PORTUGAL

Response to the Consultation for the GSR-24 Best Practice Guidelines - Charting the course of transformative technologies for positive impact“,

What are the challenges and opportunities faced by policy makers and regulators in embracing transformative technologies for greater impact?

Challenges faced by policy makers and regulators in embracing transformative technologies for greater impact can be grouped in the following areas: (i) the unpredictable nature of business models that rely on transformative technologies, technological complexity and the necessity to evaluate in a timely manner the need to update/review regulation; (ii) data privacy, ownership, consent and control, security, public safety; (iii) transformative technologies “black box” issues such as IoT, virtual worlds and AI (including machine learning) may lead to power imbalances, fraud, scams, information asymmetries for consumers and challenges regarding fairness, transparency and equity; iv) the effects on environment and sustainability; v) the effects on society, in particular on the most vulnerable populations.

Products and services embedded in transformative technologies’ solutions evolve quickly and challenge the sectorial regulations in a context in which borders between categories and classification of services and products are blurred. The fast-evolving, interconnected nature of disruptive business models can also make it difficult to assign liability (e.g. self-driving cars involve a multiplicity of agents including the systems’ programmers, the driver, the car’s manufacturer, the manufacturer of the vehicle’s onboard sensory equipment).

Usage and control of data and privacy issues, accountability, foreseeability, compliance, security and public safety are important challenges, including how to address AI bias and/or discrimination, fraud, and related data misuse, protection from unsafe or ineffective systems, notice and explanation when an automated system is being used and how it is being used, and also how to guarantee that consumers have access to ways of quickly and effectively claiming and solving problems. Environmental impact, together with economic and social equilibrium, on the other hand, pose additional challenges as transformative technologies should also minimize their own environmental footprint and not create further social and economic pressure points.

On the other hand, it is an opportunity for regulators to reinforce the use of more innovative and adaptive regulatory models. In this context regulators may increase the use of “soft-law” innovative instruments such as policy labs, regulatory sandboxes, crowdsourcing, codes of conduct and/or best-practice guidance. By automating repetitive tasks and leveraging advanced data analytics, regulators can streamline their processes and gain valuable insights. Open data can also be used by regulators to complement their own data. Enforcement procedures can also benefit from these new technologies becoming more dynamic and efficient.

Finally, bridging the digital divide should be kept on top of the agenda as divides remain between developed and developing world; urban and rural areas; mainland and outermost regions; the young and the old (in an increasingly elderly population in the EU); men and women; the affluent and poor populations; the digital literate and the digital illiterate, the disabled and the non-disabled in a framework where simultaneously technology is changing the pace of society, economic development, employment growth and the very nature of work in ways that are somehow hard to predict and even unforeseeable.

What are the key regulatory measures and guiding principles to follow to foster positive and inclusive impact of transformative technologies?

Regulatory guiding principles to foster positive and inclusive impact encompass all the ones that are already followed and established in general terms in the current framework, such as, non-discrimination, transparency, technological neutrality, promotion of competition and innovation and ensuring consumer protection.

In addition, when it comes to to fostering a positive and inclusive impact of transformative technologies, a wide set of regulatory measures and guiding principles – with a focus on ethics, privacy, data protection, accessibility and socioeconomic and environmental impact – must be duly considered in order not only to exploit the full potential of those technologies, but also to mitigate potential risks.

- **Ethical Framework:** Ethical guidelines must govern (where applicable, "by-design") the usage and operations of innovative technologies as AI, including considerations of transparency, accountability fairness, non-discrimination, and respect for human rights.
- **Privacy Protection:** The strict implementation of the GDPR and other strong data protection measures (where applicable, "by-design") are instrumental to safeguard personal information with the advent of *inter alia* generative IA and immersive technologies.
- **Accessibility and literacy:** Universal design, digital literacy programs and public awareness campaigns (for instance with regard to cybersecurity) must be fostered to promote inclusion and adoption of transformative technologies.
- **Socioeconomic and environmental impact:** Affordability measures should be assessed, especially in outermost and rural areas, i.e, for less developed areas and populations. Promoting the use of AI to address global challenges, such as climate change, health, and education, could contribute to the Sustainable Development Goals.

In this new digital ecosystem, the promotion and adoption of international standards and the strength of international cooperation becomes even more important.

How to drive positive behaviours of market players? How to minimize risks while maximizing benefits?

The capacity to stay relevant given the advent of disruptive technologies requires well thought strategies that highlight the need to drive positive behaviors of market players, while minimizing risks and maximizing benefits, requires a solid diversified mix of regulatory measures, incentives, and collaborative efforts that articulate private interests with social goals, namely resorting to:

- Periodic reassessment of the adequation and effectiveness of the legal and regulatory framework, as per common practice in a Regulatory Impact Analysis paradigm.
- In-depth analysis focusing on the impact of transformative technologies on the expansion and enrichment of professional skills and the effectiveness of organizational and logistic processes and divulgation of the findings.
- Effective implementation and supervision of ethical guidelines, especially about AI and data ownership and commerce.
- Promoting cooperation - both at international and national levels - between public policy makers, sectoral regulators, competition authorities, manufacturers, operators, service providers, consumer associations, universities, standardization bodies, and the industry.
- Funding the research of transformative technologies, the development of open standards, and the creation of testbeds and innovation ecosystems.
- Consider state aid, subsidies and/or tax incentives to transformative technologies development and adoption.
- As mentioned by the futurist Alvin Toffler,[1] the speed of technological innovation may result in social confusion and ultimately collapse societal decision-making. Therefore, there must be an effort to promote digital and technological literacy and to render the public in general aware of the opportunities, but also of the risks, of transformative technologies.
- As immersive technologies (as augmented reality and extended reality) are becoming pervasive even in ludic applications such as gaming, it is also relevant to address opportunities related to the exploitation of "serious games" (e.g. games where the main purpose is not merely entertainment) to promote socially responsible behaviors. An interesting case study is the use

[1] Cf. Toffler, Alvin (1970). Future Shock. London: Random House.

of gaming to incentivize energy-efficient behaviors, for instance washing clothes in low temperatures, switching-off lights or keeping air conditioning at optimal temperature.[2]

[2] Cf. Yam, A. Et al. (2017). How does serious m-game technology encourage low-income households to perform socially responsible behaviors? Psychology & Marketing, vol. 34, nº 4, pp 394-409.