EU AI ACT WENT LIVE:

EUROPE ENTERED INTO NEW ERA

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Abstract:
The current paper aims at tracing the Regulation (EU) 2024/1689 development and its impact on business in the European Union. The stages of the White paper are sequentially presented and augmented due to the echo initial announcement has created. The core value of the regulation – the risk-based approached of artificial intelligence – is interpreted in the context of the risk management concept. The main stakeholders are presented.
The papers investigate the following hypothesis: "the Regulation (EU) 2024/1689 provides new opportunities for businesses in the European Union and brings Europe into a new technological era, that of artificial intelligence".
The new business opportunities are outlines as a result of the paper and their impact on the new technological Europe.

Keywords: *artificial intelligence, European union, regulation*
JEL: *C51, C52, C53, C65, C67, L21, L22, L25*

1. Regulation (EU) 2024/1689 overview

On August 1, 2024, the European Artificial Intelligence (AI) *Regulation (EU) 2024/1689* becoming known as EU AI Act entered into force – the world's first comprehensive regulation on AI. It aims to limit AI processes that pose unacceptable risks, set clear requirements for high-risk systems, and imposes specific obligations on implementers and providers but also to provide incentives to the business to increase of the competitive advantages in deep technology and to claim of the global leadership in trustworthy artificial intelligence.

Within the regulation the term "artificial intelligence" was considered as a "*rapidly involving set of technologies that can deliver multiple economic and social benefits across the spectrum of industries and social activities*". Compared to the first definition of the term derived by John McCarthy in 1956 that has been considered as "*the science and engineering of making intelligence machines*", the current definition emphasize on the multiple technologies used to serve to the economic growth but also to provide protection and benefits to the society.

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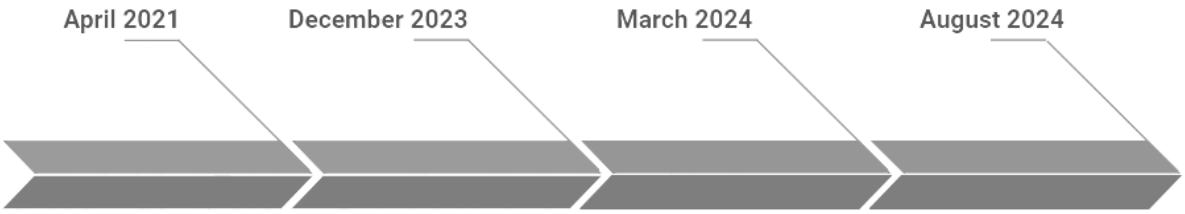
Figure 1. EU AI Act timeline



Source: author's figure

The proposal of the regulation was presented for the first time in April 2021 and has been wide discussed among different counterparties as business owners and governments at the global level[2] (see Figure 1). It was expected to be adopted and went into Force in April 2023, being trasponented into the local legislation in all the affected countries in the year 2022. In the spring of year 2023, generative AI, namely, Chat-GTP was introduced and in short period it has been widely applied. This unexpected AI was the reason European commission to postpone the agreement on the rules of artificial intelligence and to start analyzing the GPT models issues. In March 2024 it has been decided by the European Commission that GPT models will be considered as high impact general purpose AI models, posting systematic risk. For this reason these models have to undergo through evaluation and have to be reported to European Commission. The final version of AI act has been adopted and the European authorities proceed to entering into force and publication. The final version of *Regulation (EU) 2024/1689* (EU AI Act**)** has been published in an official journal and on August 1, 2024 and entered into the force setting number of deathliness.

With the given regulation on Artificial intelligence – the world's first comprehensive regulation on AI, EU aims at providing incentives for the business to increase AI application usage and to support EU authorities to follow the goal to have a global leadership in trustworthy AI[3].

[2] European Commission, Proposal for a Regulation of the European parliament and of the Council laying down harmonised rules on artificial intelligence (artificial intelligence act) and amending certain union legislative acts, (data.consilium.europa.eu) Brussels, 21.4.2021

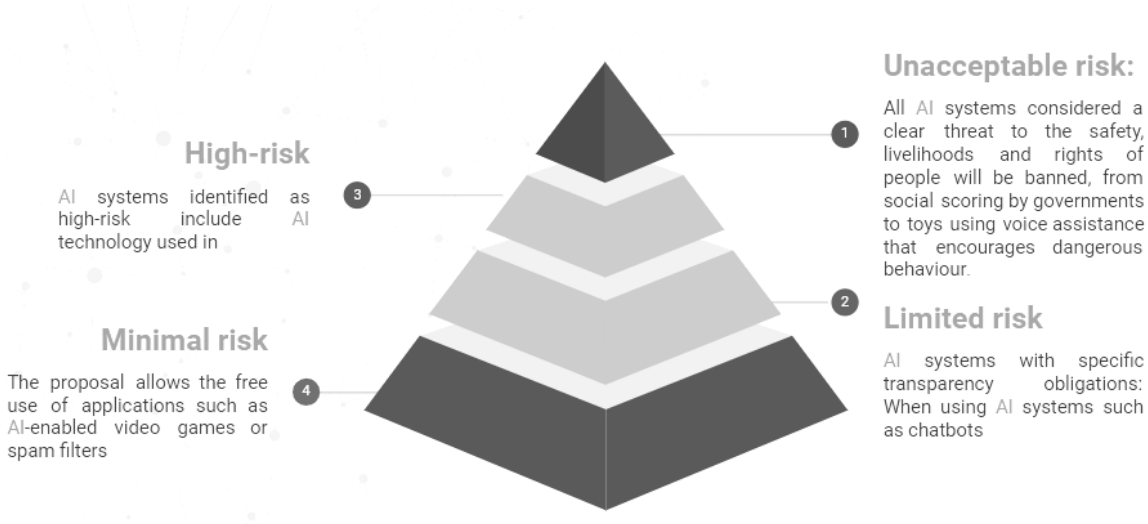
[3] https://eur-lex.europa.eu/eli/reg/2024/1689/oj

2. Affected parties and risk categories

The legislative framework is applied to both public and private entities inside and outside the EU if an AI system is placed on the EU market or its use has an impact on individuals in the EU. The obligations may apply to both providers (e.g. the developer of a CV screening tool) and those implementing AI systems (e.g. a bank that has purchased the CV screening tool). There are some exceptions to the regulation, such as: research, development and prototyping activities, AI systems that are designed exclusively for military and defence purposes or for national security purposes, etc.

This act introduces a uniform framework across EU countries, based on a forward-looking definition of AI and a risk-based approach (see Figure 2)[4]:

Figure 2. A risk based approach



Source: digital-strategy.ec.europa.eu

[4] Mancheva, Galia, European regulatory framework on artificial intelligence in the SME sector – a risk based approach, In: Artificial intelligence in the field of security – advantages and threats, Plovdiv, 2022, pp. 175-179.

Minimal risk: For most AI systems, such as spam filters and AI video games, the AI Act does not introduce requirements, but companies can voluntarily adopt additional codes of conduct.

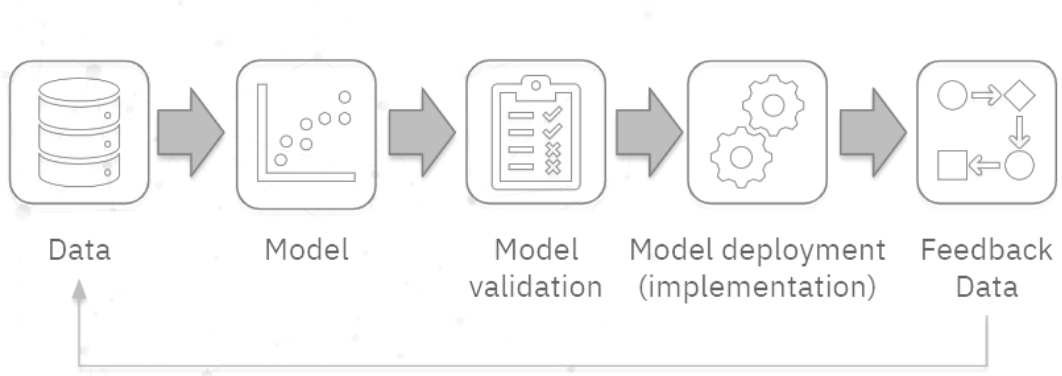
Specific transparency risk (Limited risk): systems such as chatbots must clearly inform users that they are interacting with a machine, and certain AI-generated content must be labelled as such.

High risk: High-risk AI systems, such as AI-based medical software or AI systems used for recruitment, must meet strict requirements, including risk mitigation systems, high-quality datasets, clear information for users, human oversight, etc.

Unacceptable risk: For example, AI systems that enable "social scoring" by governments or companies are considered a clear threat to people's fundamental rights and are therefore prohibited.

It is very important to point out that with the given levels of risk and categorization of the AI system, we may conclude that first of all, EU aims at providing its citizens safety and less data collection and distribution. And secondly, EU aims at providing clear and transparent rules on AI systems, applied on European countries.

Figure 3. High risk system



Source: IBM

Due to the Regulation (EU) 2024/1689, article 3, point 1 an artificial intelligence high-risk system (AI system) is defined as: "*A machine-based system designed to operate with varying*

levels of autonomy and that may exhibit adaptiveness after deployment and that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments"[5].

Thus, an AI system can be explained by five main elements (see Figure 3):

- First element – Data – the stage where the data management is performed;
- Second element – Model – the stage where the algorithms and the model are developed;
- Third element – Model validation – the testing stage where the model performance meets the initially set algorithm expectations;
- Fourth element – Model deployment and implementation – the stage where the model is applied to the chosen system.
- Fifth element – Feedback data – the stage where the output can be seen.

Due to the risk management concepts and requirements stated in the regulation, the five element systems have to be revised on regular bases depending on European and local rules. The requirement is needed in order to ensure high quality and competitive advantage of European Union in global leadership in trustworthy AI.

3. AI act application and company benefits

The AI Act will apply two years after its entry into force on August 2, 2026, with the exception of the following specific provisions:

- the prohibitions, definitions and provisions relating to AI literacy shall apply 6 months after the entry into force of the act, namely until 2 February 2025;
- the rules on governance and obligations relating to general-purpose AI shall apply 12 months after the entry into force of the act, namely until 2 August 2025;
- the obligations relating to high-risk AI systems, which are classified as high-risk because they are integrated into regulated products listed in Annex II (List of Union harmonisation legislation), shall apply 36 months after the entry into force of the act, namely until 2 August 2027.

[5] https://artificialintelligenceact.eu/assessment/eu-ai-act-compliance-checker/

Main business benefits can be summarized, as follows[6]:

- AI can be applied to most SME activities;
- AI can improve and facilitate the business of SMEs;
- AI enables SMEs to change business models and practices that will increase productivity and growth potential;
- AI can spark a new product revolution;
- AI will free employees from low-value-added tasks and provide an opportunity to reorganize and upgrade;
- AI will bring change to the company's internal value chain.

European Union takes significant steps to regulate artificial intelligence and promote investment in innovation and deep technologies. The European Innovation Council (EIC) plans to invest €1.4 billion in deep technologies and high-potential start-ups from the EU in 2025. This is set out in the EIC Work Programme for 2025, which includes an increase of €200 million compared to 2024. The aim is to foster a more sustainable innovation ecosystem in Europe.

4. Main outcomes and conclusions

Main outcomes could be found in **three** directions:

1) Human rights protection
2) Transparent rules for AI development and application
3) Incentives for deep technology development

Human rights protection can be seen in the risk based approach of the regulation, setting four levels of risk, prohibition of the applications causing unacceptable levels of risk and creation of clear rules for third risk level – high risk applications.

Transparent rules for AI development, application and incentives for deep technology development are seen in the service of the willingness of European union to emphasize on the deep technology development and an appetite to take place into the global AI competition.

Considering the fact that the European Innovation Council (EIC) plans to invest €1.4 billion in deep technologies which includes an increase of €200 million compared to 2024 and creation of sustainable innovation ecosystem in Europe, we can confirm the hipothesis, namly*: "the*

[6] Mancheva, G. (2022). European Union Regulatory Framework on Artificial Intelligence (SMEs). JOURNAL OF DEVELOPMENT STUDIES, 2. https://doi.org/10.52340/jds.2021.03

Regulation (EU) 2024/1689 provides new opportunities for businesses in the EU and brings Europe into a new technological era, that of artificial intelligence"[7].

As a conclusion we may say that with the world's first comprehensive regulation on AI, European Union declares an appetite of the global leadership in trustworthy artificial intelligence, currently leaded by the "frontrunners" China and USA but without having transparent rules and risk levels. For that purpose, clear guidelines and incentives have to be set for the business in EU in order to archive this goal. It is the business in EU that will be the lever for the Union to increase of the competitive advantages and to enter into new era – deep technology era.

It is very important to emphasize that with the *Regulation (EU) 2024/1689* European Union imposes strict rules on AI application and usage. Considering the fact that the current "frontrunners" China and USA do not apply strict rules on AI, with entering into force the world's first comprehensive regulation on AI, EU claim of the global leadership in trustworthy artificial intelligence. It is not about compensation of the gab with the "frontrunners", it is a pretension of global leadership with the world's first comprehensive regulation on AI, leveraging with incentives into deep technology.

References

European Commission, Proposal for a Regulation of the European parliament and of the Council laying down harmonised rules on artificial intelligence (artificial intelligence act) and amending certain union legislative acts, (data.consilium.europa.eu) Brussels, 21.4.2021.

European Commission, Commission Staff Working document, Impact assessment (data.consilium.europa.eu) accompaning Regulation of the European parliament and of the Council laying down harmonised rules on artificial intelligence (artificial intelligence act) and amending certain union legislative acts, Brussels, 21.4.2021, part ½.

European Commission, Commission Staff Working document, Impact assessment (data.consilium.europa.eu) accompaning Regulation of the European parliament and of the Council laying down harmonised rules on artificial intelligence (artificial intelligence act) and amending certain union legislative acts, Brussels, 21.4.2021, part 2/2.

European Commission, Proposal for a (aclanthology.org) Regulation of the European parliament and of the Council (data.consilium.europa.eu) On harmonised rules on fair access to and use of data (data act), Brussels, 23.2.2022. European Commission, ANNEXES to the Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions (www.europarl.europa.eu) Fostering a European approach to Artificial Intelligence, Brussels, 21.4.2021.

https://eur-lex.europa.eu/eli/reg/2024/1689/oj

Mancheva, G. (2022). European Union Regulatory Framework on Artificial Intelligence (SMEs). JOURNAL OF DEVELOPMENT STUDIES, 2.

https://doi.org/10.52340/jds.2021.03

[7] https://eur-lex.europa.eu/eli/reg/2024/1689/oj

Mancheva, Galia, European regulatory framework on artificial intelligence in the SME sector – a risk based approach, In: Artificial intelligence in the field of security – advantages and threats, Plovdiv, 2022, pp. 175-179
https://www.sciencedaily.com/terms/artificial_intelligence.htm
https://www.merriam-webster.com/dictionary/artificial%20intelligence
https://publications.jrc.ec.europa.eu/repository/bitstream/JRC118163/jrc118163_ai_watch._defining_artificial_intelligence_1.pdf
https://ec.europa.eu/regional_policy/sources/conferences/state-aid/sme/smedefinitionguide_en
OECD (2019[11]), Artificial Intelligence in Society, OECD Publishing, Paris, https://doi.org/10.1787/eedfee77-en
https://www.oecd-ilibrary.org/sites/01a4ae9d-en/index.html?itemId=/content/component/01a4ae9d-en