

# White Paper on “Artificial Intelligence - A European approach to excellence and trust”

## A contribution by Zalando SE to the European Commission’s public consultation

*This paper is a contribution to the European Commission’s public consultation on the White Paper for AI published in February 2020. It complements Zalando’s answers to the online questionnaire. We do not comment on all the many aspects raised in the consultation, but highlight specific points of importance to us and to the development of a competitive AI landscape in Europe.*

### 1. Introduction

The White Paper on Artificial Intelligence (AI) and its follow-up initiatives are an opportunity to establish a clear legal framework addressing concerns about the technology and creating the conditions for companies or public entities to use AI easily and flexibly in Europe. This framework should rightly aim at creating a “trustworthy AI”.

As with software, AI is a technology enabling greater efficiency for the benefit of citizens, businesses or the public sector alike. Today’s applied AI research builds on three decades of research in the 1990s, 2000s and 2010s. While AI isn’t new, it’s growing use is enabled by leaps in data computing capacity and by digitalization.

The adoption of AI is necessarily easier for digital companies, such as e-commerce companies, which are by definition centered around data and digital processes. On the other hand, non-digital companies first need to digitalize before using AI. The road to AI is thus longer for the latter. For all sectors or companies, investing in AI is an investment in the future whose value can typically only be evaluated after the AI has been implemented. For Zalando, the use of AI is crucial today and in the future.

Beyond the technology, there are other success factors which play an equally crucial role. To create world-class AI in Europe, the EU needs to attract and retain world-class talents. This is possible on three scores: the regulatory and investment-support frameworks allow top research to be undertaken in Europe, the scarcity of AI talents is addressed by academic curricula teaching AI at university thus replacing on-the-job training, and unnecessary visa restrictions are lifted for AI talents to come to our continent, study and work in the EU.

All together, a long-term sign of success for the EU’s AI policy and regulatory framework will be the number of AI companies, AI use cases or AI talents nurtured in Europe in this context.

### 2. Zalando is pioneering AI in fashion and logistics.

Artificial intelligence is used throughout Zalando to make personalised recommendations, improve customer satisfaction, scale up how we offer products and to gain efficiencies, especially in the management of stocks and logistics. It is a critical competitive factor. Zalando invests significantly in the development of AI in our company, and our researchers

publish some of these insights for the benefit of the industry. We are consistently generating new tools using AI which help improve the customer journey. Below are three examples:

- Our Machine Learning applications generate product recommendations. Given that Zalando offers 500,000 products from 2,500 brands, no consumer would want to go through the entire assortment. In addition, Zalando services 32 million customers from 17 European countries: each has a specific fashion taste, but generally our customers are more inspired by fashion outfits than single articles. Our “Algorithmic Fashion Companion” was thus developed in-house by Zalando’s own data science and AI research teams. It is based on collaboration between machine learning and more than 4 million outfits created by Zalando’s stylists.
- Another example is the Size and Fit project, where AI is used to generate recommendations about which size to choose based on customers’ past purchases, and flag items that run a size large or a size small. This is based on return indications (too small, too big) and indications from our fit models, who try on and check how a piece of clothing fits. Better size indications increase customer satisfaction and drive down returns which is good for the environment and for our business.
- A third application of AI is in logistics. AI is used to bundle parcels together and thus ensure parcels leave our warehouses for dispatch to consumers according to the most efficient and quickest delivery. This increases the efficiency of our processes and customer satisfaction through faster, more convenient delivery.

These examples illustrate the crucial role of AI at Zalando. It is absolutely necessary to personalise our offers at any given time and to run our business competitively and efficiently.

### **3. A risk-based approach to AI regulation adequately reflects applied AI research.**

Zalando supports a risk-based approach for regulating AI. Differentiating between low-risk, high-risk and “extremely high-risk” AI use cases would ensure the proportionality of the EU’s approach.

Compared to low-risk applications (such as the examples above), rules for the development and use of high-risk applications could alleviate specific concerns, such as risks to safety, risks to life and limb, or risks of discriminatory outcomes, for example when AI is linked to access to a public service. The work of the EU High Level Expert Group on AI is very useful to explore specific sectors. To identify high-risk cases, we believe a combination of sectors, specific AI use cases and cross-sectoral qualitative criteria would be appropriate.

External conformity assessments could be reserved to extremely high-risk AI use cases, defined as a narrow list. This list could be updated regularly by the European Commission in collaboration with industry. It could also be audited on a regular basis to ensure that it indeed applies to a low percentage of very risky applications, as opposed to the broad range of low risk applications. External conformity assessments can impair the innovation capacity and the competitive advantage of European AI companies through lengthy, costly procedures,

especially as the availability of AI experts is scarce. However, acute concerns over the technology in extreme high-risk cases would justify efforts to screen the technology.

#### **4. Identify gaps in current legislation and align objectives of other EU policies with the development of AI in Europe.**

All EU policies can contribute to creating the conditions for the development of world-class AI in Europe. This is especially relevant as several pieces of legislation already apply to AI. For example, the GDPR foresees extensive documentation on the use of data, which applies to the processing of personal data by an AI system.

An extensive analysis of existing legislation would be useful to list requirements that already apply to AI and to identify gaps in today's legislation and address them specifically. Any other approach (such as adding new legislation) should be technology-neutral and risk-based to ensure it doesn't increase the regulatory burden at the cost of innovation.

#### **5. Information transparency and company-level control processes can address concerns over opacity.**

All AI projects are complex by nature, whether based on symbolic AI or inspired by neural networks. The benefits of using AI are precisely derived from the fact that AI systems perform tasks that could never be performed by a human and lead to better outcomes. It thus enables the offer of services which didn't exist a few years ago.

In our view, concerns over the opacity of AI can be addressed through information transparency. For example, while the use of technology may be obvious when filling in an online questionnaire, the addition of the mention of a "chat bot" could be a relevant piece of information in the context of what may look like an online discussion.

In addition, excellence in the development of AI leads to controlling inputs, outputs and feedback loops of AI systems, so as to address any bias or discriminatory outcomes (among others). These control processes are decided on and implemented at company level. AI systems can't be 100% bug free or entirely bias free and are in this respect similar to softwares. On the contrary, goods (in the sense of physical products) are intended to be flawless at the end of their production process.

#### **6. Sandboxing can enable AI research.**

In order to ensure that the EU and its standards can inspire others in the world, the EU must become one of the world's centers of innovation in AI. For this reason, next to the focus on controlling risks, regulation and enforcement alike should have an equal focus on enabling innovation.

The recent development of applied AI builds on research initiated decades earlier. AI researchers from public or private institutions should be able to develop the next generation of AI projects (esp. potentially high-risk use cases) in the context of "regulatory sandboxes".

In this framework, initiating projects and testing ideas on real datasets could be undertaken more easily, while rules for transferring this research into applied AI would apply at the deployment stage. In this context, the role of EU or national institutions, including regulators, would be to enable the development of such projects in “regulatory sandboxes”.

Recent examples of “regulatory sandboxes” in other sectors include the promotion of the FinTech sector in the UK through the Financial Conduct Authority (FCA), the “GDPR sandbox” initiated by the UK Information Commissioner’s Office (ICO) or in France experimentations conducted by ARCEP in the telecoms sector.

## **7. Addressing the scarcity of AI talents and diversity through academic education and the easing of visa restrictions.**

In our view, this last point is actually equally important for the update of AI in Europe as the definition of simple rules for AI.

AI pioneers from the 1990s and 2000s, as well as today’s young AI leaders were self-taught in AI. They followed other academic courses and learnt how to develop AI, in parallel to their studies, through research projects, PhDs or on-the-job training. Today, masters in data science are still proposed by too few leading universities, and there is yet no consensus as to what the curricula of data science programmes should include. This situation is neither appropriate to answer the very strong interest in AI research from the private or public sector, nor does it nurture the AI talents of tomorrow.

In our view, significantly more universities could be encouraged to offer masters in data science, as well as “bridge academic programmes” allowing anyone interested in AI to transfer from another related academic field (such as econometrics, economics, sociology, data analytics, etc). It would also positively contribute to attracting more diverse candidates (gender, background) to become AI experts. University curricula could be developed in close collaboration between universities and companies, thus drawing on the experience of industry AI practitioners. It would contribute to building the conditions for having the right skills in Europe for top innovation in AI.

In addition, to deliver world-class AI research, European companies, universities or the public sector need to be able to recruit world-class AI talents. Easing unnecessary visa restrictions for non-EU nationals could greatly help to overcome today’s obstacles to the recruitment of the best worldwide talents (for example from the US or China). To tackle the current scarcity of adequately trained AI researchers and to build world-class research capabilities in Europe, the EU and EU Member States should consider how to facilitate the entry of non-EU nationals to study and work in AI in the EU.

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