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Comments on the White Paper on Artificial Intelligence – A European approach to excellence and trust – COM (2020) 65 final

We are delighted for the opportunity to respond to the Commission's public consultation on the white paper on Artificial Intelligence – A European approach to excellence and trust.

Short about MindFuture

The MindFuture Foundation is a newly established nonprofit tech-art initiative with an international outreach to combine technological AI-research with artistic AI-installations in order to experiment and develop new forms of future humanized AI-technologies.

The MindFuture Foundation introduces a concept of *Artificial Mindset*; as we believe the next generation of AI-technology will come to create entities that encompass computers and other digital mechanics to become autonomous decision-makers on a level beyond mathematical logic, which eventually will involve a human-like emotional rationale. We foresee that this will evolve into independent "thinking-machines" with capabilities of developing some form of emotional intelligence and/or irrationality to a degree of self-awareness.

The MindFuture Foundation wants to investigate and demonstrate humanized AI-technologies for a future where humans can actually communicate with machines on equal terms, and that this is a way forward to create trust in AI. We define this as:

- » **MindtheFuture** will investigate how future humans and Artificial Mindsets might relate, aiming at making people aware of the potential downfalls of the future.
- » **MinetheFuture** will use data and technology to provide insights into the development of futuristic humanized technology.
- » **MindtheGap** will spur curiosity and challenge traditional thinking about the relationship between man and machine to encourage debate in the present moment about the future.

The MindFuture Foundation is not an industry organization nor does it represent any specific political positions; in essence we want to take this opportunity to also make the Commission aware of the need for a dialog about the next level of AI-technology, and therefore respectfully suggest to expand the current debate to include further debate of the future of Artificial Intelligence and Artificial Mindsets.

Comments on definitions

We appreciate the detailed work put into the white paper and the many reports supporting this consultation. We also acknowledge the premise of the white paper to primarily address industrial policies of regulation.

Reading through the AI HLEG's *Ethics guidelines for trustworthy AI* it says:

"In this document we expand this definition to clarify certain aspects of AI as a scientific discipline and as a technology, with the aim to avoid misunderstandings, to achieve a shared common knowledge of AI that can be fruitfully used also by non-AI experts, and to provide useful details that can be used in the discussion on both the AI ethics guidelines and the AI policies recommendations."

"A separate document¹ prepared by the AI HLEG and elaborating on the definition of AI used for the purpose of this document is published in parallel, titled "A definition of AI: Main capabilities and scientific disciplines". [...] propose to use the following updated definition of AI:

Artificial intelligence (AI) systems are software (and possibly also hardware) systems that, given a complex goal, act in the physical or digital dimension by perceiving their environment through data acquisition, interpreting the collected structured or unstructured data, reasoning on the knowledge derived from this data and deciding the best action(s) to take 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)."

This definition may well be "with the aim to avoid misunderstandings, to achieve a shared common knowledge of AI that can be fruitfully used also by non-AI experts".

However, we have several different definitions, which we have gathered and published in an overarching article as an argument to broaden the perspective of artificial intelligence. In the article we introduce the term "Artificial Mindsets²".

Summary of further comments

The MindFuture Foundation appreciates the invitation to react and comment, and we respect the white paper's definition of artificial intelligence and its benefits for the Europeans. The keywords in the whitepaper's title are *excellence* and *trust*. The white paper further refers to *values* and *human dignity* and includes these as part of the meaning of *ethics*. Essentially the phrasing of *human-centric* is a vital part of the motivation for regulation in order to protect citizen's *privacy* and use of personal data. In reference to achieving *excellence*, the motivation for regulation is viewed solely from a business perspective for EU competing in a global growth

¹ Definition developed for the purpose of the High-Level Expert Group's deliverables (Francesca Rossi, member of the High-Level Expert Group on AI acted as Rapporteur). The text is derived from: http://www.pcci.gr/evpeimages/0101_F483.pdf;

² Please see article: "The Artificials: Humanized AI-technology is possible" on: https://mindfuture.ai/?page_id=5728

of economy. We suggest being very cautious of viewing AI primary as a mean to further the industrial era; hence we take a philosophical stand in our following comments. Please allow us to also comment on the global perspectives as well. In addition to the white paper's introduction, we would like to suggest a "fourth bullet" to the citation:

*"Simply put, AI is a collection of technologies that combine data, algorithms and computing power. Advances in computing and the increasing availability of data are therefore key drivers of the current upsurge of AI. Europe can combine its technological and industrial strengths with a high-quality digital infrastructure and a regulatory framework based on its fundamental values to become a **global leader in innovation in the data economy and its applications as set out in the European data strategy**. On that basis, it can develop an AI ecosystem that brings the benefits of the technology to the whole of European society and economy:*

- *for **citizens** to reap new benefits for example improved health care, fewer breakdowns of household machinery, safer and cleaner transport systems, better public services;*
 - *for **business** development, for example a new generation of products and services in areas where Europe is particularly strong (machinery, transport, cybersecurity, farming, the green and circular economy, healthcare and high-value added sectors like fashion and tourism); and*
 - *for services of **public interest**, for example by reducing the costs of providing services (transport, education, energy and waste management), by improving the sustainability of products and by equipping law enforcement authorities with appropriate tools to ensure the security of citizens, with proper safeguards to respect their rights and freedoms.*
- for all **human individuals** to recognize that AI will eventually develop into a format of "Artificial Mindsets" by introducing more advanced emotional human-like algorithms, for example to create more advanced personal assistants and companion-like robotics, e.g. as personal mentors in relation to mental health, universal ethics rules in politics and ideology debates; personal teachers for building skills as individual educations, etc.

Legislative measures and regulation have been part of our civilization's industrial way of thinking about technology for almost 300 years – but future technologies are so much more than the present definitions of AI as a technology. In fact, we feel that present AI-technologies should be viewed as *temporary tools* to achieve the next level of human civilization. In our opinion, bridging the gap between humans and machines is a whole new level of communication.

We believe that "Artificial Mindsets" are next-generation artificial intelligence that can act in the intangible, emotional and irrational aspects of human life. In order to cope with the next level of AI we also feel a need to mention new phenomena such as Neuromorphic, Quantum and Edge computing to become new digital-analog technology on par with the human brain.

That makes AI-technologies into digital tools in current ICT-systems – but it doesn't capture the thinking of future AI-technologies to become *humanized*, i.e. computers being able to make autonomous human-like decisions with or without collaboration with human decision making.

In our era with enormous data harvesting and continuous development of ever more advanced machine learning software algorithms, there is a huge challenge for humans, nations and civilizations to contemplate the next paradigm of communication between humans and machines. In our human world we use emotional personality character, empathy, respect for situational awareness and human dignity to assess decision making. However, Artificial Mindsets based solely on mathematically AI-algorithms will present results without feelings, which may emotionally harm humans.

Explanations from AI/AM-technology are not currently based on feelings, emotions and situational awareness – but based upon logic and algorithms using current available datasets to acquire more knowledge and experience. When datasets change over time, the output will also change. This technology has the potential to create technological power societies that will impact our global political systems and all financial systems.

The use of new AI/AM-technology will provide answers to questions – and often answers being more correct than the answers from humans – or Artificial Mindsets may become irrational themselves, so miscommunication between humans and machines may have direct consequences ranging from e.g. banal family quarrels – or in the bigger picture – even lead to war among nations, in which case the use of AI/AM-technology can make some nations superior to others.

The white paper also mentions:

Given the major impact that AI can have on our society and the need to build trust, it is vital that European AI is grounded in our values and fundamental rights such as human dignity and privacy protection.”

Undoubtedly “AI” will impact on the way we live and perceive ourselves as humans – but it is equally certain that we as humans will be dependent on how AI-machines come to perform as AI-mindsets. Regulating for AI as businesses is about political and economic ideologies in an industrial mindset – but future Artificial Mindsets may well show other values and perspectives on life, death and taxes.

We would like for the Commission to expand the discussion on legislation on AI to encompass the next level of technologies and essentially rethink regulation to include a vision of the next paradigm of human civilization beyond the so-called Fourth Industrial Revolution. Whether this will be known as The 5th Industrial Revolution or the next paradigm of civilization depends on this discussion.

A new 18th Global Goal

Fundamentally, The MindFuture Foundation proposes to complement the existing UN 17 SDGs with a new additional 18th Sustainability Development Goal, which we call “Life with Artificial³”. We call upon the Commission to support this effort as we, in our opinion, view the

³ Please see a full description on: https://mindfuture.ai/?page_id=5836

present UN 17 SDGs as insufficient to address the challenge of AI-technology to become humanized.

This calls for a global need to address a number of questions – on top of the usual questions and perception of AI-technology – to the consequences of implementing *Artificial Mindsets* into society.

We have put together some examples of questions to be addressed:

1. Will human life be made easier by artificial intelligence and Artificial Mindsets?
2. When can we trust artificial intelligence-algorithms and Artificial Mindsets?
3. How can humans handle defiance in the Artificial Mindsets environment?
4. When can we trust people using AI/AM as reference in e.g. political decisions?
5. Which nations will first specify a framework for handling human inadequacy?
6. Will legislative measures of ethics and trust in political and economic environment be adequate?
7. How soon will Artificials be present and in which forms, both in the digital and analogue domain?
8. Will the introduction of AI/AM require redefining human rights?
9. How will the world control the creation of distributed Artificial Mindset research and development?
10. Addiction to Artificials and how to avoid dependencies?

We are happy to return an invitation to a dialog (or comments) on a new approach that define and discuss AI in a much larger context than just devices and the consumer perspective.

We thank you once again for the opportunity to comment and participate in the hearing. We have as individuals also responded to the parallel survey and answered its specific questions.

Yours sincerely,



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