

BDVA position paper

BDVA's response to the European Commission's Whitepaper on Artificial Intelligence "A European approach to excellence and trust" May 2020

BDVA **welcomes the European Commission's Whitepaper on Artificial Intelligence** "A European approach to excellence and trust"¹. There is a clear need for a solid AI European approach based on European values. The aspiration contained within this document for Europe to "become a global leader in innovation in the data economy and its applications" is strongly supported by BDVA. A comprehensive and functioning Data Strategy is a prerequisite to any AI Policy and regulation. The general broad policy perspective of this whitepaper is also very well-received.

The AI Whitepaper is **very much in line with the vision of the new partnership on AI, Data and Robotics** which BDVA is strongly driving. The Vision of the Partnership is "*to boost European competitiveness, societal wellbeing and environmental aspects to lead the world in researching, developing and deploying value-driven trustworthy AI, Data and Robotics based on fundamental European rights, principles and values*"². Excellence and Trust are part of the European AI framework and covered by the five impact areas of the future partnership.

To build an ecosystem of excellence that can support the development and uptake of AI, several actions must be taken, for example mobilising resources, investing in research and innovation, and creating the right incentives to accelerate the adoption of AI by small and medium-sized enterprises. Creating an ecosystem of trust by developing a robust European regulatory framework for trustworthy AI will give citizens the confidence to embrace AI applications and companies and public organisations the legal certainty to innovate using AI. European businesses see Industrial AI as more of an opportunity than a threat. It is important to emphasise that Europe already has a relevant innovation ecosystem (in terms of research, startups, infrastructures) and a credible opportunity to become a global leader. Relevant and focused investments are necessary, as well as building on the excellence and best practices already in place (and under development), and developing tools and solutions able to maximise AI applicability while being fully compliant with regulatory, policy, and ethical frameworks. In addition, it is necessary to create an EU-wide innovation environment, avoiding replications and fragmentation between Member States and related communities.

The business, economic and societal context to which AI is applied needs to be considered as decisions are not made in a vacuum but within the socio-economic context of a society of humans which, in the European case, requires the AI application to be trustworthy. An interdisciplinary approach has to be followed to cover all possible domains benefiting from the use of AI. The AI whitepaper could pay more attention to human behaviour in relation to AI. For instance, the recent debate on the deployment of corona tracking apps has shown again how important it is to jointly assess the technological and societal aspects of data-driven innovations. Therefore, the scope should be enlarged accordingly.

¹ COM(2020) 65 final "On Artificial Intelligence - A European approach to excellence and trust"

² Zillner, S., Bisset, D., García Robles, A., Hahn, T., Lafrenz, R., Liepert, B., and Curry, E. (eds) (2019) "Strategic Research, Innovation and Deployment Agenda for an AI PPP: A focal point for collaboration on Artificial Intelligence, Data and Robotics. Second Consultation Release." September 2019, Brussels. BDVA – euRobotics

Europe has a unique ecosystem of diverse languages and cultures, which should be leveraged to showcase leadership in interoperability, inclusivity, diversity in providing technology solutions in complex environments. Standards and standardisation can be employed as a mechanism to leverage international best practice to build trust and confidence in AI products, services, tools, and processes.

Ecosystem of Excellence

Stakeholder engagement should be open, inclusive and representative of the AI, Data, and Robotics communities. Engagement with specific targeted stakeholders from certification authorities, regulatory bodies and standards development must be prioritised to best serve European needs and deliver on the Digital Single Market objectives. It is crucial that all Member States are engaged to ensure a unified context for companies and organisations from all over Europe. This is key in ensuring that access to data and deployment of AI are consistent across the entire European space, and avoiding fragmentation of access and deployment.

The new AI, Data and Robotics Partnership will build a focal point for a common AI strategy by mobilising the entire AI, Data and Robotics community. Critical to this ecosystem will be a strong connection between the Partnership and the networks of DIH and comparable national and regional initiatives. In this regard, strong connections to **Member states** and policy makers at European, national and regional level are essential to federate efforts and investments in AI, Data and Robotics.

A **coordinated and comprehensive effort** is required to achieve a **World Leading Centre in AI**. The EC is investing actively in this area through different programmes such as the AI on-demand platform, the AI Network of Centres of Excellence, the AI DIHs, the AI Testing and Experimentation Facilities (TEFs), and the AI, Data and Robotics partnership as the central coordination instrument. In this context, the AI, Data and Robotics Partnership includes in its objectives “to promote research excellence in AI, Data and Robotics”. This includes leveraging existing scientific excellence in the mentioned areas, strengthening scientific cooperation, reducing fragmentation of research and ensuring access to world-class research infrastructure. It is essential to establish the **alignment and synergies among all these instruments** on the one hand and with Horizon Europe and Digital Europe programmes on the other, leveraging both the technical and non-technical disciplines expertise within the community. In this complex landscape of recently launched and planned initiatives and programmes an additional instrument such as the so called “lighthouse centre of research, innovation and expertise” could lead to significant complexity and fragmentation and limit mainstream investments.

Considering the two-fold objective of reducing fragmentation and ensuring access to infrastructure, the double dimension of the networks of DIHs in general, and the **federation of data-driven innovation hubs**, in particular could be very valuable, identifying needs from their respective regional ecosystems, aligning them with existing and upcoming initiatives at European level (i.e. TEFs, AI4EU), and acting as a bridge between both levels.

A safe and controlled environment (sandbox) for regulatory AI research would link RDI and Regulatory stakeholders and help co-evolve standards and regulation in sectoral specific AI Systems like FinTech and MedTec.

People will need to be trained with proper **skills** to meet the needs of the AI Economy. AI influences the skills needed by all sectors in industry and society in general. Traditional industry sectors will experience an AI transformation, and their workforces will have to adapt. Additionally “It is of importance to increase the capacity of AI education and vocational training to support a strong skills pipeline of all educational levels to increase supply of talents”³.

Training and retraining of employees will be an investment for all companies, in particular for SMEs that will benefit from the return on investment. Tailoring the training to the strategic needs will open new opportunities and career paths for employees (either with a technical background or not) while increasing their motivation. Retraining and upskilling is also needed for managers to make informed decisions based upon insight gleaned from data analytics they need to have an understanding of the techniques used to produce that information, and in particular, the risks associated with the use of those techniques.

This will be a dual process; on the one hand, AI practitioners have to be encouraged to possess multi-disciplinary skills whilst in parallel non-experts in AI skills will have to acquire such skills via appropriate training. Innovative methods of training with specific emphasis on non-formal learning (MOOCs, Webinars, short courses will have to coexist with traditional methods of formal learning. This will require a unified system for the acquisition and recognition of skills. Quality assurance mechanisms of training together with transparency of the credentials, will be a must. This may require a separate coordinated action by the European Commission to facilitate a Digital Skills Platform and ensure “skills democratisation”.

There is a narrow view of **SMEs** in the context of the AI whitepaper, as SMEs can be AI solution providers and/or AI solution consumers. Both viewpoints should be included. The Digital Innovation Hubs are already in place, ready to receive Data and ready to support AI systems. “It is critical that innovators (SME, start-ups, etc.) can access technical infrastructure and gain access to business expertise and finance that can help them react to new developments and opportunities, and enable scale-up”⁴. The support of DIHs to SMEs and start-ups should include not only the AI perspective, but also a data-driven approach as a previous step. In this way, there are still many barriers to overcome, and where DIHs could support, among others: to create awareness of data value, to evaluate readiness and maturity, to break data silos and grant access to data, and to provide guidelines about data sharing, data governance, data protection and data privacy.

An effective European AI Innovation Ecosystem facilitates the cross-fertilisation and exchange between stakeholders that leads to new AI-powered value chains that can improve business and society and deliver benefits to citizens. A productive European AI Innovation Ecosystem is an essential component to overcome the key adoption *challenges*. The **new public-private partnership** will be central in **stimulating such an AI innovation ecosystem**. Horizon Europe and the Digital Europe Programme can bring all ecosystem stakeholders together to enable cohesive and comprehensive strategic planning. These instruments in collaboration with the Digital Innovation Hubs provide end-to-end coverage with wide stakeholder engagement and inclusivity leveraging Partnership coordination to prevent potential siloing of activities.

A new AI-powered value chain is also essential in the Europe twin transition pathway to a green and

³ Zillner, S., Bisset, D., García Robles, A., Hahn, T., Lafrenz, R., Liepert, B., and Curry, E. (eds) (2019) “Strategic Research, Innovation and Deployment Agenda for an AI PPP: A focal point for collaboration on Artificial Intelligence, Data and Robotics. Second Consultation Release.” September 2019, Brussels. BDVA – euRobotics

digital economy. AI can address various dimensions of recognised climate challenges (e.g. smart cities, smart energy, sustainable use of land and natural resources) and, in the transition towards decarbonised, inclusive and more circular value creation in European industries, **systemic and cross-sectorial solutions** represent the only chance to achieve an efficient and sustainable society, as promoted by the **Green Deal** strategy. In a high-risk system context, trustworthy AI has to assure transparency and traceability to all the ecosystem stakeholders and to respect the man-in-the-loop approach.

In the digital marketplace where AI services are to be provided, it is important to take a citizen-centric viewpoint. **Public administration services** for citizens not only in healthcare and mobility but delivering on Commissions own communication “Building Trust in Human-Centric Artificial Intelligence”. The interaction between public services (and services of public interest) and citizens must be simplified. AI can support the design and provision of new **proactive** and cross-provider services to anticipate and suit end-users’ needs better by respecting transparency and privacy. The Digital Innovation Hubs and public service media have an important role to play in the adoption and trust of AI solutions.

The main emphasis in relation to **Securing access to Data and Computing Infrastructure** is on the operational and deployment aspects of AI and the underlying compute infrastructure. Emerging computer modalities of FOG, MEC and Edge **have data challenges to resolve**. The cross-cutting nature of Data from core to edge, combined with the societal concerns of privacy and ethics puts (Big) Data at the centre of a ‘super system’ of multiple ecosystems e.g. Cloud Data, IoT Data, 5G Data, Smart-X Data and AI Data. *“For AI technology to develop further and meet expectations, large volumes of cross-sectoral, unbiased, high-quality and trustworthy data need to be made available. Data spaces, platforms and marketplaces are enablers, the key to unleashing the potential of such data. There are however important business, organisational and legal constraints that can block this scenario such as the lack of motivation to share data due to ownership concerns; loss of control; lack of trust; the lack of foresight in not understanding the value of data or its sharing potential; the lack of data valuation standards in marketplaces; the legal blocks to the free-flow of data and the uncertainty around data policies. Additionally, significant technical challenges such as interoperability, data verification and provenance support, quality and accuracy, decentralised data sharing and processing architectures, and maturity and uptake of privacy-preserving technologies for big data have a direct impact on the data made available for sharing”*.⁵

Many European actors are multinational and have to act globally. **International cooperation** is needed to deliver on interoperability requirements for the Digital Single Market (Cross Border Trade and Mobility). Standardisation is what providers need to include as input to their AI products and Services so that consumers can get quality, trust and confidence as outputs. The EU should identify key, minimum requirements for cooperation at international level, as well as key areas where digital autonomy is necessary at EU level.

⁵ Zillner, S., Bisset, D., García Robles, A., Hahn, T., Lafrenz, R., Liepert, B., and Curry, E. (eds) (2019) “Strategic Research, Innovation and Deployment Agenda for an AI PPP: A focal point for collaboration on Artificial Intelligence, Data and Robotics. Second Consultation Release.” September 2019, Brussels. BDVA – euRobotics

Ecosystem of Trust

According to the AI, Data and Robotics Partnership SRIDA “*PRCS (Policy, Regulation, Certification, and Standards) issues are likely to become a primary area of activity for the AI, Data and Robotics Partnership. Increasingly it is regulation that is the primary lever for the adoption of AI-systems. Similarly, the development of standards, particularly around data exchange and interoperability will be key to the creation of a European AI marketplace. Establishing how to certify AI will underpin the development of trust that is essential for acceptance and therefore adoption*”.

The existing regulatory framework will continue to apply to all AI applications regardless of the risks they entail. The applicable legal framework may, however, need some adjustments to sufficiently address the risks created by AI systems. The European Commission stresses that the legal framework should be improved, for instance with regard to the uncertainty of the allocation of liability between different economic actors, the distinction between services and products or the changing functionality of AI systems. This means that it should first be established which regulations already apply to AI such as the GDPR, product safety/liability legislation (cf. *de lege lata*). It also remains unclear which criteria will be used to determine whether the existing framework *sufficiently* addresses the risks created by AI systems. In other words, one needs to find and establish specific evaluation criteria to assess whether the existing framework is able to cover the many consequences of AI and if this is not the case, which criteria can be used to provide regulatory solutions and overcome existing gaps (cf. *de lege ferenda*).

Legislative instruments are precise, and a precise taxonomy of AI Systems will be necessary to identify levels of risk and compliance. The unified language could include unified concepts across fields which must be not only defined but also operationalised. Some aspects are general and horizontal and other aspects can be domain-specific.

Intellectual Property issues related to AI systems are neither recognised nor discussed in the AI Whitepaper.

Many stakeholders see certification in relation to AI systems as a critical trust-building mechanism for adoption of AI solutions. A methodological approach to certification could include best practice from other sectors being mapped to AI in tandem with the Standardization Landscape approach. Standards provide the foundational documentation for certification, regulation, legislation, compliance and ultimately enforcement. In planning a comprehensive compliance strategy, it would be important to engage stakeholders from sectors like banking that have many years of experience in relation to standards, certification and regulation.

The European Commission stresses that any regulatory intervention should be targeted and proportionate. Such an approach will reduce the risk of overregulation and hence slow down technological innovation. That is why the Commission does not want to regulate all AI systems but only high-risk AI systems. Systems that are not considered high-risk should only be covered by more general legislation mentioned above. Such a risk-based approach should be maintained.

An essential question will be to determine which AI systems qualify as high-risk and, therefore, subject to additional requirements. The distinction between high-risk and low-risk AI systems should thus be further clarified. Without a **taxonomy of risk**, self-assessment of “high risk versus low risk” and how close a product/service is to the threshold of “high risk” is not quantifiable. The use of the two cumulative criteria (i.e. use and sector) may imply that not all AI systems in high-risk sectors will

be regulated, and AI systems that may be regulated in one high-risk sector may not be regulated in another sector. The Commission also acknowledges that the use of AI systems may in exceptional circumstances be considered as a high-risk by itself, irrespective of the sector concerned. Taking into account the (different) assessment criteria, a situation of legal uncertainty might arise as organisations will probably argue that their AI application(s) do not qualify as high-risk. As such, clear guidelines on the application of these criteria is necessary.

Since it is not always clear for end-users how AI is deployed in services or products, awareness of potential issues needs to be addressed. Voluntary certification can have several benefits, both for purchasers of the certified AI system as well as for its producer. Such certification increases the confidence of users in AI systems as it indicates the producer's commitment towards higher safety and quality standards. At the same time, however, voluntary certification should be carefully addressed as it can result in a meaningless label and even increase non-compliant behaviour when there are no proper verification mechanisms. Voluntary labelling may make end-users more aware, just like Nutriscore intends to make consumers more aware of the features of the food that they are buying. When a voluntary labelling scheme is adopted, producers of AI will also become aware that end users may assess their products or services in a specific way; which will mean opportunities for producers who want to be transparent about their products and services.

The European Commission also envisages the creation of prior conformity assessments in order to ensure compliance of high-risk AI applications with the mandatory requirements. These prior assessments could include procedures for testing, inspection or certification. The introduction of certification schemes for AI-systems should be carefully addressed: what exactly can and will be certified (process vs. system), who will certify (i.e. public/private bodies), impact on market access for new players and on competition, etc. Experiences from other sectors in which certifiers provide their services also illustrate that several (legal) challenges remain (i.e. immunity, liability, public role). These challenges can have an impact on the quality of the certification process. Regulators should thus be aware of these (legal) challenges when adopting a certification scheme in the context of AI.

Certification can lead to over-regulation that limits the possibilities for disruptive innovations. An example is the impact of GDPR on data-driven medical research, which has, in some cases severely limited the efficiency and effectiveness of experiments. Since it can be expected that regulation of AI has a wider scope than GDPR, the chances are high that the speed of innovation in certain areas is significantly reduced. Regulatory sandboxes may provide an excellent way to enable exploratory research while still being able to effectively reduce potential risks when AI is 'released in the wild'.

Finally, several practical concerns remain as well, such as the temporal application of the regulatory framework that may be adapted for high-risk AI systems (cf. retroactivity).

Concerning AI Governance, instead of creating a single EU supervisory body on AI, one may indeed consider increasing cooperation between different national and supranational supervisory competent bodies (e.g. exchange of information and best practices). There is a risk that AI governance is implemented as a separate "AI Chief Officer". When governance is approached like this, there is a considerable risk that a siloed approach follows. Especially because AI is such a broad topic, it has to be deployed and governed in an integrated way.

About BDVA

The Big Data Value Association (BDVA) is an industry-driven international not-for-profit organisation with over 200 members all over Europe and a well-balanced composition of large, small, and medium-sized industries as well as research and user organisations.

BDVA is the private counterpart to the European Commission to implement the Big Data Value PPP program. BDVA and the Big Data Value PPP pursue a common shared vision of positioning Europe as the world leader in the creation of Big Data Value. BDVA is also a private member of the EuroHPC JU and one of the main promoters and driving forces of the AI, Data and Robotics Partnership planned for the MFF 2021-27.

The mission of the BDVA is *“to develop the Innovation Ecosystem that will enable the data-driven digital transformation in Europe delivering maximum economic and societal benefit, and, achieving and sustaining Europe’s leadership on Big Data Value creation and Artificial Intelligence”*. BDVA enables existing regional multi-partner cooperation, to collaborate at European level through the provision of tools and know-how to support the co-creation, development and experimentation of pan-European data-driven applications and services, and know-how exchange.

BDVA maintains and fulfils a Strategic Research and Innovation Agenda (SRIA) for Big Data Value domain, contributes to the Horizon 2020 work programmes and calls for proposals and it monitors the progress of the BDV PPP (BDVA is in charge of producing the Monitoring Report of the whole programme). BDVA manages over 25 working groups organised in Task Forces and subgroups, and tackling all the technical and non-technical challenges of Big Data Value. BDVA has developed, together with euRobotics, the consultation version of the SRIDA (Strategic Research, Innovation and Deployment Agenda) for AI, Big Data and Robotics Partnership.

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