulation, which should not burden the industry, but rather build on existing legislation (such as data protection, competition laws etc). She mentioned recently published ethics guidelines for trustworthy artificial intelligence, put together by High-Level Expert Group on AI, as an example of voluntary non binding document, which is welcomed also

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by businesses for setting a standard of transparency, safety and accountability.

Ambassador Jaroslav Zajíček, Permanent Representative of the Czech Republic to COREPER I, opened his contribution by inviting the audience to listen to a composition titled "From the future", composed by AI-system AIVA based on "From the new world" symhony by Czech composer Antonín Dvořák. AIVA was using machine learning system and studied more than 30 000 classical compositions before completing the task in one month. Mr. Zajíček used the example to demonstrate that AI can complement human efforts, if used well. He then went on to outline the main focus of the conference, asking the key questions: How can EU become leader of AI? What is the state of play? How do we compare with China and US? What are the member states doing? How to support cooperation between research and industry? What is a role of the European Commission?

The event continued with an Inspirational talk by Michal Pěchouček, Director of Artificial Intelligence Centre at the Czech Technical University in Prague. He highlighted the AI as one of the biggest challenges/opportunities the humankind has ever faced, comparable to nuclear energy. He then summed up the challenges that the AI brings. Firstly, it is very energetically demanding, with bitcoin operations' needs equalling the yearly consumption of Ireland or Czech Republic. Secondly, talent in the field is a very scare source and only those who will manage to attract the people will be able to set the agenda. Third challenge lies in AI implications for the job market, which will modify as a result of automation and robotization and there is no clear consensus on how to handle the changes. Fourth challenge identified by Mr. Pěchouček is the negative role AI can play in democratic systems and elections.

In the second part of his talk, Mr. Pěchouček focused on potential AI applications. He outlined three main areas – creating economic values (manufacturing, e-commerce, transportation, healthcare), solving big societal/environmental issues (identification of problems and trends, environmental and educational application, fighting poverty, AI enabled governance) and using AI for Safety and Security (cybersecurity, fact manipulation, AI for rescue robots – AI part of both combat and defence).

Moving forward, Mr. Pěchouček outlined several unresolved problems connected to the AI research. He listed 1. AI explainability and accountability (trust and understanding of people is a pre-requisite to successful AI usage), 2. Adversarial AI (how to make AI resilient against AI), 3. Learning actionable intelligence (full automation – to learn more complicated results), 4. Question of accessibility of data and creating data markets, 5. ML and physical principles, 6. AI- on the Edge (on the phones) and 7. Statistical code (verification programs, creating programs through machine learning).

Mr. Pěchouček further weighted on the comparison of the EU with China and US in terms or AI research. Statistically, EU is not lacking behind in the overall amount of AI papers, however those published in the US tend to have more impact. The US also leads in terms of cooperation of academia and businesses. China, on the other hand, produces comparably most research in cooperation with the state – in both cases, EU lacks behind. Similar situation can be identified in the field of start-ups. In absolute numbers, EU is not dramatically behind the US, however misses the unicorns.

Mr. Pěchouček concluded his inspirational talk by outlining opportunities that the AI research presents for Europe. He pointed out that Europe has strong basic AI research and excellent educational institutions, but we need to support applied research (and attract more private funding) and provide opportunity for talents. Vibrant start-up community provides a good base for developing more unicorns in the future, with the right support. Finally, the human-centric approach to AI is something that sets Europe apart from other global actors.

The conference continued by a panel discussion on how to promote AI excellence in Europe. Moderator, Mr. Franklin opened the debate asking if panellists think the EU has what it takes to be an AI powerhouse.

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First to speak was Mr. Rouhana, who assured the audience that the EU has the means (academia, engineering, skills sets), ambition and a good plan, now the key part will be the implementation and changing the market dynamics. He identified fragmentation as one of the biggest obstacles so far – that is why Commission supports cooperation and collaboration between research centres. That, together with new investment plan under the new MFF, should lead to AI excellence.

Ms. Jabůrková continued on a positive note, stressing that the EU did important first steps in the right direction and its determination and preparedness to invest money create a good basis for future development of the sector. She welcomed the focus on ethics, transparency and human centric AI as a right foundation of the EU's approach, which is a middle ground between China's top-down and US's bottom-up approach. She outlined several conditions the EU needs to fulfil in order to succeed – firstly, the ambition needs to continue with the new Commission. EU must come up with the right regulatory framework (e-privacy, machine-to -machine communication), be able to export AI (and have the same conditions as our trading partners) and avoid further weakening of the single market. She also stressed that the EU institutions should lead by example and involve AI processes in their internal functioning.

Mr. Pailhès presented the French perspective. According to him, the key for quality research is creating eco-systems which will allow for talent cooperation at all levels and across the fields. France already started with creating four such centres, in Toulouse, Grenoble, Paris and Nice, but more centres need to be developed at the EU level – and emphasis must be given not only to research, but also its practical application. Mr. Pailhès also stressed the need to be able to attract talent in order to become competitive – admittedly not an easy task for Europe, given the fact that majority of EU start-ups aim for the US market.

Mr. Očko followed up on his colleagues' presentations, stressing the need for a coordinated approach and creating a supportive ecosystem for AI research and start-ups on the EU level. He highlighted the ethical guidelines for AI as something the EU has to offer the rest of the world. Speaking about the Czech Republic, Mr. Očko reminded the audience that the word robot originally came from Karel Čapek's play and the country continues to have strong will and predispositions to be an active player in the field of AI.

Magnus Franklin acknowledged that all the panellists evaluate the current situation in an optimistic way and invited them to comment more on AI centres in the EU which could allow for further cooperation in this field.

Mr. Rouhana emphasized that the strength of Europe lies in a diversity of experts and a longstanding aspect of the AI research. At the same time, he stressed a necessity to work on a better EU-wide ecosystem of networks and strengthening public-private partnerships - He reminded that in the past, various well-developed initiatives lacked funding. Mr. Rouhana underlined that EU should become a moving and inspiring power in applying new technologies, instead of only reacting to initiatives of the others.

A need of a strong and active Europe vis-à-vis other world actors was observed also by Bertrand Pailhès. He further developed on accessibility of technologies by companies across Europe and, at the same time, he appealed on a clear specialisation within this field in various regions of Europe.

Ms. Jabůrková, who spoke on behalf of the industrial sphere, noted that industries are interested in implementing the results of research into practice. She reflected on potentials of AI hubs and development of infrastructures, adding that a vibrant system is already present in the Czech Republic (regarding cyber security for instance).

Mr. Očko focused on precise examples of different AI-excellence centres in the Czech Republic and he presented varying scopes of those sites. Referring to the introductory inspirational speech by Michal Pěchouček, he strongly pointed out that safety and security in the AI are a crucial basis for any further activity in this field and that there is a clear necessity of cooperation in ensuring that.

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The Q & A session covered a wide range of topics, reflecting on what the panellists had mentioned. Thanks to the presence of two different EU member states' representatives, different obstacles in dealing with AI challenges nowadays were discussed from the Czech and the French point of view. Another question addressed the regulation guidelines within the AI-sphere and potential of the EU-based companies regarding the data acquiring. The last theme focused on the potential of AI in the regions – and not only in big cities. Perspectives of a Czech strategy in this regard, as well as the European Commission's steps ensuring the EU funding regarding AI in the regions, were presented. The moderator closed the event by proclaiming the EU-excellency as being interdisciplinary. In his closing remarks. Ambassador Zajíček appealed to maintain the cooperation among different member states.

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