ADIGITAL POSITION PAPER
COMPETITION IN GENERATIVE AI

EUROPEAN COMMISSION CALL FOR CONTRIBUTIONS

The European Commission (EC) launched on 9 January two calls for contributions on competition in virtual worlds and generative artificial intelligence (AI), with the purpose to gather specific information and views from regulatory experts, academia, industry, and consumer organizations. The contributions will influence the EC's thinking and potential policy recommendations at the end of 2024. For that reason, the EC provides a list of questions for orientation only to guide the input needed, although contributions can be a position paper replying to the topics raised by the questions.

We welcome the opportunity to provide feedback on the level of competition in the context of generative AI, and our insights on how competition law can help ensure that these new markets remain competitive.

The following document presents the inputs from Adigital to the EC's call for contributions on competition in generative AI and in virtual worlds, which will focus on the following points:

- The potential of Generative AI to unlock innovation.
- The competition dynamics in Generative AI.
- The adequacy of competition rules to the AI context.
- The challenges associated with the role of data in Generative AI.
- The relation between open source and proprietary Generative AI systems.
- The prospects on competition on virtual worlds.

COMPETITION IN GENERATIVE AI

To successfully build, train, deploy, and distribute generative AI systems, several key components are essential. High-quality and diverse datasets serve as the foundation for training these systems, enabling them to learn patterns and generate outputs. The choice of a robust and scalable model architecture is crucial, as it dictates the system's capabilities and performance. The training process involves optimizing model parameters based on the dataset, requiring computational resources and efficient algorithms. Deployment infrastructure is another critical component, determining how well the trained model integrates into real-world applications. Ensuring ethical considerations, transparency, and fairness throughout the development process is vital for responsible AI deployment. Lastly, an effective distribution strategy, considering user interfaces and accessibility, plays an important role in making the generative AI system widely available and impactful. The integration of these components is imperative to create, train, deploy, and distribute generative AI systems successfully.

1. The potential of Generative AI to unlock innovation is indisputable.

While it is still early days, generative AI has the potential to be a transformative technology. The Foundational Models (FMs) fuelling generative AI are numerous and evolving, and could be applied to a number of use cases. For example, they can be used: (i) in healthcare to create personalized treatment plans or to better analyse medical images; (ii) in finance, to generate smarter analysis and draw insights; (iii) in tech, to write code and reduce human-error bugs; (iv) in manufacturing, to design new products and optimize production processes; (v) in architecture, to create prototypes and early-stage renderings.

Nevertheless, the applications of this technology may change in the upcoming years, either because it can reveal more potential or because implementation or technological barriers can slow down the process of application development. Acknowledging the diverse cultural and social perspectives surrounding the adoption of Generative AI is crucial, ensuring that technology aligns with human values and preferences.

2. Competition in Generative AI is rapidly evolving, with an increasing number of players in this space.

With increasing importance of access to high-quality data, to the availability of highly scalable compute capacity, and the advancement of machine learning (ML) technologies over time, it is yet to be seen competition in Generative AI would evolve.

Different companies have been working on FMs for years, and there are already many different FMs available, big and small, open-source and proprietary, each with very high potential: no one knows which models will be the most successful. Rather than a “winner takes all” situation, we expect many—potentially thousands–of different models, both big and small, to succeed. There will not be one FM to rule them all, and bigger may not necessarily be better. This is the case because different models work better for different use cases, or on different

sets of data. Some models are great for summarization, others are great for reasoning and integration, and still others have great language support.

Moreover, we can see a multiplicity of successful models coexisting already, which success is due to diverse reasons, including higher quality data, better algorithms, or the use of less data in a smarter way to be more cost-effective.

Technological advances are also reducing the cost and time of building, training, and deploying large language models. For example, the ability to easily customize a pre-trained model through fine-tuning might be an accelerator of the emergence of competitive models. AI providers, including start-ups, will need access to third party models and tools, customized go-to-market strategies, machine learning stack optimization, and more in order to be able to compete in the market.

Competition will need to be fierce at other layers of the AI stack. For instance, customers today have some choices from which to source compute capacity. These include on-premises solutions, solutions deployed in a co-located environment, speciality ML cloud providers, online solutions provided by cloud services providers, or hybrid solutions combining these options. For example, on-premises providers are reinventing their businesses to serve the AI space; and highly successful startups focusing on AI/ML training are also emerging to provide compute solutions. Model developers are using a variety of IT providers for their compute capacity needs. Thus, it is paramount to consider the complexity of the value chain so as not to generate imbalances between the different players.

Finally, private and public investments can also contribute to competition, as they are an important tool in bringing together parties' complementary resources and capabilities to enable more rapid and effective innovation than either company could achieve on its own.

Today's most powerful models have the potential to emerge as the foundational models of tomorrow. Just as we currently experience the existence of a few distinct operating systems, the future may see the establishment of a small number of powerful foundational models that serve as the bedrock for a multitude of applications. These models could shape the technological ecosystem, influencing the development and functioning of various applications across different domains, making possible the creation of new industries with them.

3. Competition rules are adequate to ensure innovation in the AI space.

Competition in Generative AI is rapidly evolving. It is generally working well to deliver value, service, and choice to all types of customers. Premature regulatory intervention to address perceived constraints could have unintended consequences. Potential competition concerns (such as tying, bundling, exclusive dealing, and anticompetitive M&A transactions) can be assessed and, if needed, addressed under existing competition rules.

However, to the extent that regulation is considered necessary, it should be proportionate and targeted to a specific concern with a AI/ML technology and related use cases to avoid

distortion of competition. Overly burdensome regulation may make it unnecessarily difficult for competition and innovation to flourish, and at worst may lead to concentration and become a significant barrier to entry in its own right. We welcome the initiative of the European Commission to understand the Generative AI space and the opportunity to engage constructively on these important issues.

A balance between safeguarding fundamental interests and fostering an innovative, future-proof regulatory framework is crucial for Europe's autonomy in navigating the evolving landscape of Generative AI systems and industry along them. In order to develop an open strategic autonomy the core interests must be taken into account. It should be explored how regulatory innovation can foster environments conducive to new products and innovation by promoting flexibility, collaboration, and forward-thinking policies, since it would be the only way to position Europe as a global leader in fostering technological advancements.

4. The challenges associated with the role of data in Generative AI.

The training of such models comes with challenges. Specifically, intellectual property and privacy have been subject to scrutiny. As these systems learn from vast datasets, the models generated through training can potentially incorporate copyrighted material, raising questions about the rights and permissions associated with the resulting AI outputs. In the same way privacy concerns arise as these systems may reproduce elements from the training data, potentially revealing private details included on the training data, the ethical dimension of data usage requires consideration to ensure that privacy is preserved, and individuals' rights are respected. Transparency, fairness, and security are other challenges that come with the data used to build these models and the training process.

The utilization of generative AI introduces a consideration regarding the transfer of data to third parties. As organizations leverage generative AI technologies to develop advanced models capable of creative outputs, the sharing of data becomes a crucial aspect of the process. Organizations should implement robust data governance practices, adhere to privacy regulations, and establish transparent policies to ensure responsible handling of data when engaging in the exchange with third parties.

5. The relation between open source and proprietary Generative AI systems.

The relationship between proprietary and open-source generative AI systems will reflect a dynamic interplay in the technology landscape. Proprietary software, developed and owned by a single entity, often provides a streamlined, user-friendly experience with dedicated customer support. This model allows companies to safeguard their intellectual property and generate revenue through licensing. On the other hand, open-source software, developed collaboratively and freely accessible, fosters a community-driven approach. It encourages transparency, flexibility, and innovation through contributions from a diverse range of developers. The advantage of proprietary software lies in the control it offers to the owner, ensuring consistent quality and support. Open-source, ranging from providing full access to the

source code and/or model training assets to enabling an open licencing access to the technology, on the contrary, promotes customization, collective problem-solving, and cost-effectiveness.

The dichotomy between these models acts as a driving force for continuous improvement and competition, shaping the technological landscape and offering users different choices based on their specific needs and preferences. In the long term, as it has happened in previous software systems, interoperability should be guaranteed since it is not only essential for effective competition but also for fostering innovation, scalability, and user satisfaction in the dynamic world of generative AI systems.

COMPETITION IN VIRTUAL WORLDS

Virtual worlds offer immersive digital environments that enable users to transcend physical boundaries, offering new ways of socializing, collaborating, learning, and conducting business. The potential impact of virtual worlds is significant, with the ability to revolutionize numerous industries. They provide a platform for creativity, allowing individuals and businesses to design, simulate, and experiment in new ways also with the potential to enhance education. However, their development and integration into our lives should be approached with an ethical perspective, ensuring user rights and addressing the impact of virtual worlds on the physical world.

The challenge for a fair competition might be the potential entry barriers due to development costs and technological complexity. New entrants might focus on services, experiences or innovative technologies within virtual worlds, which could include startups leveraging emerging technologies or established players diversifying into virtual worlds. The market of virtual goods sales and games have been propelled by the virtual worlds, and in the upcoming years the entertainment, design, art, applications for health, security, and education can be also an object of innovation in this context.