EP-EUI Roundtable on Strategy for Artificial Intelligence in Europe

Proceedings

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Abstract

Proceedings summarise the EP-EUI roundtable on the Strategy for Artificial Intelligence in Europe. The roundtable with academics from European University Institute involved MEP Róża THUN (Chair of the Digital Single Market Working Group of the Committee for the Internal Market and Consumer Protection), MEP Mady DELVAUX (MEP), Mr Riccardo RIBERA D’ALCALA, Director-General of DG IPOL, European Parliament, Ms Catelijne MULLER (European Economic and Social Committee), and Dr Cecile HUET, the Deputy Head of Robotics and Artificial Intelligence Unit in DG CNECT.

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EXECUTIVE SUMMARY

In the framework of scientific cooperation provided by the agreement between the European Parliament and the European University Institute, the roundtable was organised to discuss European strategy for artificial intelligence.

The discussion panel on the European Parliament side was composed of Ms Róża THUN (Chair of the Digital Single Market Working Group of the Committee for the Internal Market, MEP), Ms Mady DELVAUX (MEP), the Rapporteur for the European Parliament’s report with recommendations to the Commission on Civil Law Rules on Robotics, and Consumer Protection)(MEP), Ms Catelijne MULLER, the Rapporteur of the own-initiative opinion of the European Economic and Social Committee on Artificial intelligence – The consequences of artificial intelligence on the (digital) single market, production, consumption, employment and society, Mr Riccardo RIBERA D’ALCALA, Director-General of DG IPOL, European Parliament, the Professors of the European University Institute and Fellows of the School of Transnational Governance in the Institute, as well as Dr Cecile HUET, the Deputy Head of Robotics and Artificial Intelligence Unit in DG CNECT.

The roundtable was opened by Ms Róża THUN welcoming participants of the event, both in the European Parliament in Brussels and in the European University Institute in Florence.

In his welcome speech, Director General Mr RIBERA D’ALCALA has highlighted that due to very far-reaching nature of AI, the foresight is of particular importance in order to identify and address all possible legal, cultural, ethical, economic and social implications of such rapidly advancing technological process.

Stressing that smart policies are needed to regulate intelligent machines, Mr RIBERA D’ALCALA indicated that the choice of policies followed by the European Union should be based on prior identification of the right questions on AI, in order to provide the right answers through a process involving scientific evidence. Director General has pointed that the European Parliament rightly took the initiative to start reflection on artificial intelligence with support of expert studies prepared by Policy Departments and academics, including those present during today’s EP-EUI roundtable.

Mr RIBERA D’ALCALA pointed as well at excellent relationships with European University Institute. Director-General indicated that, in his capacity of a representative of the European Parliament at the High Council of the European University Institute, he had the privilege to observe the growing role of the Institute in reflection on the European policy. Director General congratulated the Institute for the recent initiative of establishing the School of Transnational Governance, a project strongly supported by the European Parliament and its President.

Ms THUN indicated in her opening remarks that it is the ambition of the Members of the European Parliament to make policy and legislation that is evidence based and supported by advice of independent experts, composed predominantly of academics. Ms THUN pointed that if academics were involved or British citizens would profit from the fact that we have so many good academics in the European Union, probably we would have the decision on Brexit such as we unfortunately see and experience.

Ms THUN indicated that the EP-EUI Roundtable is possible because of the special link between the European Parliament and the European University Institute and that it provides a frame of discussion on important topics on preliminary stage of shaping European policy, such as the
strategy for artificial intelligence in Europe. Ms THUN thanked again the Professors of the European University Institute for their availability for the discussion.

The Chair of the IMCO Digital Single Market Working Group remarked that the topic of artificial intelligence is technological and complex. It is therefore even more important that AI is explained in a way understandable to every European, so that citizens can understand not only the underlying aspect of AI but also challenges of artificial intelligence in everyday life. Ms THUN then listed the multiple advantages of AI: improvements of productivity and competitiveness in the wake of the 4th industrial revolution; its capability in addressing social challenges, especially in the healthcare sector, e.g. through assisting elderly and disabled persons; capability of reducing environmental risks and improving our security e.g. for gas, petrochemical industry, rescue missions and cybersecurity.

However, we have to be very careful in shaping AI in order to prevent misuse, dissemination of fake news, manipulations that can give to different voters different perceptions of a given candidate in election. Ms THUN stressed that AI requires very precise rules and alignment with goals of its creators. If not used correctly it can lead to problems, including job losses.

European Parliament is currently gearing up to set a proper policy agenda for artificial intelligence. Artificial intelligence revolution is happening right now and we cannot afford to make any mistakes. Ms THUN pointed that European Union needs a frame to set up policy of the highest quality, with focus on priorities and synergies. The role of the EP-EUI roundtable is to contribute to the discussion on formulation of such policy in the area of artificial intelligence.

Dr Cecile HUET’s presentation focused on longstanding effort of the European Commission in the field of artificial intelligence. AI will have impact on economy and EC wants Europe to benefit from it. Improving productivity is the key objective but artificial intelligence should also help Europe to address the issue of facilitation of heavy tasks through automation, ageing of the population, autonomy of elderly people, reduction of pollution, reduce or remove the use of pesticides, to improve transport systems through increased autonomy and efficiency, to improve security of the society. Artificial intelligence can therefore benefit Europeans both in their workplace and at home.

Ms HUET indicated that more research is needed to prepare the systems which are more robust, more versatile and accurate, more scalable and more user friendly. In the non-technical aspect, safety should be increased to prevent malicious cyberattacks and liability rules need to be clarified. Regarding employment, automation is already changing job landscape and we need to adapt and take most opportunities instead of just counting job losses due to AI. We need to make sure that technology is helping people.

Dr HUET indicated at three priorities: 1) to bring together all European resources, including access to data, 2) to continue to invest in research, identify areas where we are strong and 3) to exploit and roll out AI and find mechanism to help companies to adopt it. Concluding her intervention, Ms Huet stated that there is a huge potential in AI and that Europe should not miss this opportunity and collaboration on all level in Europe is key to successful policy in the area of AI.

Prof. Dr SARTOR pointed that the most important technological development of the last years is the convergence between AI and the Internet. We need to understand what are these two leading technologies doing and what do they want.

AI is applying learning processes to vast sets of data (e.g. past purchases, webpages we visited, our genetics, our medical history, criminal behaviour, education, etc.) with the goal of making predictions
and classifications of who is more likely to buy something, to view something or to suffer some kind of illness, to engage in criminal behaviour. AI is able to learn from past successes and failures in classifying and predicting. Artificial intelligence wants larger sets of examples, as much data as possible to discover and exploit new correlations.

Internet is enabling all kinds of human interaction as well as links billions of connected devices (smart phones, cars, computers, cleaners, etc.). It provides a vast set of services (banking, shopping, news, etc.) and collects data from physical environments and locations through a large number of cameras and sensors, as well as from digital environments, where every click is registered. Internet wants new AI enabled services providing intelligent, individualised solutions and the ability to extract useful knowledge from the data it collects.

So there is a great convergence where the internet provides AI with data it needs and AI provides the internet with the ability to exploit the data. This convergence can lead to improvement of efficiency and effectiveness in many domains, including personalised medicine by delivering targeted remedies for many kinds of illnesses. It allows for a worldwide generation and distribution of knowledge and solutions. It may also be useful in addressing geographical inequalities existing within the EU and outside of it.

However, there is also less pleasing aspect. In order to satisfy data hungry applications, the Internet has become an infrastructure for data collection and, to some extent, surveillance. Prof. Dr Sartor indicated that these developments lead to a new power relation where it is increasingly difficult to argue with suggestions, recommendations and assessments that influence humans and of which we may not be even aware. These systems collect superior knowledge which is difficult to contest or oppose.

Ethical and legal tools give us a guidance on responses that can be given to the above challenges. Policy and regulation is not easy and only innovative and social solutions can provide optimal outcomes e.g. on how to improve transparency without impairing performance in AI systems.

Prof. Dr Hans-W. MICKLITZ presented Digital Control of Unfair Terms and Standard Contract Conditions Project in which machine learning technique was used to identify the terms in contracts that were potentially unfair. The objective is to develop this technique further by increasing the amount of data and developing a web crawler that searches through the net for standard terms that could be potentially illegal.

The next step in research is to focus on data protection regulation and build capability of identification to what extent companies are complying with the requirements present in the GDPR as of May 2018.

Mr Kuziemski indicated at the problem of lack of consensus amongst experts on the number of jobs created or destroyed due to artificial intelligence and cognitive technologies. This uncertainty is not very workable for policy makers. We experience lack of knowledge about likelihood and outcomes of various emerging technologies and it seems to be particularly pertinent in case of AI. Under such circumstances, probabilities of risk cannot be assigned fully due to ambiguity, uncertainty or ignorance rather than risk. Mr Kuziemski proposed precautionary principle as the tool to be applied in policy making in order to address this problem.

During the discussion that followed Ms THUN indicated that a legislator has difficulties to keep abreast with technological changes. Ms THUN pointed that a focus on education is necessary and equally that such focus needs to be communicated to European citizens of various professional groups. Dr HUET came back to the argument of evidence-based policy and advocated to use its tools for assessment of
real impact on jobs based on examples and testing and not hypotheses from previous examples. **Prof. Dr MICKLITZ** proposed a sector by sector and profession by profession approach giving an example of legal profession. **Ms Catelijne MULLER** recalled the notion of *human in command* concerning not only the command of technology itself but also when and how such technology is deployed, including such important areas as health, education, etc. while **Prof. Dr SARTOR** reminded the notion of fairness of behaviour of AI systems, which should give the possibility to contest its actions by humans and the possibility of human involvement.

The EP-EUI Roundtable was concluded by **Ms Róza THUN (MEP)** and **Mr Riccardo RIBERA D’ALCALA (Director General, DG IPOL)**.
1. WELCOME SPEECH BY MR RICCARDO RIBERA D’ALCALA, DIRECTOR-GENERAL, DG IPOL

The roundtable was opened by Ms Róża THUN (Chair of the Digital Single Market Working Group of the Committee for the Internal Market and Consumer Protection, MEP) welcoming participants of the event, both in the European Parliament in Brussels and in the European University Institute in Florence, and indicating that she has just participated in Mobile World Conference in Barcelona where the topic of artificial intelligence was at the centre of discussions.

Ms THUN passed the floor to Mr Riccardo RIBERA D’ALCALA, Director-General of DG IPOL, European Parliament, who thanked Ms THUN for hosting and chairing the EP-EUI roundtable on artificial intelligence, a strategic topic with impact on many policy fields and legislative work of committees of the European Parliament. Director General congratulated Ms THUN for her work as the Chair of Digital Single Market Workshop Group, being since many years the EP engine for identifying and analysing the best policy options to develop European digital economy. Mr RIBERA D’ALCALA also congratulated Ms THUN for her work as the Rapporteur on the recently adopted regulation on geo-blocking.

Mr RIBERA D’ALCALA welcomed among the participants of the roundtable Ms Mady DELVAUX (MEP), the Rapporteur for the European Parliament’s report with recommendations to the Commission on Civil Law Rules on Robotics, Ms Catelijne MULLER, the Rapporteur of the own-initiative opinion of the European Economic and Social Committee on Artificial intelligence – The consequences of artificial intelligence on the (digital) single market, production, consumption, employment and society, the Professors of the European University Institute and Fellows of the School of Transnational Governance in the Institute, as well as Dr Cecile HUET, the Deputy Head of Robotics and Artificial Intelligence Unit in DG CNECT.

Mr RIBERA D’ALCALA has highlighted that due to very far-reaching nature of AI, the foresight is of particular importance in order to identify and address all possible legal, cultural, ethical, economic and social implications of such rapidly advancing technological process.

Stressing that smart policies are needed to regulate intelligent machines, Mr RIBERA D’ALCALA indicated that the choice of policies followed by the European Union should only be based on prior identification of the right questions raised by AI, in order to provide the right answers through a process involving scientific evidence. It is necessary to understand capabilities of AI machines as a prerequisite for subsequent regulation of what such machines should do and what they should not do.

Director General has pointed that the European Parliament rightly took the initiative to start reflection on artificial intelligence with support of expert studies prepared by Policy
Departments and academics, including those present during today’s EP-EUI roundtable, and thanked as well DG EPRS services and Science and Technology Options Assessment (STOA).

Mr RIBERA D’ALCALA recalled that on February 2017 the European Parliament adopted a broad and far reaching report on “Civil law rules on robotics” which deals with a number of areas and calls upon the European Commission to create a legal framework to enforce the ethical standards for the development, production and use of robots and the establishment of liability rules.

Mr RIBERA D’ALCALA stressed as well excellent relationships with European University Institute. Director General indicated that, in his capacity of a representative of the European Parliament at the High Council of the European University Institute, he had the privilege to observe the growing role of the Institute in reflection on the European policy. Director General congratulated the Institute for the recent initiative of establishing the School of Transnational Governance, a project strongly supported by the European Parliament and its President. It will provide an academic frame to deal with global challenges extending beyond the State, such as economic governance, migration, security, climate change. Artificial intelligence could be among such challenges subject to the analysis. The School will train EU national stuff and could contribute to training and forming European leadership. Director General invited colleagues present in the meeting room to benefit from this academic training opportunity. Mr RIBERA D’ALCALA pointed that the School can contribute to and foster policy dialogues between scientists, academics and decision-makers, also in a form of executive trainings and workshops with aim to best deliver and meet the expectations and needs of citizens.

Mr RIBERA D’ALCALA wished everyone a fruitful exchange in the framework of this EP-EUI roundtable.
2. OPENING REMARKS BY MS RÓŻA THUN, CHAIR OF THE DIGITAL SINGLE MARKET WORKING GROUP OF THE IMCO COMMITTEE

Ms Róża THUN (MEP), the Chair of IMCO Digital Single Market Working Group and the Chair of the EP-EUI Roundtable, thanked Director General for his welcoming words and introduction hoping that the roundtable will continue in the tone set by his speech and highlighting special character of this roundtable between European Parliament and European University Institute.

Ms THUN indicated that it is the ambition of the Members of the European Parliament to make policy and legislation that is evidence based and supported by advice of independent experts, composed predominantly of academics. The roundtable is an example of such cooperation and all policy decisions would benefit from such better decision making standards.

Ms THUN pointed that if academics were involved, or British citizens would profit from the fact that we have so many good academics in the European Union, probably we would have the decision on Brexit such as we unfortunately see and experience.

Ms THUN indicated that today’s EP-EUI Roundtable is possible because of the special link between the European Parliament and the European University Institute and that it provides for a frame of discussion on important topics on preliminary stage of shaping European policy, such as the strategy for artificial intelligence in Europe. Ms THUN thanked again the Professors of the European University Institute for their availability for the discussion.

The Chair of IMCO Digital Single Market Working Group remarked that the topic of artificial intelligence is technological and complex. When discussing artificial intelligence we normally hear about drones, robots, smart cities, smart cars, etc. Ms THUN participated in numerous such discussion in the frame of ongoing Mobile World Conference in Barcelona. However, it is also important that AI is explained in a way understandable to every European so that citizens can understand not only the underlying aspect of AI but also challenges of artificial intelligence in everyday life.

Understanding the challenges of artificial intelligence is crucial for an in-depth and well informed debate that will lead to clear and good quality legislation.

Ms THUN listed multiple advantages of AI: improvements of productivity and competitiveness in the wake of the 4th industrial revolution; its capability of addressing social challenges, especially in the healthcare sector, e.g. through assisting elderly and disabled persons; capability of reducing environmental risks and improving our security e.g. for gas, petrochemical industry, rescue missions and cybersecurity.

The Chair of IMCO Digital Single Market Working Group indicated that AI is a source of an untapped potential for growth, in particular in the area of services. AI will completely change ICT and automotive sector.
Ms THUN stressed that we have to be very **careful in shaping AI in order to prevent misuse**. Dangers are multiple. Among many examples is the raise of dissemination of fake news. Systems of machine learning are used often in election campaigns and they engage voters under excuse of informing them on key political issues with many implications, including those ethical.

Nowadays, campaigners have access to real time data, especially through social media, with insight on political predispositions based on likes, clicks and interactions with certain webpages.

Manipulation can give to different voters different perceptions of a given candidate. Ultimately voters cannot tell which one is the real version of the candidate, what are his or hers real beliefs or political agenda. AI can thus destroy transparency and sincerity of this information.

However, **AI can also help counteract these tendencies**. Ms THUN indicated that AI could and should be used to help educate voters on political issues and give voters possibility to take better decisions and uphold and enforce democracy.

Al can become a **valuable tool to politicians in their campaigns, but only if used in honest, ethical and legitimate way**.

Ms THUN indicated that if poor quality or biased data is introduced in AI systems it can be **replicated or deepen bias** that people might have with negative impacts on well functioning of the Digital Single Market.

AI requires **very precise rules and alignment with goals of its creators**. If not used correctly it can lead to problems, including job losses.

MS THUN indicated that the **European Parliament is currently gearing up to set a proper policy agenda for artificial intelligence**. Artificial intelligence revolution is happening right now and we cannot afford to make any mistakes.

Ms THUN pointed that in the light of the rapid developments the **policy agenda has to be prepared taking into account the upcoming new challenges**. These changes become systematically more dynamic. We must focus on the most important issues with the biggest impact on European citizens' lives.

The Chair of the IMCO Digital Single Market Working Group noted that at this point of time the **European Union needs a frame to set up policy of the highest quality, with focus on priorities and synergies. The role of the EP-EUI roundtable is to contribute to the discussion on formulation of such policy in the area of artificial intelligence**.

With this statement Ms THUN passed the floor to Dr Cecile HUET, the Deputy Head of Robotics and Artificial Intelligence Unit in DG CNECT of the European Commission.
3. VIEW FROM THE EUROPEAN COMMISSION – POLICY PRIORITIES IN THE AREA OF ARTIFICIAL INTELLIGENCE

Dr Cecile HUET’s presentation focused on the longstanding effort of the European Commission in the field of artificial intelligence. The speaker began by noting that the goal of the European Commission is to make technology intuitive and adaptive to the user and that it should assist users rather than replace them. AI will have impact on economy and EC wants Europe to benefit from it. Improving productivity is the key objective but artificial intelligence should also help Europe to address the issue of facilitation of heavy tasks through automation, ageing of the population, autonomy of elderly people, reduction of pollution, reduce or remove the use of pesticides, to improve transport systems through increased autonomy and efficiency, to improve security of the society. Artificial intelligence can therefore benefit Europeans both in their workplace and at home.

Ms HUET also added that the AI has significant and undisputed growth potential subject to many predictions. We need to work and collaborate on artificial intelligence in EU, so that the benefits can be achieved in Europe, and not only in the U.S. or China.

Ms HUET indicated, assessing the current state of AI in Europe, that there are still many technical and non-technical barriers to its deployment.

On technology, more research is needed to prepare the systems which are more robust, more versatile and accurate, more scalable and more user friendly. Ethical, legal and social issues as well as the public acceptance cannot be overlooked and public should be informed correctly of developments of artificial intelligence. By design solutions need to be implemented.

Some of the strategies to address these barriers consist of funding programs to boost the development of AI and robotics. The allocated figure just for AI is around 18 million euros per year, with more funds in the area of robotics, with overall spending until now reaching 500 mln in the previous work programme. Moreover, the Horizon 2020 plan has enabled the creation of SPARK public-private partnership and the goal is to commit funding from both sectors for robotics and AI in Europe. Horizon 2020 has many more activities, including strategies envisioned for big data and analytics, the Internet of Things, AI, application driven programs in areas of agriculture and health, as well as cybersecurity and smart manufacturing in the upcoming programme.

In the non-technical aspect, safety should be increased to prevent malicious cyberattacks. Liabilities should be clear: when an autonomous system causes an accident, who is liable? The company that created the machine? People who trained the system? In the presence of AI system that increasingly rely on sensors, data protection should also be increased, as advanced AI systems are now able to collect considerable amounts of information and we need to make sure that privacy is respected.

Regarding employment, automation is already changing job landscape. We need to adapt and take most opportunities instead of just counting job losses due to AI. We need to make sure that technology is helping people.

There is already legislation in place addressing issues of safety, most notably Machinery Directive, although now European Commission needs to examine if it is still fit for purpose in the light of progress of autonomous systems. EC has a project to assist SMEs with certification but also a project to develop standards in the area of AI. In terms of liability, there is the Product Liability Directive (equally under evaluation if it is fit for purpose). In the area of data protection and ownership, we have the GDPR and a package coming in April on contributing to data and developing data. On employment, there is a number of initiatives to assure right skills.
EC wants to make sure to have smart regulation for smart industry to avoid staling innovation. An important element of this is support for digital innovation hubs that put together providers of technology, business and users to allow deployment of technology and create opportunities to benefit from technologies. The goal is to have one innovation hub in every region in Europe.

It is also important to build up public acceptance of AI and that we understand public concerns regarding AI and robotics. 72 percent of population is concerned how it will affect their jobs. On positive side people understand that AI and robotic can help them, facilitate their tasks and offer added value. There are also concerns about privacy, safety, transparency of decisions taken by automated systems. Recent survey indicates that people who are most distrustful of AI are also the people who less come into contact with the technology. Raising an individual’s level of education regarding AI would make people much less distrustful of it.

On the topic of scientific development in Europe, AI academia and AI related research are strong. Many foreign companies invest in Europe labs, buy SMEs and cherry pick the best ones. We need to join forces in Europe to be stronger together. Fragmentation is a problem in confrontation with Silicon Valley of Chinese investment. Also exploitation is a problem, discoveries are not commercially exploited or exploited by foreign players. We need to bring all European resources together.

Dr HUET indicates at three priorities: 1) to bring together all European resources, including access to data, 2) to continue to invest in research, identify areas where we are strong and 3) to exploit and roll out AI and find mechanism to help companies to adopt it.

Ms HUET indicated that the goal of the Commission is to create a one stop shop platform where it can gather all resources and tools needed for AI and provide a layer of services to help companies to use these resources.

European Commission was called upon to prepare a communication on strategy on AI. Such communication, presenting integrated approach will be ready by the end of April. The communication will be based on three pillars: providing technology and industry capacity, addressing non-technical issues such as legal, social and ethical concerns, addressing socio-economic challenges concerning mainly jobs and skills. All stakeholders and experts need to be mobilised along with civic society to develop these three pillars. There is important mobilisation on national level to provide feedback and initiatives from MS. Important input is provided by European Association for AI, an alliance of MS strategies and activities of associations on AI, mainly academic but also presenting industry and policy landscape with 20 MS presenting their activities.

Concluding her intervention, Ms HUET stated that there is a huge potential in AI and that Europe should not miss this opportunity and collaboration on all levels in Europe is key to successful policy in the area of AI.
4. VIEW FROM ACADEMIA – OPPORTUNITIES AND CHALLENGES IN THE AREA OF ARTIFICIAL INTELLIGENCE

Prof. Dr Giovanni Sartor - Citizens, markets, public opinion and AI

Ms Róża THUN (MEP) thanked Dr Huet for her presentation and indicated that, exactly in the spirit of cooperation, we benefit in the framework of the roundtable from presence and expertise of Professors of the European University Institute. Ms. THUN reminded that on the panel in Brussels there are also Ms Mady DELVAUX (MEP), the Rapporteur for the European Parliament’s report with recommendations to the Commission on Civil Law Rules on Robotics and Ms Catelijne MULLER, the Rapporteur of the own-initiative opinion of the European Economic and Social Committee on Artificial intelligence – The consequences of artificial intelligence on the (digital) single market, production, consumption, employment and society. With this Ms THUN passed the floor to Prof. Dr Giovanni Sartor.

Prof. Dr SARTOR started his presentation indicating that he would focus on an overview and some general issues relating to AI and big data while Prof. Dr Micklitz would focus on the issue of consumer protection. Further, Prof. Dr Sartor will discuss concerns triggered by AI while Prof. Dr Micklitz will focus on positive impact of AI on fairness and legality.

Prof. Dr SARTOR indicated that the most important technological development of the last years is the convergence between AI and the Internet.

Both technologies develop significantly. AI moves towards speech and image recognition, recommendations, translation, autonomous mobile robots and cars. Internet has been moving from message exchange into universal medium of delivery of all kinds of public and private services. It moves from human intermediation to algorithmic intermediation in shopping, banking, accessing information and knowledge, etc.

Also the technologies changed significantly. AI started as human made representation of knowledge, human set tasks of programming, and now we move towards data driven AI and machine learning AI where we provide data to computer systems and they extract probabilistic correlations on this basis. Internet has been moving from infrastructure of exchanging messages between humans into a global interconnected data structure.

We need to understand what are these two leading technologies doing and what do they want. AI is applying learning processes to vast sets of data (e.g. past purchases, webpages we visited, our genetics, our medical history, criminal behaviour, education, etc.) with the goal of making predictions and classifications of who is more likely to buy something, to view something or to suffer some kind of illness or to engage in criminal behaviour. AI is able to learn from past successes and failures in classifying and predicting. Artificial intelligence wants larger sets of examples, as much data as possible to discover and exploit new correlations.

Internet, is enabling all kinds of human interactions, as well as links billions of connected devices (smart phones, cars, computers, cleaners, etc.). It provides a vast set of services (banking, shopping, news, etc.) and collects data from physical environments locations through a large number of cameras and sensors, as well as from digital environments, where every click is registered. Internet wants new AI enabled services providing intelligent, individualised solutions and the ability to extract useful knowledge from the data it collects.

So there is a great convergence where the internet provides AI with data it needs and AI provides the internet with the ability to exploit the data. This convergence can lead to improvement of
efficiency and effectiveness in many domains, including personalised medicine by delivering targeted remedies for many kinds of illnesses. It allows for a worldwide generation and distribution of knowledge and solutions. It may also be useful in addressing geographical inequalities existing within the EU and outside of it.

However, there is also less pleasing aspect. In order to satisfy data hungry applications, the Internet has become an infrastructure for data collection and, to some extent, surveillance. Even the data that appears outdated or insignificant, becomes potentially useful for learning algorithms and scalability is no problem or a lesser problem than it was thought to be.

We cannot evade the Internet and AI infrastructure, as many services are only provided within this infrastructure and distributed through smartphones which become increasingly indispensable.

Prof. Dr SARTOR indicated that these developments lead to a new power relation where it is increasingly difficult to argue with suggestions, recommendations and assessments that influence humans and of which we may not be even aware. These systems collect superior knowledge which is difficult to contest or oppose.

The new issues that are arising include: liability for harm caused by unpredictable AI behaviour as addressed by the report of the European Parliament on Civil Law Rules on Robotics; how to support the development of new, useful and competitive technologies while ensuring safety and compensation for harm; how to ensure privacy and data protection while also allowing for the collection of data that AI needs to provide useful services; how to enable powers of AI systems to be deployed enabling AI to extract new, possibly sensitive, information about health situation, sexual orientation, etc. from non-sensitive data without violating privacy and data protection.

Then, there is an issue of discrimination. AI can suggest, make choices but it should not lead to unfair treatment of individuals. AI needs not only to be smart but also fair.

There is also the issue of persuasion. How to enable AI to make useful suggestions, provide useful information while avoiding individuals being manipulated. This concerns purchasing behaviour, advertising as well as political behaviour in elections.

The next significant issue is the data dominance. Those possessing big silos of data can make better AI technologies, make better choice, and provide better services. Even playing field for competitors should be preserved.

An emerging issue is transparency. While allowing for advanced learning and decision making by AI systems it is important to enable those affected by AI systems, classifications and decisions to assess the behaviours of AI and to be provided by reasons that reflect grounds of decisions and choices they are subject to.

Ethical and legal tools give us a guidance on responses that can be given to the above challenges. Privacy and data protection are important. GDPR is providing a big step forward. We have the right to lawful and proportional processing of data and here is a big tension between traditional principle of data protection, necessity, purpose limitation, minimisation of personal data and the fact that the data driven AI needs a lot of information so it is easy to find legitimate reason for such processing. The right to control processing of the data needs to be reconciled with the tension of the lack of transparency that AI involves. There is an interest in fair algorithmic treatment (not to be subject to unfair differentiated treatment) that goes beyond data protection (price differentiation, lending, employment, insurance).
There is interest in **algorithmic transparency** to know the reasons underlying a certain algorithmic response or decision.

**Fair algorithmic interactions mean that we do not want to be manipulated by algorithmic processes.** As in the example raised by Ms THUN but also in economic domain.

There is an interest as well in **fair algorithmic cognitive competition** while big data silos are monopolised also because these monopolies reflect existing monopolies on the Web. Monopoly over a service gives also monopoly over data that are collected while delivering such service.

Through interaction between AI and Internet even **local knowledge** plays role in the dynamics of the competition although this aspect still needs to be studied.

Prof. Dr Sartor stated that there is a number of problematic **trade-offs** to be considered. Policy and regulation are not easy and only innovative and social solutions can provide optimal outcomes e.g. on how to improve transparency without impairing performance in AI systems.

The GDPR is an important step forward. It provides user entitlement, emphasises prevention and addresses algorithmic decision making. However, the **current focus on protecting personal data is not sufficient** and may be misleading. In relation to citizens a **broad perspective is needed** and one of the most important questions is **how to combine smartness and fairness will be a big challenge for future regulation.**

**Prof. Dr Hans-W. Micklitz - Consumer protection aspects of AI**

Prof. Dr Hans-W. MICKLITZ presented Digital Control of Unfair Terms and Standard Contract Conditions Project speaking on behalf of a group of researchers, consumer scientists, economists and legal scholars.

Empirical research was a basis for choosing eighth standard terms that are tentatively problematic: jurisdiction clause, conflicts of law, limitation of liability, unilateral change, unilateral termination, arbitration, contract by use, and content removal. These eighth categories of terms were used and tagged. **Machine learning technique was applied to identify the terms in contracts that were potentially unfair.** Machine learning programme does not provide legal certainty as to illegality of these clauses but speeds up identification and collection process for further assessment.

The objective is to **develop this technique further by increasing the amount of data and developing a web crawler that searches through the net for standard terms that could be potentially illegal.** Later, there will be an app through which consumers could check, for their own purposes, if the contract they concluded contains potentially unfair contract terms. The project will develop further, taking into consideration EU case law and the opinions of the Advocates General.

The next step, and the link to the previous presentation, is to focus on **data protection** regulation, which is technically more challenging and is more complicated for cooperation between computer scientists and lawyers, as in this case machine learning system has to identify what is missing in the information provided on Internet. Among categories verified are identity of the controller, contact details of the controller, legal basis for processing, categories of personal data to be protected, etc.

The goal is to build **capability of identification to what extent companies are complying with the requirements of the GDPR as of May 2018.**
Mr KUZIEKSKI stated that there is no consensus amongst experts on the number of jobs created or destroyed due to artificial intelligence and cognitive technologies. This uncertainty is not very workable for policy makers. We experience lack of knowledge about likelihood and outcomes of various emerging technologies and it seems to be particularly pertinent in case of AI. Under such circumstances probabilities of risk cannot be assigned fully due to ambiguity, uncertainty or ignorance rather than risk.

Such scientific uncertainty could be addressed by applying precautionary principle, as developed by UN in the Rio Declaration of 1992. Set in order to protect the environment, it indicates that the precautionary environment should be widely applied by States according to their capability where there are threats of serious or irreversible damage. Lack of full scientific certainty should not be used as a reason for postponing cost effective measure to prevent environmental degradation.

This principle has been widely applied since 1992 in various areas of policy making. It offers several benefits. First of all, it offers a higher level of protection than preventive measures. It puts humans and environment at the centre of policies. It shifts the burden of proof towards producers, manufacturers, importers. It reinforces the appreciation of the duty of care on the part of commercial providers and examines economic and non-economic consequences of action and inaction, going beyond cost-benefit analysis.

It also involves a wide range of stakeholders, which allows for policies to be created in a participatory manner and tested with inclusion of changing public opinions. This principle has also been enshrined in the Treaty on the Functioning of the European Union, article 191. It has also been mentioned in EP report on Civil Law Rules on Robotics. It seems that it is a robust tool that goes beyond risk management and allows for testing and creating policies around emerging issues that European Parliament and European Commission should encourage both internally and among Member States.
6. ROUNDTABLE DISCUSSION

The discussion started with a question regarding a possible **optimal way to predict potential job losses** due to AI, in particular in the light of some voices indicating that we would soon enter into a phase of jobless society. **Ms THUN** asked to include in these considerations equally job gains that can stem from AI.

**Prof. Dr MICKLITZ** indicated, on the basis of examples of steel, shipping and coal industry developments in the twentieth century, that safeguard measures regarding such industries can extend to millions of euros and still fail to keep industries alive.

**Prof. Dr SARTOR** noted that the recent literature points at the **potential to create a lot of new jobs**, although probably it will not be enough to substitute for jobs made redundant by AI developments. There is a need for **forward thinking rather than protectionism of redundant technologies**.

Prof. Dr SARTOR urged for a greater **focus on the way technologies are introduced** and more emphasis on technologies that **integrate with human workers** and complement workers rather than replacing them.

**Ms THUN** indicated that **legislators have difficulties to keep abreast with technological changes**. Ms THUN pointed that a **focus on education** is necessary and equally that such focus needs to be **communicated to European citizens** of various professional groups. The Chair reiterated that the technological change will be always more dynamic.

**Dr HUET** came back to the argument of **evidence based policy** and to use its **tools for assessment of real impact on jobs** based on examples and testing and not hypotheses from previous examples.

**Prof. Dr MICKLITZ** proposed a **sector by sector and profession by profession approach** giving an example of legal profession. What kind of lawyers we will need five years from now? Similarly, AI will have a huge impact on doctors and medical business. It is essential to **invest in the latest technologies**. As example of an industry that will require such an investment, Prof. Dr MICKLITZ indicated at the car industry which is very important in Europe and which will look very much different in five years from now. We cannot hope that we will be able to keep things as they are. **Technological developments are speeding up exponentially**.

**Mr KUZIEMSKI** indicated that there is no need for the EU to succumb to **technological determinism** and join the **AI technological race**. Europe could rather focus on **protection of consumer and citizens’ rights**.

**Ms Catelijne MULLER** (Rapporteur of the own-initiative opinion of the European Economic and Social Committee on Artificial intelligence – The consequences of artificial intelligence on the (digital) single market, production, consumption, employment and society) brought up the notion of **human in command** concerning not only the **command of technology** itself but also **when and how such technology is deployed**, including such important areas as health, education, etc.

**Prof. Dr SARTOR** reminded the notion of **fairness of behaviour of AI systems**, which should give the possibility to contest its actions by humans and the possibility of human involvement.
7. CONCLUSIONS BY MS RÓŻA THUN AND MR RICCARDO RIBERA D’ALCALA

Director-General Mr Riccardo RIBERA D’ALCALA thanked all discussants for their input into the discussion which helped in constructing a healthy dialogue on the issue of artificial intelligence.

He in particular welcomed the approach of the European Commission focused on opportunities and on what can be achieved with the use of artificial intelligence.

Mr RIBERA D’ALCALA reminded everyone that AI is also posing challenges, therefore it is important that the process of developing and implementing AI is guided with use of expertise and that the process is transparent and focused on protection of individual rights, including data protection.

He thanked the European University Institute and the current EP Visiting Fellow at the EUI, Mr Mariusz MACIEJEWSKI, indicating that the EP Fellowship contributes to smooth cooperation and dialogue between European Parliament and European University Institute.

Mr RIBERA D’ALCALA stressed the example of the EUI’s School of Transnational Governance as a frame where the discussion on artificial intelligence is well placed since opportunities and challenges of AI go beyond borders of Member States and require policy answers at EU level.

Ms Róża THUN (Chair of the Digital Single Market Working Group of the Committee for the Internal Market and Consumer Protection)(MEP) expressed hope for more frequent possibilities of discussion, roundtables and policy dialogues between European Parliament and European University Institute and thanking all participants concluded the EP-EUI roundtable.
EP-EUI Roundtable on

**Strategy for Artificial Intelligence in Europe**

organised in the framework of scientific cooperation between European Parliament and European University Institute

**Chair: Ms Róża THUN (MEP)**

27 February 2018, 13.00 – 14.30

Room - Brussels: Altiero Spinelli 5G3

Room - Florence: Badia Fiesolana, Emeroteca

**AGENDA**

13.00 - 13.05 Welcome speech - Mr Riccardo RIBERA D’ALCALA, Director-General, DG IPOL, EUROPEAN PARLIAMENT

13.05 - 13.15 Opening remarks - Ms Róża THUN (Chair of the Digital Single Market Working Group of the Committee for the Internal Market and Consumer Protection)(MEP), Chair of the EP-EUI Roundtable

13.15 - 13.30 View from the European Commission – Policy Priorities in the Area of AI

- Dr Cecile HUET, Deputy Head of Robotics and Artificial Intelligence Unit, DG CNECT, EUROPEAN COMMISSION

13.30 - 14.00 View from Academia – Opportunities and Challenges in the Area of AI

- Prof. Dr Giovanni SARTOR, EUI - Citizens, markets, public opinion and AI
- Prof. Dr Hans-W. MICKLITZ, EUI - Consumer protection aspects of AI

14.00 - 14.10 Raising Awareness on AI Among Policy Makers on European and National Level

- Mr Maciej KUZIEMSKI, Fellow, School of Transnational Governance, EUI

14.10 - 14.25 Roundtable discussion on optimal strategy for AI in Europe

14.25 - 14.30 Conclusions by Ms Róża THUN (MEP) and Mr Riccardo RIBERA D’ALCALA, Director-General, DG IPOL
8. SHORT BIOGRAPHIES OF SPEAKERS

Mr Riccardo RIBERA D’ALCALA

Mr Riccardo RIBERA D’ALCALA is the Director-General of the Directorate-General for Internal Policies in the European Parliament. The Directorate-General managed by Mr RIBERA D’ALCALA organises the work and coordinates the activities of around 20 permanent and special committees dealing mostly with legislative, institutional and budgetary issues in the internal policy areas of the European Union.

Mr RIBERA D’ALCALA graduated in Law with 110/110 cum Laude from Federico II University of Naples with a thesis on the evolution of the external competence of the EC, postgraduating in International Law and European Law. After an initial experience as researcher in international relations at the University of Florence, he joined in the early 1980s the European Commission and then the European Parliament, where he covered different posts.

He was Counsellor for International Relations for EP President Egon Klepsch (1992-1994), Head of Cabinet of President Nicole Fontaine (1999-2002) and Cabinet Director of President Pat Cox (2002-2004). From 2004 to 2007, he was Director for Legislative Coordination in DG Internal Policies dealing with the horizontal coordination of legislative matters and better lawmaking. He is the author of various articles on EU related matters, and has participated as a speaker in a variety of Conferences and Seminars.

Fluent in French, English, German, Spanish and Italian (mother tongue). Knowledge of Dutch and Portuguese. Mr RIBERA D’ALCALA is EP observer member of High Council of the European University Institute (Florence) and is a member of the Board of Jean Monnet Foundation.

Ms Róża THUN

Ms Róża THUN received her Master’s degree in English Philology from Jagiellonian University in Krakow.

She was first elected to the European Parliament in the 2009-2014 cycle and afterwards, in the current cycle 2014-2019. Before that she was Head of the European Commission Representation in Poland from 2005-2009. She is a member of the Internal Market and Consumer Protection Committee.

She was a leading supporter of the Spinelli Group, a group created to foster the strive for further federalization of the European Union. She was also nominated for the prize of “best MEP” in 2011 and in 2013 by “The Parliament Magazine” in the Internal Market and Consumer Protection category.
Dr Cécile HUET

Dr Cécile HUET is Deputy Head of the Unit "Robotics and Artificial Intelligence" at the European Commission. This unit funds and assists beneficial robotics and AI developments within Europe. The unit is in charge of one of the world's largest civilian programme in robotics with a budget of €700 million EU funding from Horizon 2020, supplemented by €2.1 billion from the European robotics industry in the context of the Robotics Public-Private Partnership. Moreover, this unit is at the heart of the new Communication on Artificial Intelligence for Europe.

Cécile joined the European Commission in 2001, and the unit dealing with Cognitive Systems and Robotics since its creation in 2004. Before joining the EC, she worked for the industry in the field of signal processing after a post-doc at the University of California Santa Barbara and a PhD at University of Nice Sophia Antipolis.

In 2015, she was selected as one of the "25 women in robotics you need to know about".

Prof. Dr Giovanni SARTOR

Prof. Dr Giovanni SARTOR is a part-time professor in legal informatics at the University of Bologna and a part-time professor in Legal informatics and Legal Theory at the European University Institute of Florence.

He obtained a PhD at the European University Institute (Florence), worked at the Court of Justice of the European Union (Luxembourg), was a researcher at the Italian National Council of Research (ITTIG, Florence), held the chair in Jurisprudence at Queen’s University of Belfast, and was Marie-Curie professor at the European University of Florence.

He has been President of the International Association for Artificial Intelligence and Law. He has published widely in legal philosophy, computational logic, legislation technique, and computer law. He is co-director of the Artificial intelligence and law Journal and co-editor of the Ratio Juris Journal.

His research interests include legal theory, logic, argumentation theory, modal and deontic logics, logic programming, multiagent systems, computer and Internet law, data protection, e-commerce, law and technology, aviation law, human rights. He is the author of several books.
Prof. Dr Hans MICKLITZ

Since 2007 Prof. Dr Hans MICKLITZ is the Professor for Economic Law at the European University Institute, Jean Monnet Chair of Private Law and European Economic Law at the University of Bamberg (emeritus). He is also the Head of the Institute of European and Consumer Law (VIEW) in Bamberg. He conducted consultancies for OECD in Paris. He is also Jean Monnet Fellow at the European University Institute Florence, Italy, visiting professor at the Somerville College at the University of Oxford, co-founder of the Centre of Excellence at the University of Helsinki. Holder of an ERC Grant 2011-2016 on European Regulatory Private Law. Furthermore, he also conducted other consultancies for ministries in Austria, Germany, the UK, the European Commission, OECD, UNEP, GIZ, and non-governmental organisations.

Mr Maciej KUZIEMSKI

Mr Maciej KUZIEMSKI is a policy fellow at the School of Transnational Governance at the European University Institute.

He studied Political Science at the University of Warsaw and amongst his previous professional activities are speechwriting and advising to senior government officials as well as managing democracy assistance programs of the Lech Walesa Institute.

Until November 2016, Maciej was the President of the Board of Coalition for Polish Innovations, a cross-sector network seeking to raise innovativeness of Polish economy. Maciej sits on boards of a nonprofit publishing house and a social enterprise helping refugees. He also sits on the boards of a nonprofit publishing house Res Publica, and a social enterprise Kuchnia Konfliktu.
9. PRESENTATIONS

Presentation by Dr Cecile HUET

View from the European Commission
Policy Priorities in the area of AI

Cécile Huet, Deputy Head of Unit
Robotics & Artificial Intelligence

Directorate-General for Communication Networks, Content & Technology
European Commission

Outline

- EC AI-Robotics initiatives: past /present
- Future priorities for EU coordinated action
  -> AI-on-demand Platform
  -> Communication
Outline

- EC AI-Robotics initiatives: past /present
- Future priorities for EU coordinated action
  - AI-on-demand Platform
  - Communication

Why supporting AI?

NEED FOR INTELLIGENCE IN ARTIFICIAL SYSTEMS
- To achieve useful tasks, increase efficiency & flexibility
- To ensure intuitive interaction and cooperation

BENEFIT FOR EUROPE’S ECONOMY
- Essential for productivity and competitiveness
  Reindustrialisation, ageing workforce
- Growth potential
  Service markets, double-digit growth

BENEFIT FOR EUROPEAN CITIZENS
- Essential to address societal challenges
  Health, ageing population, environment, transport, security, etc.
  Improve quality of life at work and at home
Barriers to deployment

Technological performance issues
- E.g. Robustness, reliability, accuracy, scalability
Ethical, legal and societal issues
Public acceptance

Addressing barriers

Technological performance issues
- Significant funding for cognitive systems, robotics and AI since 2004
- About €80m funding for new projects in robotics per year
- More than ongoing 80 projects currently
- Emphasis: "smartness"
- Total Cognitive Systems and Robotics funding about €550m between 2007 and 2013
PUBLIC-PRIVATE PARTNERSHIP IN ROBOTICS – SPARC

Set up in 2014 by the European Commission and the European robotics industry & academia, with two main aspects:

1. TO DEVELOP A RESEARCH & INNOVATION STRATEGY
   - Strategic Research Agenda & Multi-Annual Roadmaps define priorities for EC funding

2. COMMITMENT TO INVEST 2014–2020
   - Up to €700m from the EU (the largest civilian funding programme in the world)
   - Additional €2.1bn from the European robotics industry

TECHNOLOGICAL PERFORMANCE ISSUES

H2020 FUNDING PROGRAMME [2014-2020]:

- AI ALSO IN
  - Future and Emerging Technologies (open/pro-active/FET Flagship)
    e.g. Human Brain Project – €120M
  - Big data, data analytics – €250M
  - IoT pilots
    e.g. on Autonomous Vehicle – €20M
  - AI-on-Demand Platform – €20M (to be continued in 2020)
  - Societal Challenges
    Health (SC1) / Agri (SC2)
  - CyberSecurity – Smart Manufacturing, etc.
**Goal: smart systems helping us everywhere every day**

**Important application areas**

- **Manufacturing & Industry**
  - assembling cars, moving pallets & other goods

- **Healthcare**
  - minimal-invasive surgery

- **Home care**
  - assisting elderly & disabled people

- **Agriculture**
  - pruning, weeding, spraying, monitoring & milking

- **Security**
  - inspection of pressure vessels & storage tanks used in oil, gas & petrochemical industry; rescue missions

- **Environment**
  - cleaning waste, water and air

- **Transport**
  - autonomous vehicles such as cars & drones

- **Entertainment**
  - cinema & educational games

**LEGAL & SOCIETAL ISSUES**

- **Safety**
  - especially smart, collaborative robots

- **Liability**
  - challenges posed by notably increased autonomy

- **Data protection & ownership**
  - sophisticated and capable sensors and powerful processing

- **Employment**
  - effects on the economy, impact on the workplace
ADDRESSING BARRIERS

- **Safety**
  - Funding projects on Safety certification, support to standardisation

- **Liability**
  - Products Liability Directive (PLD)

- **Data protection & ownership**
  - General Data Protection Regulation
  - Data ownership, free flow of data and data access and transfer
    - EC communication on Building a European Data Economy.

- **Employment**
  - Digital Jobs and Skills Coalition

ADDRESSING BARRIERS

Digitising European Industry Strategy
Realising the potential of digitisation

- **TECHNOLOGY**
  - AI: one of the 3 technology pillars
- **SMART REGULATION FOR SMART INDUSTRY**
  - Adapting legislation when necessary
    - PLD/MD under evaluation: fit for purpose?
  - Balance between innovation and protection
- **Support to Deployment (Digital Innovation Hubs) standard & testbeds**
- **SKILLS**
  - Preparing Europeans for the digital age
Public Acceptance

❖ 2017 Eurobarometer survey
- 72% of respondents think robots steal people’s jobs
- 84% of respondents agree that robots can do jobs that are too hard/dangerous for people
- 68% agree that robots are a good thing for society because they help people

❖ Uncertainties
- Privacy, safety, the transparency, fairness and bias of the decisions taken by these systems

Public Acceptance

❖ ESSENTIAL TO UNDERSTAND AND ADDRESS THE CONCERNS
❖ ESSENTIAL TO INFORM ACCURATELY
-  Showcases the Reality
- e.g.: European Robotics Week: public meets the robots
Outline

- EC AI-Robotics initiatives: past / present
- Future priorities for EU coordinated action
  -> AI-on-demand Platform
  -> Communication
WP18-20
EUROPEAN AI-ON-DEMAND PLATFORM

- Issue 1: Scattered European S&T excellence
- Issue 2: Huge investment abroad
- Issue 3: AI potential not fully exploited in Europe

STRATEGY: Develop the European AI on-demand platform

- Join forces in Europe: Build an AI Platform -> ecosystem integrating knowledge, capacity and access to data
- Invest in R&D in areas where Europe can lead
- Boost European industry competitiveness with AI and make European citizens benefit from AI (ageing, transport, etc.)

"One-stop shop"
- integrating tools and resources
- offering solutions and support to all users of AI to integrate such technology into application, products and services
Outline

- EC AI-Robotics initiatives: past /present
- Future priorities for EU coordinated action
  -> AI-on-demand Platform
  -> Communication

Background

- **October 2017 European Council:**
  invites the Commission to propose a European approach to Artificial Intelligence (AI) by early 2018.

- **DSM Mid-Term Review Communication1:**
  the Commission proposed to build up artificial intelligence (AI) capacities in Europe and deal with related ethical, legal, societal and socio-economic challenges.

1 (COM(2017) 228 final)
Communication – Q2 2018

Integrated approach structured around 3 Pillars:
- Boosting our technology and industrial capacity in AI
- Addressing new ethical, legal and societal issues related to AI
- Tackling socio-economic challenges

Mobilisation at high level of all stakeholders
- to develop the 3 pillars
- Including experts and civil society

Essential to join forces
- Mobilise all Member States & European Stakeholders
- Pool resources & work towards common goals
National Initiatives

- Event EC & EurAI (European Association for Artificial Intelligence) in January
- 20 MS presented their activities
- Report coming soon

Conclusions – Policy priorities

- Capacity: Research – Development – Innovation
- Ethical issues: European values of dignity and privacy
- Legal issues: fit for purpose
- Social issues: awareness – acceptance – social sciences and humanities
- Economic issues: re/up-skilling / AI & robots to help us

ENORMOUS POTENTIAL: EUROPE SHOULD NOT MISS THE OPPORTUNITIES AHEAD!
THANK YOU
Legal issues of AI

Giovanni Sartor

Introduction:
The great convergence: AI and the Internet
The great convergence of AI and the Internet

• **Growth**
  - **AI**: From toy examples to a host of real applications: speech and image recognition, question-answering, recommendation, translation, planning, autonomous mobile robots, etc.
  - **The Internet**: From message exchanges to the universal medium for delivery of all kinds of private and public services: from human to algorithmic intermediation in shopping, banking, information seeking, access to knowledge, etc.

• **Change**
  - **AI**: From logic-driven AI, based on human-made representations of knowledge and logical inference, to data-driven AI, based on machine learning from examples and probabilistic correlation
  - **Internet**: From an infrastructure for human communication to a global interconnected data infrastructure

What they do and want

• **What AI does**
  - It applies learning methods to vast sets of examples to discover correlations
    - past purchases, views of web pages, medical history, criminal behaviour, etc.
    - it makes classifications and predictions based on correlations
    - Who is more likely to buy, view, suffer, commit, etc., what?
  - It learns from past successes and failures in classifying and predicting

• **What AI wants**
  - It wants the largest sets of examples
  - Including as much data as possible to enable the discovery and exploitation of new correlations

• **What the Internet does**
  - It enables most human interactions (mail, phone, etc.)
  - It links billions of connected devices (computers, smartphones, cars, etc.)
  - It provides vast a vast set services (banking, shopping, news, etc.)
  - It collects all kind of data from physical and virtual environment (street cameras, online recordings, etc.)

• **What the Internet wants**
  - new AI-enabled services, providing intelligent and individualised solutions
  - the ability to extract useful knowledge from the data it collects.
Convergence!

- The Internet provides AI with the data it needs
- AI provides the internet with the ability to exploit the data

The Internet & AI promise and catch

- The Internet & AI infrastructure can deliver good:
  - It improves efficiency and effectiveness in many domains
  - It allows for a world-wide generation and distribution of knowledge and solutions
- HOWEVER
- To satisfy data-hungry AI applications, the Internet tends to become an infrastructure for surveillance
  - All facts, even the apparently insignificant ones, are useful for learning algorithms, scalability is no problem
- We cannot evade the Internet & AI infrastructure
  - Many services are now only provided within the AI & Internet infrastructure
  - They are distributed in the general purpose devices that have become indispensable (e.g., smartphones)
- We are unable to argue effectively against suggestions, recommendations, assessments, and attempts to influence and manipulate
  - All of this is possibly invisible to us, and
  - in any case it is based on superior AI knowledge of past cases (huge data set)
Data from where?

- Data collected “in the wild”
  - Through digital sensors
  - Through physical sensors
- Data collected as a side effect of the provision of services
  - The provision of services is used
    - To collect data about the user
    - To learn from user’s requests and reactions
- Data monopolies
  - Monopoly over services and infrastructures (the network effect) leads to monopoly over data collected as a side product

Data for what purposes?

- By profit-making actors
  - Increase efficiency, cut costs, through better performance or substitution of labour
  - Sell or deploy new applications and services (e.g., personalised medicine)
  - Two-sided market: capture users, to send them advertising, suggestions, and services, get revenue for advertisers/persuaders
  - Monitor, influence/anticipate purchasing and other behaviour of relevant counterparts: competitors, clients, employers, etc.
- By governmental actors
  - Increase efficiency, cut costs
  - Provide better services (e.g., personalised medicine), manage complex systems (e.g., traffic)
  - Anticipate/control direct behaviour (for security and other purposes)
- By criminals
  - Steal, fraud, impersonate, attack, blackmail, etc.
- By the third sector
New issues

What issues?

• **Liability** for harms caused by unpredictable/autonomous AI behaviour (robotics)
  • How to support the development and deployment of physical and virtual agent, while ensuring safety and compensation for harms

• **Privacy/data protection/surveillance**
  • How to enable AI-systems to collect the data they need to provide useful services, while respecting privacy and data protection
  • How to enable AI-systems to infer further information from collected data, without violating privacy and data protection (reidentification, inference of sensitive information)

• **Discrimination**
  • How to enable AI to make or suggest choices, while preventing the unfair treatment of individuals

• **Persuasion**
  • How to enable AI to make useful suggestions, while avoiding individuals being manipulated and cheated
• **Data-dominance**
  - How to enable AI & data owners to make better choices and provide better services, while ensuring an even playing field for competitors.

• **Transparency**: how to allow for the use of advanced learning methods, while enabling those affected by algorithmic classifications and decisions to assess the behaviour of AI according to understandable reasons or mechanisms:
  - Why a certain response to a query
  - Why a certain suggestion
  - Why a certain decision

**What responses?**
Why the law should deal with Big-Data & AI

- **Privacy & Data protection**
  - Right to lawful and proportionate processing of personal data
    - Principles of necessity (purpose limitation) and data minimisation vs AI-driven legitimate interests
  - Right to control the processing over their data
    - Right to be informed, to terminate unlawful processing, to withdraw consent, to object on personal grounds

- **Interest in fair algorithmic treatment**
  - Interest not to be subject to unfair differentiated treatment by algorithmic decisions (price differentiation, lending, employment, insurance, sentencing, etc.)

- **Interest in algorithmic transparency**
  - Interest to know the reasons why I have obtained a certain algorithmic response (internet searches, suggestions for purchases or news, etc.)
  - Interest to know to know the reasons why a certain algorithmic decision has been given (as above)

- **Interest in fair algorithmic interaction**
  - Interest not to be misled or manipulated by algorithmic processes (not to be the object of false or predatory advertising, e.g. loans, gambling)
  - Interest in not being swayed in social and political opinion by biased messages

- **Interest in fair algorithmic (cognitive) competition**
  - Interest in accessing data sources that are available to data-monopolies
  - Interest in accessing AI algorithms that are available to big players

- **A fresh approach to competition and knowledge?**
  - In the past, small players could have access to local knowledge that was unavailable to big players
  - Today, thanks to Big Data + AI this may not be the case: algorithmic giants may have larger local knowledge, and a better capacity to exploit it
Trade-offs

• There may be difficult trade-offs:
  • performance vs transparency,
  • security vs transparency
  • performance vs privacy,
  • transparency vs privacy,
  • economic freedom vs all the rest,
  • national security vs privacy, etc.

• Innovative technological solutions are needed to find optimal solutions (e.g., to improve transparency without significantly impairing performance)

The GDPR

• The GDPR is an important progress
  • Increased users entitlements over the processing their personal data
  • A preventive approach
  • Right to information and control over algorithmic decisions based on personal data

• No full solution: legal issues pertaining to the relation between Big-Data & AI and citizens are much larger than the unfair processing of personal data.

• A broader perspective is needed for future regulation!
Thanks for your attention!

Giovanni Sartor
giovanni.sartor@eui.eu
The proceedings summarise the EP-EUI roundtable on the Strategy for Artificial Intelligence in Europe. The roundtable with academics from European University Institute involved MEP Róza THUN (Chair of the Digital Single Market Working Group of the Committee for the Internal Market and Consumer Protection), MEP Mady DELVAUX (MEP), Mr Riccardo RIBERA D’ALCALA, Director-General of DG IPOL, European Parliament, Ms Catelijne MULLER (European Economic and Social Committee), and Dr Cecile HUET, the Deputy Head of Robotics and Artificial Intelligence Unit in DG CNECT.

This document was prepared by Policy Department A in the framework of scientific cooperation between European Parliament and European University Institute.