



Journal
of Danubian
Studies
and Research

The Notion of “Big Data” and the New Evolution of Artificial Intelligence

Florina Mateescu¹

Abstract: It is no longer a novelty that more and more electronic devices are used, in general, and that production processes are becoming increasingly digitized. We find that vast amounts of data are generated every day in the economy, as well as through people's personal and social activities. Data is an important component in the European Union's digital transformation process. Artificial intelligence is based on “smart information”, and its development depends on how this data will be managed in Europe. We want to capture the important aspects related to this topic, using the logical method, the comparative method, the sociological method. We will analyze, synthesize, compare the various legislative provisions, correlating them with technical explanations, so as to reveal the importance of artificial intelligence in contemporary society. Reading this study can be useful both for students and teachers, lawyers, magistrates and other legal professionals, but also for those who are not in the field, but want to document themselves on the presented topic. The novelty element of our study will consist in merging the technical and legal notions proposed by the European Union, in an own interpretation and in a personal vision, so that the topicality of this subject emerges.

Keywords: law; innovation; virtual space; technology

What Is “Big Data”?

“Technical” details will always be an integral part of a pertinent and complete analysis in any field. Even in art there is theory and rules to apply. Of course, it should be noted that even opera music has a “mathematical explanation”, namely: musicology.

¹ PhD in progress, Doctoral School of Legal Sciences and International Relations, University of European Studies of Moldova, Address: Strada Ghenadie Iablocikin 2/1, Chişinău 2069, Corresponding author: florina_dede@yahoo.com.

So, in a field that is by itself technical, of course all the information that makes up its definition must be disclosed all the more.

Therefore, we will learn about “big data” that, in the view of the European Parliament,¹ these are large volumes of data, the complexity of which requires the development of new technologies - such as artificial intelligence - designed to process them.

This data can be produced by people: in mobile applications, on the Internet, including social networks or through online transactions, or in digital administrative records. But they can also be generated by machines, being collected by sensors from objects connected to the “internet of things”: smart cars, factories, GPS satellites, meteorological satellites.

The origin of the data belongs to different sources, but often it can be data of the same type. The most known example is that of GPS data, sourced from millions of mobile phones to alleviate traffic jams. However, it is not a rule that the data are of the same type, there can be combinations of them, such as medical records and the use of certain applications by patients. The technology allows the collection and analysis of this data very quickly, in order to obtain new perspectives.

So, the data represent information intended to convey a certain “state of fact” of reality or of some phenomena. Of course, the speed with which they are spread matters most in everyday society, because time has become an increasingly important and valuable resource.

In the following, we will try to observe how the rules will intervene so that “big data” does not lose its purpose of helping and facilitating human actions and so that the use of this data does not become harmful to people.

1. AI Legislation - Perspectives of the European Parliament

The European Parliament considers² that artificial intelligence is an important part of the digital transformation of society. There are major changes that have occurred and will occur with the help of AI, in terms of work, business, finance, health,

¹ <https://www.europarl.europa.eu/news/ro/headlines/society/20210211STO97614/big-data-definitie-avantaje-provocari-infografice>, accessed on 25.07.22;

² <https://www.europarl.europa.eu/news/ro/headlines/priorities/inteligenta-artificiala-in-ue/20201015STO89417/norme-privind-ia-ce-doreste-parlamentul-european>, accessed on 26.07.22;

security, agriculture and other fields. It is precisely for this reason that AI is a central element of the EU's Green Deal and the post-COVID-19 recovery.

In this context, the European Union is developing its first set of rules to manage the perspectives opened by artificial intelligence. At the same time, it also considers the threats it makes possible, so it wants to manage the impact of AI on individuals, society and the economy. But the aim is also to create a prosperous environment for researchers, developers and European businesses. The Commission wants to stimulate private and public investments in AI technologies and invests, in this sense, 20 billion euros per year.

The Parliament - on the proposal of the Commission, presented on April 21, 2021 - is working to transform the European space into a global platform for artificial intelligence, which is worthy of trust.

Considering these changes, we will present the ideas of some European parliamentarians, making a “collage” of opinions. We will therefore research how exactly they see the change, in an “opinion poll” that we will compile and analyze in the following.

Axel Voss, Germany

The concern of parliamentarians predates the Commission's proposal on AI and consisted of the establishment of a special committee on artificial intelligence in the digital age (AIDA). It aimed to analyze the impact of artificial intelligence on the EU economy. The final report of the AIDA commission, adopted by the plenary in May 2022, proposes an “EU Roadmap” on AI: a common, long-term position reflecting the EU's key values, objectives and values related to artificial intelligence. Axel Voss, Member of the European Parliament, explains: “With this report we clearly demonstrate that AI will drive digitization and become a major factor in global digital competition”¹.

From a liability perspective, Axel Voss ruled that the purpose of an AI liability regime is to strengthen trust by protecting citizens, while encouraging innovation by providing legal certainty to businesses.

¹ <https://www.europarl.europa.eu/news/ro/headlines/priorities/inteligenta-artificiala-in-ue/20201015STO89417/norme-privind-ia-ce-doreste-parlamentul-european>, accessed on 26.07.22;

As far as we are concerned, we consider that the civil liability of AI is a subject that requires a lot of attention and exact rules, which do not allow harm to human beings, but facilitate certain operations and services.

Ibán García del Blanco, Spain

Also on 20 October 2020 Parliament adopted three reports, outlining how the EU can best regulate artificial intelligence to boost innovation, ethical standards and trust in the technology.

Deputies believe that the rules must focus on the human factor. As Ibán García del Blanco states: “Citizens are at the center of this proposal.” That is why the “Report” proposes ways to guarantee safety, transparency and accountability, prevent prejudice and discrimination, encourage social and environmental responsibility and ensure respect for fundamental rights.

We believe that, of course, the human being must always be put in the foreground, and technology must have certain limits, which do not violate the rights of individuals. Whatever artificial intelligence will be able to achieve, it must stop where a person's right begins.

Stéphane Séjourné, France

Regarding intellectual property rights, the Parliament highlights the importance of an efficient system for the future development of AI and brings to the fore the issue of patents and new creative processes. Specifically, according to another member of the European Parliament, Stéphane Séjourné, among the important issues that need to be resolved is the intellectual property of a product developed entirely on the basis of AI.

Another important issue is that of intellectual property rights, when a product has autonomy of action from human control. The rules must be as encouraging for production as they are carefully formulated. That is, they must stimulate the development of AI technologies, without allowing harm to people and society.

Gilles Lebreton, France

In the fields of: military, justice and health, January 20, 2021 brought new proposals to the European Parliament, for the use of AI in their regard.

“AI should not replace or relieve people of the responsibility they bear,” said the deputy in charge of these proposals. His other colleagues pointed out that it is necessary to always have human supervision of the AI systems used in defense.

Parliament's demand that all lethal weapons with autonomous artificial intelligence be banned was also reiterated.

This is because the right to safety of people could be in great danger because of weapons equipped with AI, that is why it is salutary that the European Parliament insists that they do not exist.

Also, it is absolutely necessary that the man can always control the technique and its results. In this way, a safe common environment is preserved and harmful results for humanity are avoided (Mateescu, 2020, p. 69).

On the other hand, we will also bring a counterargument to what the French deputy said. Namely, that, in a “futuristic scenario”, if the total independence of some machines or objects or products that carry out their actions on the basis of AI will be reached, then a transfer of civil liability to the respective entity could be discussed.¹

Sabine Verheyen, Germany

Another important date in the “AI calendar” - May 19, 2021. On that day, a report was adopted in Parliament, which contains rules for the use of artificial intelligence in education, culture and the audiovisual sector. These technologies must protect diversity, avoiding gender, cultural or social prejudices.

“Artificial intelligence must be trained not to reproduce discrimination,” said Sabine Verheyen.

Of course, people's right to equality, like all other rights, must be respected. The right to equality means the absence of discrimination of any kind, and technology must “keep up” with this freedom of the individual.

Deirdre Clune, Ireland

“To take full advantage of the possibilities brought by AI, we must offer businesses and “start-ups”² space for innovation and supporting investments,” said the deputy.

In this regard, the Parliament asked the Commission to develop AI technology on digital transformation, which can support the European public and private sectors in the digital transition.

¹ Mateescu F., *European Integration - Realities and Perspectives. Proceedings*, Galați, 2021, p. 464;

² „a fledgling business enterprise” = a developing business - <https://www.merriam-webster.com/dictionary/start-up>, accessed on 28.07.22;

In the business environment, technology plays a very important role because it helps to produce services and objects in a shorter time than in the past and offers a much smaller margin of error than the human factor. That is why the development of AI in this sector must be encouraged.

Petar Vitanov, Bulgaria

To combat discrimination, the deputies requested, on October 6, 2021, assurances for the use of artificial intelligence in law enforcement actions. Specifically, it called for a permanent ban on automatic identification of people in public spaces and the use of algorithms in a transparent way.

“There is no question of whether AI systems can provide discriminatory and racially biased results. In fact, we know for sure that this is how things are,” said Petar Vitanov.

Unfortunately, AI technology can also produce abuses. These occur because the “virtual space” is more difficult to control, and the actions that originate there or the data that arrive there, most of the time cannot be monitored and therefore sanctioned, when they become harmful.

It is therefore desirable that the rules be restrictive, to stop abuses that are so concrete, but which happen in an apparently imprecise environment.

2. Opportunities of Using Big Data

After we have understood what the notion of “big data” means and where artificial intelligence is heading, we will list some of the areas on which it can have an impact, precisely to understand why it is important:¹

- Industry. Big data helps companies innovate. This is possible because people's needs and desires are better analyzed, which facilitates the proposal of new products that satisfy users. This is because personal data is essential to the operation of the applications and platforms. Data can increase productivity and reduce costs; an example would be that through them sales can be anticipated, in smart factories.
- Environment. Satellite data contributes to the reduction of greenhouse gas emissions and helps to prevent natural disasters, such as wildfires, through timely

¹ <https://www.europarl.europa.eu/news/ro/headlines/society/20210211STO97614/big-data-definitie-avantaje-provocari-infografice>, accessed on 28.07.22;

intervention by the authorities. The efficiency of industrial production should also bring reductions in emissions and waste.

- Health. When analyzing large clinical data sets, such as anonymized medical records or data entered by patients in various applications, a faster diagnosis of the patient can be made. And better treatments and drug development while reducing costs is another benefit of using data.

- Agriculture. Data from satellites helps farmers make better use of resources such as water or sunlight, adapting crop care to changing environmental conditions.

- The public sector. Data and elements of advanced analysis increase the efficiency of public services and their transparency and can adapt services to everyone's needs.

- Transport. Traffic jams can be avoided by means of “big data” collected by GPS. Better monitoring and regulation of traffic flows also contributes to saving time and fuel and reducing CO2 emissions.

There are a multitude of advantages that data can produce in society. They can considerably ease human life and help in various fields. However, the problem of the limit in the transmission of this personal data remains. What is the necessary amount of information to improve certain services or areas and where does the abuse begin (the use of personal data without our consent)? The question will certainly find its answer in the new rules, which the European Parliament is developing.

3. Conclusions

A conclusion of the present research cannot exhaustively “dissect” the issue of the evolution of artificial intelligence. We cannot know exactly where science and technology are heading and what the future holds.

However, we can appreciate that human rights must remain paramount in relation to everything else: be it science, technology, AI. The right to privacy cannot be violated, even if the “online space” is full of people's information. The limit between the improvement of human life and the abuse that AI can determine is a very fragile one, “capable” of easily generating disastrous results for the privacy of personal life.

Precisely for this reason, a regulation of this vast and complex field is the most suitable solution so that everything that happens in the virtual environment corresponds to the law and obeys it.

We will recall the well-known example of the “sale” of personal data that an Internet platform allowed, for electoral purposes.¹ Of course, such an incident gave rise to mistrust in the virtual world, where it seems that everything remains unseen and that users are in control of what they post, at any moment. The surrounding reality, however, demonstrated the opposite and brought to public consciousness the idea that life is not something that needs to be exposed moment by moment. And if there is such a desire, then users must take the risk of a “disambiguation” of their private life.

We can conclude that AI is already a component of contemporary society and that it must be integrated as such, so that it represents an advantage in everyday life, and not a source of abuse.

Bibliography

[https://www.europarl.europa.eu/news/ro/headlines/priorities/inteligenta-artificiala-in-ue/20201015STO89417/norme-privind-ia-ce-doreste-parlamentul-european](https://www.europarl.europa.eu/news/ro/headlines/priorities/inteligenta-artificiala-in-ue/20201015STO89417/norme-privind-ia-ce-doreste-parlamentul-european;);

<https://www.europarl.europa.eu/news/ro/headlines/society/20181005STO15108/claude-moraes-despre-scandalul-cambridge-analytica>;

<https://www.europarl.europa.eu/news/ro/headlines/society/20210211STO97614/big-data-definitie-avantaje-provocari-infografice>;

<https://www.merriam-webster.com/dictionary/start-up>;

Mateescu F. (2020). *Promovarea valorilor social-economice în contextul integrării europene/ Promotion of social-economic values in the context of European integration*. Chișinău, 2020;

Mateescu F. (2021). Exercise Capacity and Usability of AI Subjects. *EIRP Proceedings*, Vol. 16, No. 1.

Pușcă A. (2018). Legal Aspects on the Implementation of Artificial Intelligence, <https://eudl.eu/pdf/10.4108/eai.13-7-2018.164174>.

Pușcă A. (2019). Should We Share Rights and Obligations with Artificial Intelligence Robots?, https://link.springer.com/chapter/10.1007%2F978-3-030-51005-3_33.

Raportul conținând recomandări adresate Comisiei referitoare la normele de drept civil privind robotica, din 27.1.2017/ The report containing recommendations addressed to the Commission regarding civil law rules regarding robotics, dated 27.1.2017, https://www.europarl.europa.eu/doceo/document/A-8-2017-0005_RO.html;

¹<https://www.europarl.europa.eu/news/ro/headlines/society/20181005STO15108/claude-moraes-despre-scandalul-cambridge-analytica>, accessed on 29.07.22.

Raportul Parlamentului European din 27.01.2017, care conține recomandări adresate Comisiei referitoare la normele de drept civil privind robotica/The European Parliament's report of 27.01.2017, which contains recommendations addressed to the Commission regarding the rules of civil law regarding robotics, https://www.europarl.europa.eu/doceo/document/A-8-2017-0005_RO.html.

„Rezoluția Parlamentului European din 12 februarie 2019, referitoare la o politică industrială europeană cuprinzătoare în domeniul inteligenței artificiale și al roboticii” - https://www.europarl.europa.eu/doceo/document/TA-8-2019-0081_RO.pdf.