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AI in EU Law

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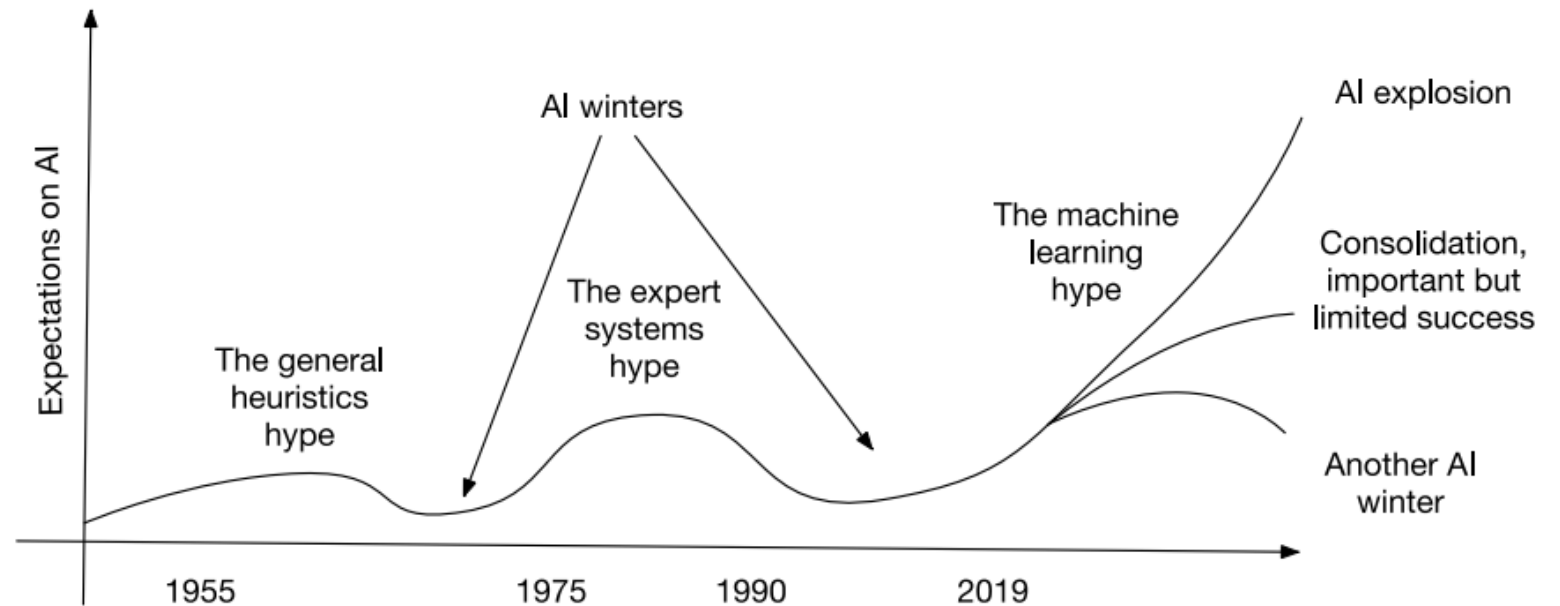
AI in EU Law

1. Background – is there a need to regulate (at all)?
2. AI, trust and responsibility/liability
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6. Summary/Conclusions

Background – is there a need to regulate AI?

Artificiell intelligens

- Established as a field of research in the **1950s**
- The most recent developments of AI is related to increased possibilities to collect, store and analyse large amounts of data (**big data**)
- Part of the "**Fourth Industrial Revolution**"



AI – Areas application etc.

- Related to the increased possibilities to assemble, store and analyse **big data**

“AI will change our lives by improving healthcare (e.g. making diagnosis more precise, enabling better prevention of diseases), increasing the efficiency of farming, contributing to climate change mitigation and adaptation, improving the efficiency of production systems through predictive maintenance, increasing the security of Europeans, and in many other ways that we can only begin to imagine...”

- Healthcare
- Advertising
- Transportation
- Climate change mitigation
- Decision making
- Security
- ...

G7 calls for developing global technical standards for AI

FINANCIAL TIMES

AI needs superintelligent regulation

Elon Musk and others urge AI pause, citing 'risks to society'

The
Economist

How to worry wisely about artificial intelligence

The Washington Post

OpenAI CEO tells Senate that he fears AI's potential to manipulate views

G7 – May 2023

- **”advance international discussions on inclusive artificial intelligence (AI) governance and interoperability** to achieve our common vision and goal of **trustworthy AI**, in line with our shared democratic values.”
- “We recognize the need to immediately take stock of the opportunities and challenges of generative AI, which is increasingly prominent across countries and sectors,”
- “These discussions could **include topics such as** governance, safeguard of intellectual property rights including copy rights, promotion of transparency, response to foreign information manipulation, including disinformation, and responsible utilization of these technologies. We welcome the Action Plan for promoting global interoperability between tools for trustworthy AI”
- <https://www.mofa.go.jp/files/100506878.pdf>
- https://www.g7hiroshima.go.jp/documents/pdf/Leaders_Communique_01_en.pdf

AI, trust and responsibility/liability

Why is trust important for the development of AI?

- "In a representative survey of 2020, **liability ranked amongst the top three barriers to the use of AI by European companies**. It was cited as the most relevant external obstacle (43%) for companies that are planning to, but have not yet adopted AI."
- [Explanatory memorandum accompanying the European Commission's proposal for a Directive on adapting non-contractual civil liability rules to artificial intelligence (AI).]

(Legal) challenges

- **Opaque** decision-making (“**black box**”)
- Intrusion in private lives
- Use for criminal purposes
- Responsibility, accountability, liability?

- Trust – uptake and investments

- Rule of Law
- Safeguarding of Fundamental Rights

Policy context

- AI is (of course) subject to existing rules and regulations related to liability, etc.
- **But the application/applicability of these rules is unclear**
- **AI has specific characteristics**
- International/global, regional (EU) and national initiatives

Liability, responsibility, accountability...

- **Liability:** “The fact that someone is legally responsible for something.”
- **Responsibility:** “Something that it is your job or duty to deal with.”
- **Accountability:** “The fact of being responsible for what you do and able to give a satisfactory reason for it, or the degree to which this happens.”

It is possible to regulate "responsibility" in different ways...

- To establish a legal "obligation" or "duty" for someone to act or not to act in a certain way
 - Such an obligation/duty may or may not correspond to someone else's right(s)
 - If correspondence: A rule of private law
 - If no correspondence: A rule of public/"administrative" law – often combined with supervision by a government agency or other public authority
 - Penal legislation is an example of "public law"
- Responsibility **ex ante** (beforehand) or **ex post** (afterwards)
- It is often common to **combine** private, public and ex post and ex ante rules...
- It is not always necessary to enact new legislation. Sometimes the market (actors) develop standards, ethical guidelines, codes of conduct etc.

Artificial intelligence

Artificial intelligence

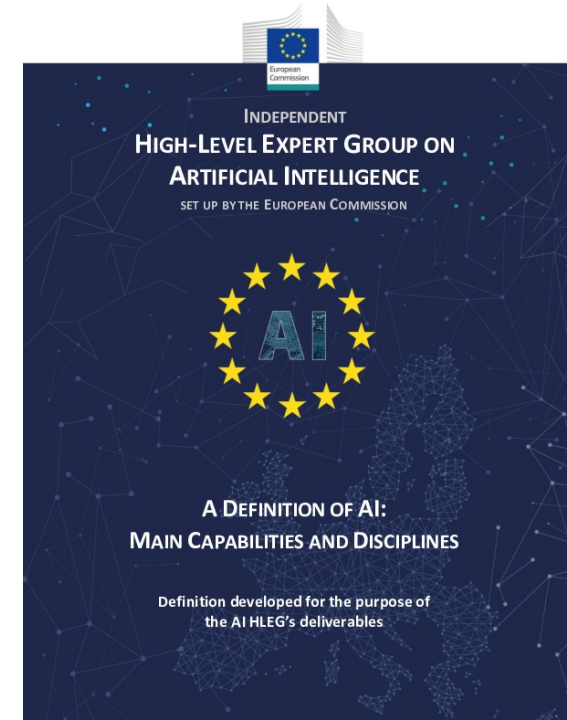
- **Different categorisations/classifications**
 - Machine learning, deep learning, neural network
 - Supervised, unsupervised and reinforcement learning
 - Strong and weak AI
 - General and specific AI
- **"Black box"** problem
 - Demands for increased **"transparency"** in AI

Artificial intelligence?

- **Turing test (1950)**
 - A machine's ability to exhibit intelligent behaviour equivalent to, or indistinguishable from, that of a human.
 - A human evaluator would judge natural language conversations between a human and a machine designed to generate **human-like responses**.

AI High Level Expert group

- *“Artificial intelligence (AI) refers to systems designed by humans that, given a complex goal, **act in the physical or digital world** by **perceiving** their environment, **interpreting** the collected structured or unstructured data, **reasoning** on the knowledge derived from this data and **deciding** the best action(s) to take (according to pre-defined parameters) to achieve the given goal. AI systems can also be designed to learn to adapt their behaviour by analysing how the environment is affected by their previous actions.*
- ***As a scientific discipline**, AI includes several approaches and techniques, such as **machine learning** (of which deep learning and reinforcement learning are specific examples), **machine reasoning** (which includes planning, scheduling, knowledge representation and reasoning, search, and optimization), and **robotics** (which includes control, perception, sensors and actuators, as well as the integration of all other techniques into cyber-physical systems).”*



OECD

- *“An AI system is a machine-based system that can, for a given set of human-defined objectives, make predictions, recommendations, or decisions influencing real or virtual environments. AI systems are designed to operate with varying levels of **autonomy**.”*



Definition in the European Commission's proposal for an EU Regulation on AI

- *'artificial intelligence system' (AI system) means software that is developed with one or more of the techniques and approaches listed in **Annex I** and can, for a given set of human-defined objectives, generate outputs such as content, predictions, recommendations, or decisions influencing the environments they interact with;*

ANNEX I

ARTIFICIAL INTELLIGENCE TECHNIQUES AND APPROACHES

referred to in Article 3, point 1

(a) Machine learning approaches, including supervised, unsupervised and reinforcement learning, using a wide variety of methods including deep learning;

(b) Logic- and knowledge-based approaches, including knowledge representation, inductive (logic) programming, knowledge bases, inference and deductive engines, (symbolic) reasoning and expert systems;

(c) Statistical approaches, Bayesian estimation, search and optimization methods.

Proposed EU Regulation on Artificial Intelligence

The proposed AI regulation

- **Proposal** for a **Regulation** of the European Parliament and of the Council laying down harmonized rules on artificial intelligence (**Artificial Intelligence Act**) and amending certain union legislative acts, COM/2021/206 final
- Proposed by the European **Commission** on **21 April, 2021**

- **85 articles**
- 89 recitals (preamble)
- 3 Annexes

- **Risk-based approach**

- <https://digital-strategy.ec.europa.eu/en/library/proposal-regulation-laying-down-harmonised-rules-artificial-intelligence>

The negotiation/legislative process – EU

- The Commission proposes
- The EU Member States negotiate
- The European Parliament and the Council of Ministers negotiate and adopt

A risk-based approach to regulation



Most AI systems will not be high-risk (Titles IV, IX)

New transparency obligations for certain AI systems (Art. 52)

- ▶ **Notify humans** that they are **interacting with an AI system** unless this is evident
- ▶ Notify humans that emotional recognition or biometric categorisation systems are applied to them
- ▶ Apply **label to deep fakes** (unless necessary for the exercise of a fundamental right or freedom or for reasons of public interests)

Possible voluntary codes of conduct for AI with specific transparency requirements (Art. 69)

- ▶ No mandatory obligations
- ▶ Commission and Board to encourage drawing up of codes of conduct intended to foster the **voluntary application of requirements to low-risk AI systems**



AI that contradicts EU values is prohibited (Title II, Article 5)

X

Subliminal manipulation
resulting in physical/
psychological harm

Example: An **inaudible sound** is played in truck drivers' cabins to push them to **drive longer than healthy and safe**. AI is used to find the frequency maximising this effect on drivers.

X

**Exploitation of children
or mentally disabled persons**
resulting in physical/psychological harm

Example: A doll with an integrated **voice assistant** encourages a minor to **engage in progressively dangerous behavior** or challenges in the guise of a fun or cool game.

X

**General purpose
social scoring**

Example: An AI system **identifies at-risk children** in need of social care **based on insignificant or irrelevant social 'misbehavior'** of parents, e.g. missing a doctor's appointment or divorce.

X

**Remote biometric identification for law
enforcement purposes in publicly accessible
spaces (with exceptions)**

Example: All faces captured live by video cameras checked, in real time, against a database to identify a terrorist.

High-risk Artificial Intelligence Systems (Title III, Annexes II and III)



Certain applications in the following fields:

1 SAFETY COMPONENTS OF REGULATED PRODUCTS

(e.g. medical devices, machinery) which are subject to third-party assessment under the relevant sectorial legislation

2 CERTAIN (STAND-ALONE) AI SYSTEMS IN THE FOLLOWING FIELDS

- ✓ Biometric identification and categorisation of natural persons
- ✓ Management and operation of critical infrastructure
- ✓ Education and vocational training
- ✓ Employment and workers management, access to self-employment
- ✓ Access to and enjoyment of essential private services and public services and benefits
- ✓ Law enforcement
- ✓ Migration, asylum and border control management
- ✓ Administration of justice and democratic processes

Amendments proposed by MEPs

- May 2023
- Members tabled (around) **4000 amendments** to the proposal, on which compromises were elaborated.
- Committees for Internal Market and Consumer Protection (IMCO) and Civil Liberties, Justice and Home Affairs (LIBE).
- The definition of AI systems is broadened, **aligning with OECD standards** but narrowing the scope of high-risk systems.
- Amendments include **new high-risk categories**, banned practices, and ethical principles.
- Obligations are imposed on foundation model providers, and AI-value chain governance receives emphasis.

Next steps

- **Plenary vote** is scheduled for **mid-June**.
- **Trilogue** negotiations, autumn 2023.
- Text will likely be **adopted** at the **beginning of 2024**.

Proposal from the Commission for an EU Directive on AI Liability

AI Liability Directive

- Proposal in September 2022
- Purpose: To improve the **functioning of the internal market** by laying down uniform rules for certain aspects of non-contractual civil liability for damage caused with the involvement of AI systems.
- Persons harmed by AI systems should enjoy the **same level of protection** as persons harmed by other technologies in the EU.
- The AI liability directive would create a rebuttable '**presumption of causality**', to ease the burden of proof for victims to establish damage caused by an AI system.
- Also, the possibility for national courts to **disclosure of evidence** about high-risk AI systems suspected of having caused damage.

Summing up

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- **Different types** of responsibility/liability
- **Risk-based** approach

- **Relationship** between trust, liability/responsibility, take-up and incentive to invest, etc.?



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