Amsterdam: AI Technology for People

Concerning: Accompanying input to the contribution of the Amsterdam AI Technology for People consortium to the public consultation on the AI White Paper.

SECTION 1 - AN ECOSYSTEM OF EXCELLENCE

Proposed actions

To build an ecosystem of excellence that can support the development and uptake of AI across the EU economy, the White Paper proposes a series of actions. The Amsterdam AI consortium fully supports the six actions proposed under section 4. However, it should be pointed out that there is a hugely disproportionate imbalance between sections 4 (ecosystem of excellence) and 5 (ecosystem of trust). This limited focus on AI excellence we also see in section 3 where the role of low-power electronics and quantum computing get far more attention than the excellence in algorithms, the core of modern AI, which in the White Paper are mainly considered as the means to gain trust through explainable AI. We argue for an **equal focus on both excellence and trust** and actions without which Europe will never truly become a world leader in AI.

Furthermore, it is vital to allocate much more attention to skills, more specifically, skilled staff to guide the heavily increasing number of students interested in AI, and across academic disciplines.

The Amsterdam consortium urges the European Commission to consider the lack of talent as a priority and consider the following measures in order to help **attract, train and retain talent**:

- Introduce a **grace period of six months** for MSc and PhD students (from non-EU countries) who have finished their degrees but who have not found a job in the EU yet in order to ease their transition into the European labour market.

- Enable **Human Resources agencies to connect AI talent** (MSc and PhD level) to industry, governmental and/or non-profit organizations during the last three to six months of the students' training programme so as to connect them to professional opportunities in Europe.

- Set aside part of the funding available for generic instruments such as the [Marie Skłodowska-Curie actions](#) for **targeted AI-specific funding** aimed at AI talent at all stages, and in various disciplines, incl. SSH. These funding opportunities should be clearly earmarked, with ultra-short turnaround times, for bringing talent to Europe and giving European AI talent clear career trajectories inside Europe.

- **Implement across Europe an equivalent of the French [CIFRE programme](#)**, aimed at talent development at PhD level (with a 50/50 split between time spent in academia and time spent with industrial stakeholders). France's CIFRE programme provides a good example of incentivising the industry to invest in PhD-level talent with large numbers of opportunities for such talent to undertake great scientific efforts with meaningful impact.

- Support the set-up of **joint appointment programmes with European companies, governments, and/or other not-for-profit organisations** for academic staff in order to improve public-private partnerships and cooperation, apply AI knowledge to concrete challenges and possibly offer more competitive remuneration.

Revising the Coordinated Plan on AI (Action 1)

The Commission, taking into account the results of the public consultation on the White Paper, will propose to Member States a revision of the Coordinated Plan to be adopted by end 2020.

Firstly, the Consortium welcomes the development through the European data strategy and the investment through the Digital Europe Programme to support high-performance and quantum computing. However, it is relevant to highlight here that there is a **tangible need to coordinate policies on the further development of AI-relevant infrastructure** such as a compute infrastructure with clusters of many GPU enabled nodes, a data exchange infrastructure to facilitate secure and fair sharing of data and a local knowledge sharing infrastructure where companies, government and scientific research come together.

Secondly, **connecting local hubs of research excellence should be closely coordinated at national and European levels** in order to enhance the cooperation and exchange of talent and excellence between national and international centers.

A united and strengthened research and innovation community striving for excellence

Joining forces at all levels, from basic research to deployment, will be key to overcome fragmentation and create synergies between the existing networks of excellence.

Key focus in this section should be on **connecting existing AI research excellence centers**, emphasizing each center's key strengths (e.g. in Amsterdam: Deep learning, hybrid intelligence, responsible AI, AI in health, and Human(e) AI), creating synergy through network events and exchange programs for talents at all levels, and jointly address the major challenges the world is facing by connecting the excellence in various fields of AI, each taking advantage of their own local ecosystem

We advise against developing a single lighthouse research center: It would take away the leading talent where it is highly needed at regional level and, also, it would never create the mass that is needed in every subfield of AI. We feel AI talent should be attracted to national research excellence centers which closely work together on specific topics, and where they can educate the next generation of AI talent for the region and nation. Given the distributed nature of computing in AI, having it in one physical location also doesn't have an added value. The same concern is true for the creation of testing facilities where a lighthouse approach or the establishment of a limited amount of facilities would work against the development of a truly European network of excellence.

Most importantly, **the immense lack of talent should be considered a priority**. In order for hubs of excellence to flourish in Europe, the EU must invest in attracting and retaining talent working in AI education, research and innovation and students trained in AI technology and digital SSH expertise at the BSc, MSc and PhD levels.

Focusing on Small and Medium Enterprises (SMEs)

The Commission will work with Member States to ensure that at least one digital innovation hub per Member State has a high degree of specialisation on AI.

In identifying national Digital Innovation Hubs, the European Commission should **take into account the hub's surrounding business environment** which needs to consist of regional, international, small and medium sized enterprises, as well as knowledge and other AI-related institutes which have a close connection to AI excellence research centres. Indeed, Amsterdam offers an ideal environment here, in particular for the service industry, given its long tradition of public-private partnerships, the region has

many long-standing collaborations between academia and the private sector. In the field of AI, the Amsterdam region builds on three decades of research, education and innovation. To further boost AI developments in the Amsterdam region, joint knowledge institutes have committed themselves to ambitious targets for the next ten years: at least 100 SMEs impacted through collaborative spin-off projects and at least 100 AI startups.

SECTION 2 - AN ECOSYSTEM OF TRUST

Identified concerns

The Amsterdam AI consortium argues that the fact that technology can result in concerns does not mean we should not develop it, but that we need to find ways of how to take away these concerns, either through better technologies, or new legal safeguards. Similar to in many other fields of technology, **we should not see these concerns as threats that should hamper innovation, but as guiding principles** for developing new AI algorithms where assessment of risk and means to reduce these risks go hand in hand.

The consortium would, therefore, like to primarily reiterate the **imbalance between sections 4 (ecosystem of excellence) and 5 (ecosystem of trust).** The consortium argues for at least as much focus on section 4 as section 5 for Europe to truly become a world leader in AI.

Finally, the development of an ecosystem of trust needs to be the **result of a collaborative process and increased dialogue** between European institutions and researchers and (technological) experts in order to ensure pragmatic legislative measures, focus on concrete problems, and guarantee the best environment for the development and deployment of AI.

Applicable legislation

The Amsterdam AI consortium believes that we can **to a large extent rely on existing European regulatory frameworks** considering fundamental rights, privacy and security of data, although they need expanded to take into account new concerns relating to the development of AI. **Some of the laws (e.g. about legal liability) and frameworks (e.g. for e-commerce), for example, do not fit**. Furthermore, the consortium strongly believes that law is not only an obstacle to tech innovation, but can actually be a facilitator, e.g. through clearer guidance on the application of data protection law to AI applications, through measures to reign in the power of platforms to dominate tech development, creating conditions for fairer competition. A **narrow and clear-cut definition** of AI is needed for feasibility of and effectiveness in implementation of any future legal framework, as are measures to better support the enforcement of existing rules.

The introduction of new compulsory requirements should be limited to high-risk applications: it is needed to have a **well-defined risk-based approach to AI regulation** and not apply a one size fits all approach across all AI applications. Furthermore, the development of new regulatory measures must take place on a targeted and risk-based approach in order for AI to be future-proof, i.e. not to stifle innovation by hindering researchers to do their work. AI is dynamic and continuously evolving and its impact varies greatly depending on the use cases. Technical elements of AI regulation, therefore, rely best on flexible standards that balance opportunities and values.

In practice it will be **very difficult to make a feasible distinction between high risk and low risk AI applications**. Furthermore, the risks are in the infringements, not in the technology itself. Therefore, the

risk-based approach needs to be situational (situations in which risks can be potentially serious) and contextual, and not simply linked to particular technologies.

Determination of high-risk applications

In order to provide legal certainty and a focused approach, **the definition of high risk should match existing definitions of risk in terms of severity and likelihood**. Developing a legal framework should mitigate and reduce the likelihood of harm caused by AI. There is also a need to take into account what the potential risk can be of not using AI (e.g. conduct research for a Coronavirus vaccine or mitigation of its spread or in law enforcement where criminals do not abide to any legislations).

Rather than a specific AI application or use, a particularly high-risk concern associated with AI is that of function creep, the gradual widening of the use of a technology or system beyond the purpose for which it was originally intended.

The Amsterdam AI consortium believes that the **use of Biometric identification systems in publicly accessible spaces**, by way of exception to the current general prohibition, should **not take place until a specific guideline or legislation** at EU level is in place. Creating permanent surveillance infrastructures is at odds with a commitment to strong fundamental rights, such as the right to privacy or to assembly, and invites abuse and function creep.

The Amsterdam AI consortium does not believe in a voluntary labelling system. As experience from e.g. the field of food labelling shows, a labelling system to be effective requires considerable investment in communication, standardization and consistency.

Assessment of compliance

The Amsterdam AI consortium believes that **a combination of ex-ante compliance and ex-post enforcement mechanisms for high risk applications** offers the best combination of allowing innovation to thrive -in a trusted manner- and allowing AI to be deployed in a timely way (without undue delay due to burdensome compliance procedures).

At early stages of AI development, it is often difficult to foresee the end result, and, by consequence, it is necessary to allow for secure piloting of an AI application before any conformity assessment, limiting European researchers (and businesses/SMEs) to innovate and invest.

There are some concerns regarding "re-training the system in the EU in such a way as to ensure that all applicable requirements are met" and, therefore, potentially re-train AI systems with European datasets. It is common to use non-European datasets as the GDPR restricts the amount of available data. Not using non-EU datasets could, therefore, restrict the diversity of data and result in discrimination and lower quality. Moreover, it is sometimes not possible to trace datasets when they originate from third parties or from open sources.

SECTION 3 - SAFETY AND LIABILITY IMPLICATIONS OF AI, IOT AND ROBOTICS

[Please see answers of the consultation's questionnaire.]