



Artificial Intelligence: innovation, ethics, and regulation

Digital Public Policy, Regulation and Competition

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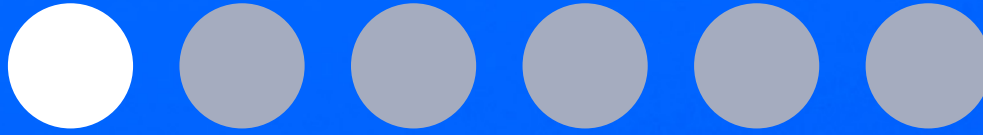
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1. Executive *Summary*

Artificial Intelligence, a lever for competitiveness and positive social impact

Artificial Intelligence (AI) is an emerging technology with great potential. Using *Machine Learning* techniques, it allows massive data analysis in an autonomous way to achieve faster decision-making and design new and more effective solutions for societies and the economy. In the age of data, this technology has become a key lever for industrial competitiveness, creating competitive advantages and becoming a geostrategic dimension for countries. AI can promote innovation in services and new business models, generate efficiencies, as well as mitigate environmental impact. Collaboration between companies is essential for technology uptake and public-private cooperation will facilitate its development and application for cases aimed at favouring a positive social impact.

An ethical use of Artificial Intelligence to generate trust and economic value

Artificial Intelligence presents not only opportunities but also challenges. From the outset, there has been a public debate on the implications that poorly designed, misused AI could

have for individuals and society as a whole. To build confidence in the development of this technology, it is necessary to ensure responsible use, from design to operation. Ethical use of technology can also drive new business models and improve business performance. This responsible approach is key to unleashing the potential of AI and requires a governance model, based on cooperation and appropriate frameworks, to maximise innovation and the benefits associated with its use.

The three pillars of governance: global guidelines, self-regulation and regulatory framework

Public policy and regulation face the challenge of establishing a framework of certainty that builds trust in the design, development, implementation and ethical use of AI. The scope of Artificial Intelligence is not confined to national borders and therefore requires global solutions and approaches. Hence the importance of the guidelines of international organisations such as the OECD. This organisation is proposing a neutral and objective definition of Artificial Intelligence to avoid fragmentation and facilitate innovation, achieving a high level of international support. The Council of Europe and UNESCO

are also developing international consensus around some principles that will serve as a foundation for far-reaching normative proposals avoiding fragmentation.

Based on these principles, self-regulation presents great opportunities as it facilitates flexible adaptation to the speed of progress of this technology, supports the dynamic evolution of markets and encourages the application of ethical principles. In this line, Telefónica adopted already in 2018 its AI Principles, internally binding when designing, developing or using AI.

The great regulatory challenge today is to strike a balance between creating legal certainty to facilitate growth and innovation in technology and protecting the rights of citizens or users. A regulatory approach based on the classification of AI uses by levels of risk can help to achieve proportionate and technologically neutral regulation. AI applications that pose an unacceptable risk to fundamental rights, health and safety would be prohibited, while those that pose a high risk

would be subject to specific regulatory obligations. Other uses considered to be low risk, such as digital infrastructure management, may follow voluntary self-regulatory principles. Other specific cases could be subject to transparency mechanisms rather than *ex-ante* regulatory control.

Policy and regulatory recommendations to foster the development of Artificial Intelligence and its responsible use

The approach to the debate on the regulation of Artificial Intelligence requires a holistic vision that combines international cooperation, self-regulation, the setting of appropriate public policies and a risk-based regulatory approach. All of this with the dual objective of mitigating risks and putting people at the centre by building citizens' trust and guaranteeing their rights. In turn, it would favour the ethical use of technology and the promotion of innovation, technological uptake and economic growth. ●





2. Artificial Intelligence, a lever for *competitiveness* and positive social impact

Artificial Intelligence (AI) is an emerging technology with great potential. Using *Machine Learning* techniques, it enables massive autonomous data analysis to achieve more efficient decision-making and provide new and more effective solutions for societies and the economy. AI can foster technological innovation and has become a key lever for industrial competitiveness, becoming a geostrategic dimension for countries and regions. It is a key technology for qualitative improvement in progress towards achieving a more productive, scientific, creative, educational, environmental, and social systems. It is a game-changing technology for any industry and society.

Its use in business is already transforming industrial sectors, enabling new business models, changing the way we research and innovate, and redefining new capabilities and ways of working. AI enables:

- fast, data-driven decisions,
- optimising manufacturing and management processes
- while minimising operational costs, generating efficiencies.

In addition, AI makes it easier to generate valuable experiences for consumers, enabling customer service channels to be personalised to their needs, simplifying processes by optimising supply chains and minimising operating costs.

At the same time, it will increase productivity, with new tools at the workplace, enabling a new wave of innovation that will boost the competitiveness of companies.

A. Artificial Intelligence, a driver of regional and business competitiveness

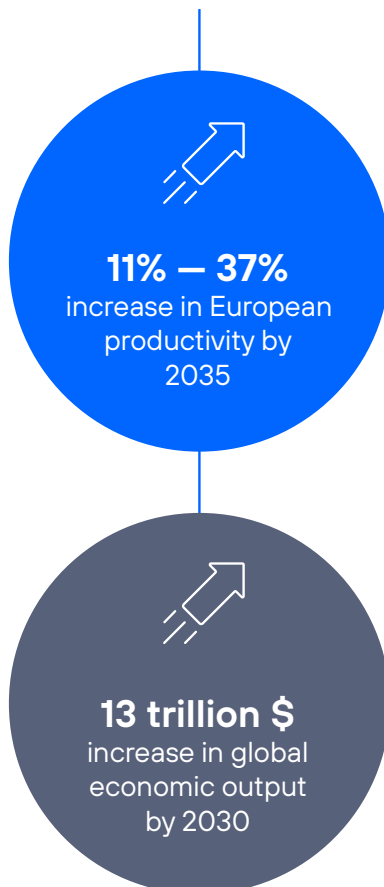
Artificial Intelligence can increase European productivity by 11-37% by 2035, according to data analysed by the European Parliament¹. AI thus becomes a catalyst for regional competitiveness. In global terms, AI could increase global economic output by \$13 trillion by 2030, which would increase global GDP by approximately 1.2% per year².

With the adoption of Artificial Intelligence and advanced data analytics services, companies in all industries can improve their competitiveness by making quick data-driven decisions, optimising manufacturing processes, minimising operational costs or improving customer service.

For example, the application of AI in the industrial sector is of great value. In Industry 4.0, this technology is used in production processes or in the supply chain to boost efficiencies with machines that communicate autonomously and enable widespread customisation of products and services. Additionally, among other advantages, it facilitates energy savings, creating more sustainable industries.

In addition, AI systems can more accurately predict disruptive events and quickly detect gaps or opportunities, providing a faster response. In the security domain, AI-based systems can identify breaches or threats by detecting irregularities in established patterns or even prevent such attacks.

Impact of AI



● Telefónica as a technology partner for multi-sector digitalisation

Telefónica cooperates with companies from different industrial and service sectors to facilitate transversal innovation and business digitalisation. Telefónica is a reliable technology partner³ with global reach and experience in the integration of diverse technologies, including Artificial Intelligence and the use of advanced data analytics, with clear advantages for all types of sectors and for a variety of uses including protection against cyber-attacks.



1

OnStar

Vehicle-to-vehicle communication and services such as turn-by-turn navigation, automatic emergency response and stolen vehicle assistance.

Telefónica (2022). Onstar: in-car connectivity.

Retrieved from: <https://www.youtube.com/watch?v=b28q0ZUc-7I>;

2

Mahou San Miguel

Thanks to Big Data and consulting and analytical services, Mahou San Miguel can predict which strategies will be most effective in achieving its business objectives.

Telefónica (2020). Mahou San Miguel: AI to achieve business goals.

Retrieved from: <https://aiiothings.telefonicatech.com/casos-exito/mahou-san-miguel>



3

Torre Outlet

IoT, big data and AI enable more efficient management of the Torre Outlet shopping centre in Zaragoza, providing real-time data and the ability to make predictions.

Telefónica, October 2020. Torre Outlet: the Smart shopping centre. Retrieved from:

<https://empresas.blogthinkbig.com/torre-outlet-zaragoza-centro-comercial-inteligente/>;



B. Use of Artificial Intelligence in telecommunications companies

Telecom companies deploy AI systems and techniques to improve the quality of end-customer service within their networks and helps to secure networks. The aim is to improve the services offered, such as the possibility of real-time network monitoring, predictive problem analysis and root cause analysis, remote repairs and chatbot support for engineers in the field. Thus, networks are optimised through machine learning-based network planning aids, enabling better adaptation, network resilience and quality of service.

In addition, telecommunications companies are using AI in customer service, to improve the personalisation of the offer oriented to customers' needs, generating a differential customer experience. And, secondly, through the use of "cognitive engines" that enable human-machine interaction, for example in telephone customer service or with virtual assistants. All these services are offered in the context of a personalised interaction with customers or to help generate recom-

mendations. Artificial intelligence, including generative intelligence, will be useful for a wide variety of uses, including in legal departments.

Telecommunications companies are using AI in customer service, to improve the personalization of the offer oriented to their needs in order to generate a differential experience.

Ultimately, the role of AI systems in services, telecommunications infrastructures and networks is primarily to optimise the core business of operators, i.e. connectivity, as well as customer service. Thus, the use of AI is very low-risk as under no circumstances is the health, safety and fundamental rights of individuals put at risk.



● Use cases of AI and advanced data analytics in telecommunication networks



1. Real-time network monitoring

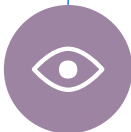
AI and big data techniques improve the monitoring of network metrics and KPIs with early detection of anomalies, patterns and trends in data, enabling identifying potential problems and possible service degradations and helping uncover the root cause. This early detection enables improved network diagnosis and repair times.

An example of application in Telefónica de España is the RadaR platform (Big Data platform for network performance) for both optimisation and predictive maintenance through the detection of anomalies⁴.



2. Network optimisation

Considering network performance and QoS metrics and KPIs along with usage and load ratios of network elements and their configurations, AI algorithms help identify service degradation issues and their root cause. This enables the identification of the best network configuration changes to implement that will improve performance and quality as perceived by customers.



3. Predictive maintenance

Predictive models help to anticipate possible network problems related to network service degradation or possible failures related to various aspects such as equipment obsolescence, load problems, energy problems, etc., which can help to establish an action plan to mitigate the impact on customers.



4. Network security

Anomaly detection techniques and pattern recognition of network traffic and usage help in early detection of network threats and attacks. The use of AI helps to discover vulnerabilities in network software and even malware in our networks and apply the best actions to minimise network risks.

● AI and advanced data analytics to personalise customer offering and customer care



1. "Next Best Action"

Using Artificial Intelligence techniques, it is possible to create a platform capable of identifying the best personalised action for each customer at each moment. In this way, the different customer service channels improve their services for greater customer satisfaction by offering them a differential experience, and also optimize commercial efforts.



2. Generation of a 360-degree view of the customer

Through aggregated analytics and AI techniques, a holistic view of customers can be offered to identify insights aimed at improving customer satisfaction and offering them a differential experience.

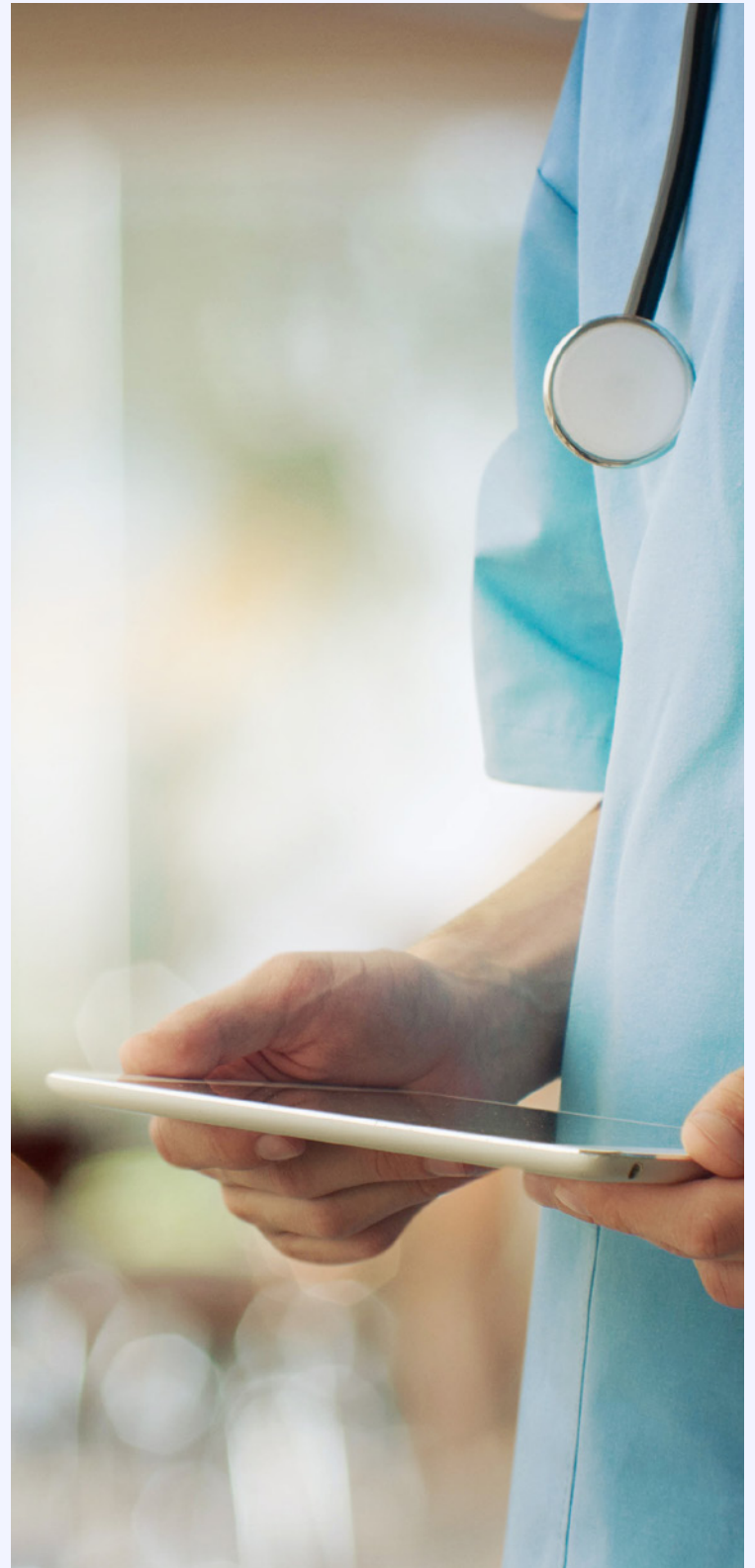
C. Artificial Intelligence, a technology with a positive social impact

The benefits of AI cut across society and countries. This technology can improve the well-being of people, advance environmental sustainability goals, speed up humanitarian action and help preserve cultural heritage.

Artificial Intelligence can help optimise the health-care system, facilitating the detection of illnesses, or providing tailor-made solutions for students or employees, promoting inclusion and adaptability to the characteristics of the labour market. AI is also an ally reducing the barriers faced by some people with special needs. In fact, we already find digital solutions with integrated Natural Language Processing systems that can voice publications or convert content to Braille to improve accessibility for blind people.



Natural language processing systems make it possible to revive little-known languages or languages that are being lost, facilitating communication with communities that live a more traditional lifestyle and bringing the language closer to the rest of the people. In the case of Spanish, AI is a great opportunity to generate relevant content for digital services that will help reduce the digital divide of a community of more than 600 million Spanish speakers in the world. With this objective in mind, several projects are being carried out in Spain, the most ambitious of which is LEIA⁵, which, in addition to promoting the Spanish language in the digital sphere, aims to ensure the proper use of the language in machines and people. Promoted by the Spanish Royal Academy of Language, Telefónica is participating in the project along with other technology companies.





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In the area of sustainability, AI can support the efficient use of resources and environmental sustainability. The digitalisation of buildings and cities makes it possible to include integrated systems to optimise resources - light, water, or gas - and reduce greenhouse gas emissions associated with their consumption. On the other hand, the capacity for analysis and prediction facilitates the introduction of mitigation and adaptation policies, making progress in the fight against climate change and in the protection of the natural environment. An example of such an application is Copernicus, the European Union's Earth observation programme. Using satellite data and a digital twin of the planet, AI can examine:

- the dynamics of the ocean and marine ecosystems,
- study changes in the state of vegetation, or
- predict the intensity of natural phenomena.

This will enable rapid action to prevent severe consequences.

● Public-private partnership

Public-private cooperation is essential to amplify the opportunities of AI for positive social impact. In a humanitarian crisis, this technology can identify areas of danger and the needs of affected people, improving resilience and the effectiveness of government policies. Some examples of Telefónica's cooperation with different administrations show how AI can help maintain cultural heritage, help public administration data management, or facilitate smart water management.

1. Museo Reina Sofía

In the context of the Reina Sofía Museum, the applicability of Big Data has translated into the possibility of exploiting the thousands of data generated by visitors to the exhibition "Pity and Terror in Picasso. The Road to Guernica", held on the occasion of the 80th anniversary of Picasso's creation and arrival in its galleries 25 years ago. For the first big data study carried out in a Spanish museum, internal data and the use of external sources such as *social listening*, meteorological data, economic impact or mobility data have been used to detect new patterns of visitor behaviour in the Museum.

Thanks to the *insights* extracted from the analysis, the Museum's decision-making process has been enriched to improve the experience of future visits and increase the impact of the institution.

In short, Telefónica's analytical services have covered everything from understanding needs to the operation of integrated solutions.

SOURCE OF THE INFOGRAPHIC:

Telefónica Tech, January 2022. INE: more detailed and frequent statistics thanks to telco data. Retrieved from: <https://aiofthings.telefonicatech.com/casos-éxito/ine>

Telefónica Tech, September 2017. Museo Reina Sofía: Big Data analysis. Retrieved from: <https://aiofthings.telefonicatech.com/céxito/museo-reina-sofia>

Telefónica Tech, July 2021. Canal Isabel II: digital transformation in water management. Retrieved from: <https://aiofthings.telefonicatech.com/casos-exito/canal-isabel>



2. Combating COVID-19



The COVID-19 pandemic was and remains a global challenge to humanity. Governments were forced to impose strict confinement measures to deal with the pandemic. This significantly changed people's mobility and habits, with a consequent impact on the economy. In this context, the availability of tools to effectively monitor and quantify mobility was key for public institutions to decide what policies to implement and for how long. Telefónica has promoted different initiatives to provide governments with anonymised and aggregated insights on mobility trends in many of the countries where it operates in Europe and Latin America. Mobility indicators with high spatial granularity and update frequency were successfully deployed in different format to predict future developments, but in any case, not to "track" people's movements. To this end, Telefónica invested in technological innovation to put digital tools at the service of people's health in a short space of time to reduce latency in *insights*, by processing anonymous data, i.e. data of a non-personal nature, while guaranteeing the security and privacy of the information.

3. Natural disaster preparedness and response



Data provide valuable information to improve preparedness and response to natural disasters. In particular, data extracted from the mobile phone network helps to improve disaster preparedness and response. This is probably the line of action that most directly contributes to saving human lives, and it is thanks to technology that we collaborate with different organisations that have acted in areas where different disasters have occurred and have helped those affected.

4. Environment, Climate change and agriculture

The development of society, the mass exodus from rural to urban areas has led, among other things, to increased energy consumption and the generation of greater amounts of waste, which has resulted in a change in the way we interact with the environment. Climate change is now a reality and we, as experts in data and AI⁷, wanted to get involved by applying our knowledge in this area.





3. Ethical use of Artificial Intelligence to build *trust* and economic value

Artificial Intelligence poses not only opportunities but also challenges. Since this technology was implemented, there has been a public debate about the implications that a bad design, an incorrect use of artificial intelligence could have for people and society as a whole⁸. Building trust is also critical as it depends partly on a responsible design and use.

Industry and public policy experts often portray ethics in the use of technology as an obstacle to innovation. In contrast, some research reveals the opposite. An MIT study⁹ on “Responsible Artificial Intelligence” (RAI), incorporating an international panel of more than 25 experts, concludes that the responsible use of AI promotes better business outcomes, including accelerated innovation and growth.

In this way, we can distinguish between innovation in the technology itself and innovation in the socio-technical domain. In the latter case, AI enhances the positive impact on humans and favours the acceptance of the technology itself. In their view, “Responsible Artificial Intelligence” (RAI) enables positive social progress and limits the potentially detrimental impacts of AI advances. As Richard Benjamins, Chief Artificial Intelligence and Data Strategist at Telefónica and member of the MIT panel of experts, states:

“Artificial Intelligence, by itself, is neither responsible nor irresponsible. It is the application of AI to specific use cases that makes it responsible or not, and that is where Responsible AI comes in. Essentially, if AI innovation asks: ‘what is possible?’, Responsible AI innovation asks: ‘what should be made possible?’”

The degree of reliance on an AI system varies according to the type of decisions being made and the impact it can have. It is therefore necessary for public and private entities using AI systems to consider the specific nature and scope of the decisions to which they apply AI.

Trust also rests on the quality of the data used. This translates into the need to avoid data that are biased, poorly measured, reflect social or personal biases or are flawed, as the resulting recommendations could lead to various kinds of harm. Data must be consistent, accurate and precise. The use of this data must comply with privacy standards and existing regulations. The data must also come from reliable sources and be contextually relevant.

The use of AI must be applied in a safe and ethical manner and its purpose must be clear and legitimate. Responsible use of AI reduces financial, reputational, and legal risks, becoming a competitive advantage in itself. It also enables greater fluidity in public-private cooperation, generating synergies in the business sphere and great benefits for people and society.

In the same vein, the European Commission’s High Level Expert Group¹⁰ recommends that Artificial Intelligence should be legally sound; technically and socially sound; and ethical, i.e. fair and transparently explainable.

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In this context, initiatives have proliferated to address the challenges and promote the ethical use of Artificial Intelligence. The aim is to define an AI governance model that catalyses the potential of AI while mitigating risks in the area of user protection, democracy and the rule of law. The most prominent proposals combine self-regulation with ethical guidelines and principles and regulation. We are therefore at a key moment to promote convergence at regional and global level.



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4. The three pillars of governance: global guidelines, *self-regulation* and a regulatory framework

The biggest challenge we face today is to design a governance model for AI that can harness its full potential while protecting users, democracies, and the rule of law. Finding this balance will be key for a technology that is not yet mature and therefore subject to constant innovation processes.

The biggest challenge we face today is to design a governance model for AI that can harness its full potential while protecting users, democracies, and the rule of law.

However, there is no clear and widespread definition of AI. This makes it very difficult to define the applicable scope of the regulatory and public policy framework without stifling innovation. In this respect, a widely accepted and recognised definition of AI is needed to avoid fragmentation in governance models or creating an excessive and unnecessary burden.

The OECD's recommendations on Artificial Intelligence¹¹ seek to capture a definition of this technology globally accepted to facilitate innovative solutions. Nearly 40 OECD member states have signed up to this definition, joined by eight non-member countries. The OECD proposes a definition that is technologically neutral and defines a restricted scope of application in this way:



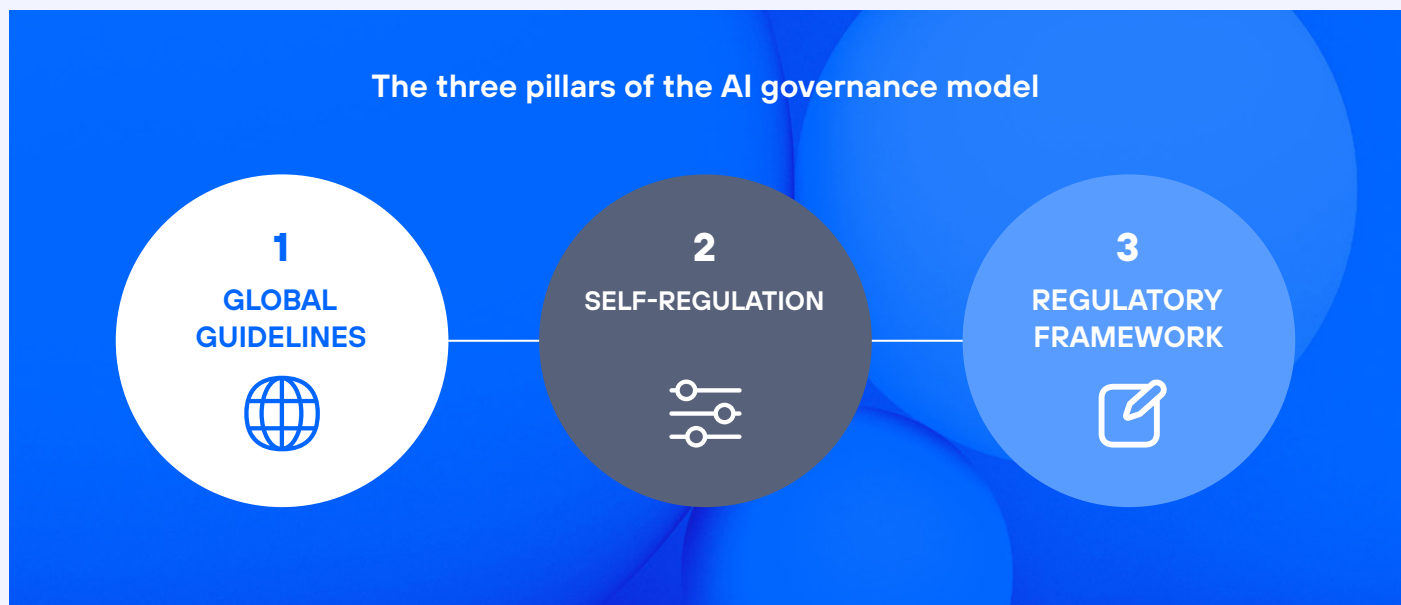
“An AI system is a machine-based system that can, for a given set of human-defined goals, make predictions, recommendations or decisions that influence real or virtual environments. AI systems are designed to operate with different levels of autonomy”.¹²

This is a specific definition, which encompasses the concept of autonomy and is not so broad or open-ended that it could mistakenly cover common statistical inference methods used in much existing software. In these cases, the use of data and its regulation is already covered by the usual data protection rules.

Accordingly, the Council of Europe¹³ is drafting a Convention on Artificial Intelligence, Human Rights, democracy and the rule of law. It will be binding on its member states and aims to establish basic legal

elements that will contribute to the international convergence of AI governance. The OECD’s proposed definition of AI should be adopted in this initiative, as well as in those being developed in other jurisdictions, as the first step forward an AI governance models on a global scale.

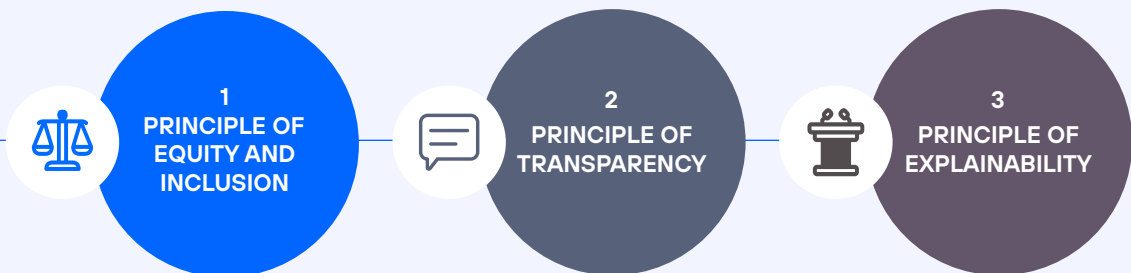
The three pillars on which this governance model should be built are: global guidelines, self-regulation and a regulatory framework.



A. Guidelines and cooperation to foster global convergence of ethical principles

The scope of Artificial Intelligence is not confined to national borders and therefore requires global solutions and approaches. In fact, a certain international consensus has already been reached on some of the ethical principles that should inspire the design and use of AI. This is the case of the principle of fairness and inclusion, which aims to treat people fairly and avoid discriminatory biases based on gender, ethnicity, religion or sexual orientation. The principle of transparency and 'explainability' seeks to make AI systems understandable to the people affected by those systems, as well as what data about them is used and for what purpose.

Ethical principles that should inspire the design and use of AI

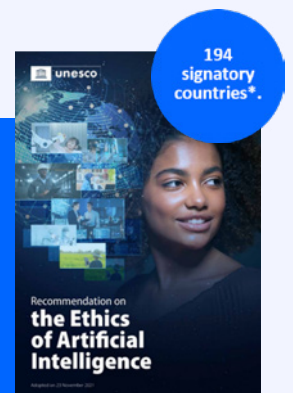


Currently, various bodies — such as the OECD¹⁴, UNESCO¹⁵, the IEEE Standard Association¹⁶ or the European Union — are seeking to establish a globally or regionally valid framework for ethical considerations to be established in the design and development of AI systems, so that these technologies advance for the benefit of humanity.

In this context, cooperation between countries in the same direction is essential. Equally, it is strategic to strengthen public-private partnerships to ensure a reliable development and use of AI based on the same ethical principles.

● Telefónica and UNESCO team up for ethical and responsible Artificial Intelligence

In May 2022, UNESCO (United Nations Educational, Scientific and Cultural Organisation) and Telefónica signed a Letter of Intent¹⁷ to develop joint initiatives to promote, foster and implement the Recommendation on the Ethics of Artificial Intelligence (AI), approved by the UNESCO General Conference in November 2021. One of these initiatives consists of the creation of a Business Council for Ibero-America to monitor the Recommendation, which will be co-chaired by Telefónica and Microsoft, with the participation of other major Ibero-American companies. Its objective is to promote the development of Artificial Intelligence that is ethical and respectful of Human Rights, through the identification of best practices and the strengthening of technical capacities in ethics and Artificial Intelligence, among other actions.



B. Self-regulation for the development and responsible use of AI

From an ethical perspective, the development of Artificial Intelligence must put people at the centre. Public and private entities must have ethical and sustainable AI principles and a model for effective implementation. In recent years, the adoption of AI governance principles and frameworks has proliferated, reaching a total of 167 initiatives according to the *Algorithm Watch index*¹⁸ in 2020.

Self-regulation presents several opportunities.

1. First, the pace of AI development and innovation far exceeds the speed at which norms are adopted, which often take years.

2. Secondly, its complexity makes it difficult to determine general a priori regulations that are applicable to different situations, which could inhibit innovation.

3. Thirdly, for those uses that are not considered high risk, self-regulation is more efficient from a financial and administrative point of view.

4. And finally, under no circumstances does it undermine the protection of people's rights, health and safety; on the contrary, it contributes to improving digital services and broadening individual and collective opportunities.



● Ethical Principles of Artificial Intelligence: From Theory to Practice

Telefónica has adopted a responsible “Artificial Intelligence by Design” approach to the use and adoption of AI. Created in 2018, Telefónica’s five AI principles aim to ensure that AI has a positive impact on society and are applied in the design, development and use of the company’s products and services.¹⁹

Telefónica’s Artificial Intelligence Principles



Fair

We make sure that the applications do not lead to results with biases and discriminatory or unfair impacts.

We ensure that there are no discriminatory elements when the AI learns and the algorithms decide or recommend.



Transparent and explainable

We tell users which data we use and for what purposes.

We take sufficient measures to ensure understanding of its decisions or recommendations.

We require our suppliers to have or adopt our AI principles or similar principles of their own.



With people as our priority

We make sure that the AI always respects Human Rights.

We are committed to the UN’s Sustainable Development Goals.

We help to avoid the improper use of technology.



With privacy and security from the design

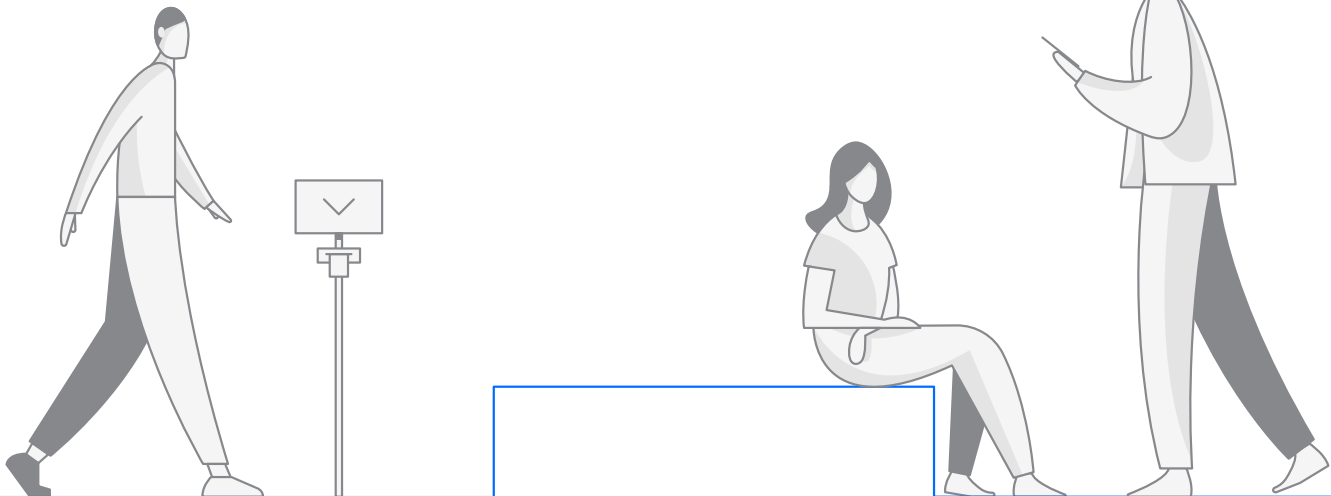
When constructing Artificial Intelligence systems, we take particular care with the security of information.

We respect the right to privacy of people and their data.

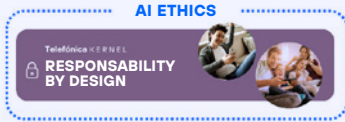


With partners and third parties

We confirm the veracity of the logic and the data used by providers.



We apply this Responsible AI approach within the broader Responsibility by Design framework which allows us to incorporate ethical and sustainable criteria already in the design and development phase of new products and services.



Since the creation of the AI Principles in Telefónica and based on a pilot conducted in different business areas of development and intensive use of AI in the company, specific roles and responsibilities were defined for AI. On the one hand, the role of RAI Champion (Responsible AI Champion), whose role is to ensure the responsible use of AI in its area of influence, and scale the risks identified to the also created AI Ethics Committee of the company. And, on the other hand, an AI Coordination function to drive the necessary change management. It also has a self-assessment tool to put these principles into practice.

On the other hand, Telefónica uses AI to create tools to improve the company's responsible behavior, such as for the measurement of the carbon footprint and

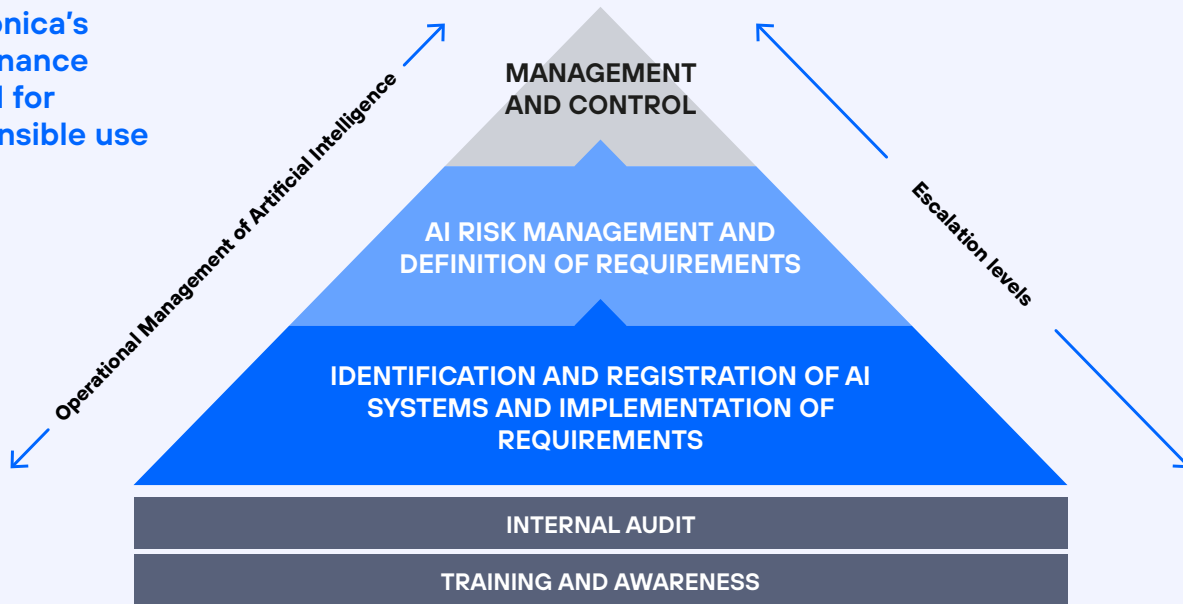
the explainability of algorithms. All this experience and learning has inspired the development of an internal regulation to implement an AI governance model. It is based on the definition of processes and roles of the participants, from the AI development processes to the value chain processes and is articulated in 3 levels.

At the first level are the activities related to the identification, registration of AI systems as well as the implementation of the necessary requirements for the assurance of the system from the point of view of risk mitigation.

At a second level is the classification of the system, the identification of risks and the definition of requirements; and at a third level is the management and control of the model. All this, in addition, defining escalation processes and horizontal and vertical coordination mechanisms.

It is a responsible AI model from the design stage, in which we encourage internal reflection and debate on the ethics and principles of our AI systems. This involves our developers and product managers from the moment we start conceptualizing or designing and throughout the product lifecycle.

Telefónica's governance model for responsible use of AI



We accompany this governance model with employee awareness and training campaigns. The process of self-regulation and improvement is ongoing.

C. Risk-based AI regulation

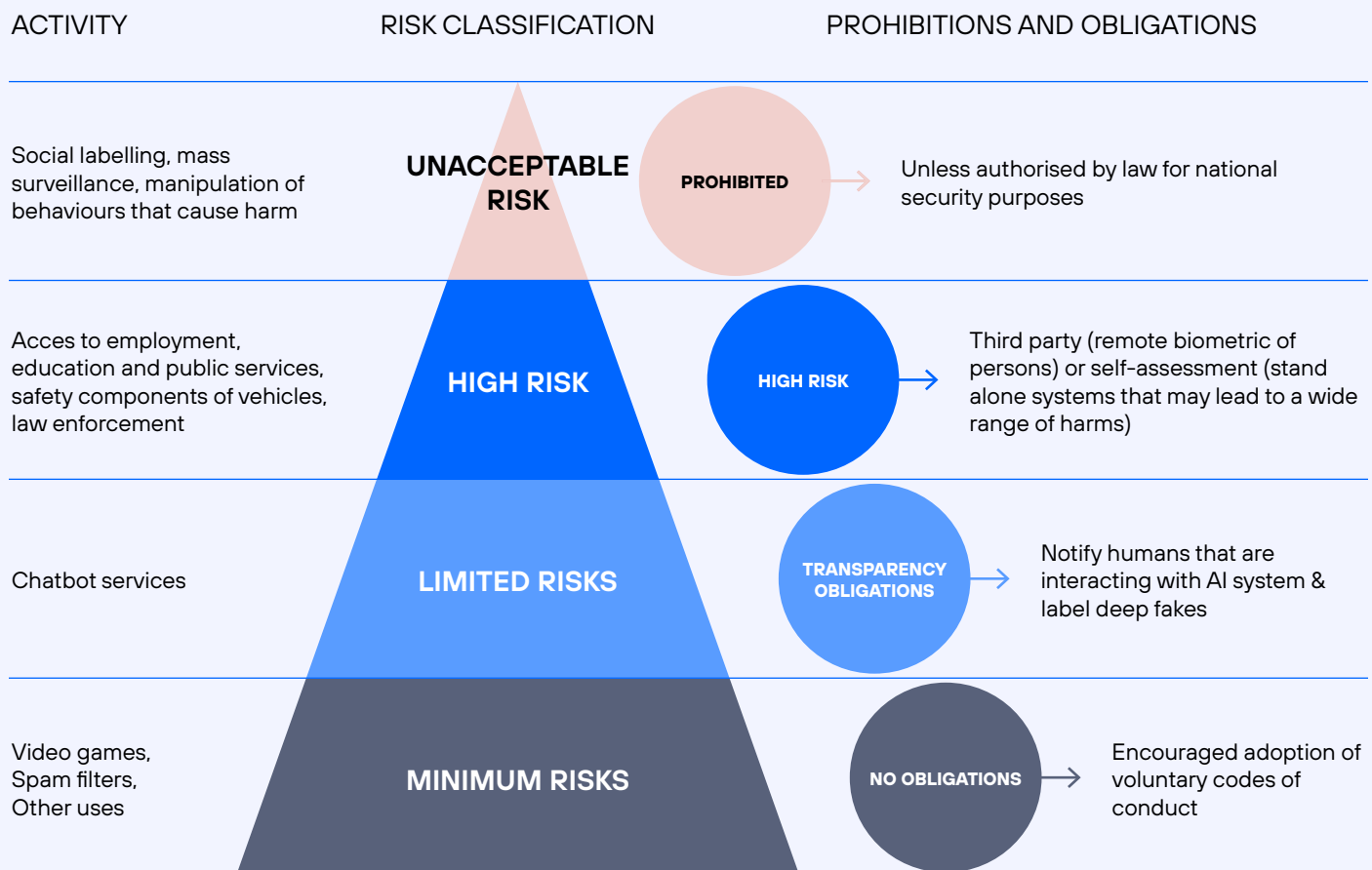
It is important to ensure a balance between legal certainty for AI service providers and users with tailored and flexible regulation. To this end, a risk-based approach is essential, ensuring that regulatory requirements are proportionate and strictly targeted at high-risk AI applications. At the same time, this should enable businesses and entities of different kinds to use AI systems that do not present high or unacceptable risk.

The regulation of Artificial Intelligence with a risk-based approach classifies the different uses of AI according to the impact they may have on people's rights, health or safety:

1. The severity of the harm it may cause.
2. The potential number of people affected, i.e. the scale.
3. The probability with which it may impact.

This classification allows for asymmetric and tailored obligations to be established for each specific use of AI, based on objective criteria. The EU, in its proposal for an Artificial Intelligence Act, identifies four types of possible risks for the different uses of AI: unacceptable, high, limited and low.

Classification of AI into four categories according to risk



The risk-based approach allows for a tiered classification of specific use cases, defining certain cases as high risk, such as:

- biometric identification of individuals
- AI systems for employee recruitment
- social scoring systems
- or mass surveillance.²⁰

In this way, regulatory bans or moratoria would apply for those systems that seriously impact on fundamental rights of individuals (unacceptable risk) and ex ante regulation for high-risk activities. In the case of limited risk applications, transparency obligations are established cases, and for low-risk applications self-regulation is recommended where possible.

Based on the above classification, digital infrastructures should be considered among the low-risk uses, as the application of Artificial Intelligence to improve their network management does not affect people's rights, health or safety. On the one hand, it can offer significant benefits for consumers by optimising the operation of grids to identify needs, improve management or energy efficiency and increase the level of network security. On the other hand, an additional unnecessary regulatory burden on the telecoms sector could create legal uncertainty, increase costs and hamper its ability to invest and innovate.

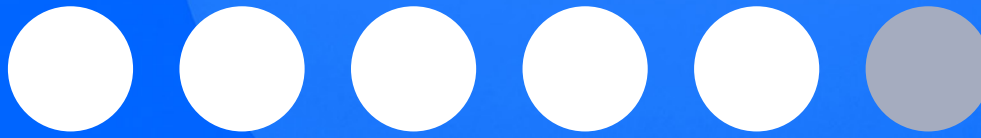
A clear legal framework and governance system will favour the development and adoption of the technology. It is crucial to design a horizontal framework, which regulates AI on the basis of use and purpose and in a technology-neutral manner. The fundamental challenges of AI cut across sectors and creating a horizontal framework that can be applied uniformly will ensure greater legal certainty.

Other initiatives to promote innovation in a supervised testing environment include regulatory *sandboxes*, which aim to "experiment" with the application of regulation in high-risk uses. Spain will innovate in this field with the regulatory *sandbox* pilot project²¹, in cooperation with the European Commission and open to all Member States. The project aims to create the conditions for a smooth implementation of the future EU's Artificial Intelligence Act and will allow important lessons to be learned and a more effective enforcement model to be designed.

With regard to ongoing regulatory initiatives, the European Union, the Council of Europe²², countries that are discussing legislation such as Brazil or the United Kingdom and other countries that are about to start discussing regulation should adopt a cautious approach to avoid creating unnecessary barriers or over-regulation that hinder competitiveness and innovation.



Countries that are about to start discussing regulation should adopt a cautious approach to avoid creating unnecessary barriers or over-regulation that hinder competitiveness and innovation.



5. Policy and regulatory recommendations to foster the development of *Artificial Intelligence* and its responsible use

Today, with the acceleration of digitalisation and an increasing use of Artificial Intelligence technologies, it is critical to succeed in governance strategies and policy design. It is necessary to guide the development and use of AI for the benefit of people and society through a coordinated, multi-disciplinary response involving all stakeholders and based on international cooperation. This will help to overcome challenges, build trust and promote technological development and ethical use of technology while ensuring that people's rights are protected.



Today, with the acceleration of digitalisation and an increasing use of Artificial Intelligence technologies, it is critical to succeed in governance strategies and policy design.

The AI ecosystem is complex and constantly evolving, so dialogue between regulators and policy makers and companies is essential. This dialogue will allow to assess existing gaps and tailor policies and regulations based on data and evidence. It will be the best way to build trust and foster innovation.

The approach to the debate on the regulation of Artificial Intelligence requires a holistic view combining international cooperation, self-regulation and the setting of appropriate public policies and a risk-based regulatory approach.



A. Public policy recommendations

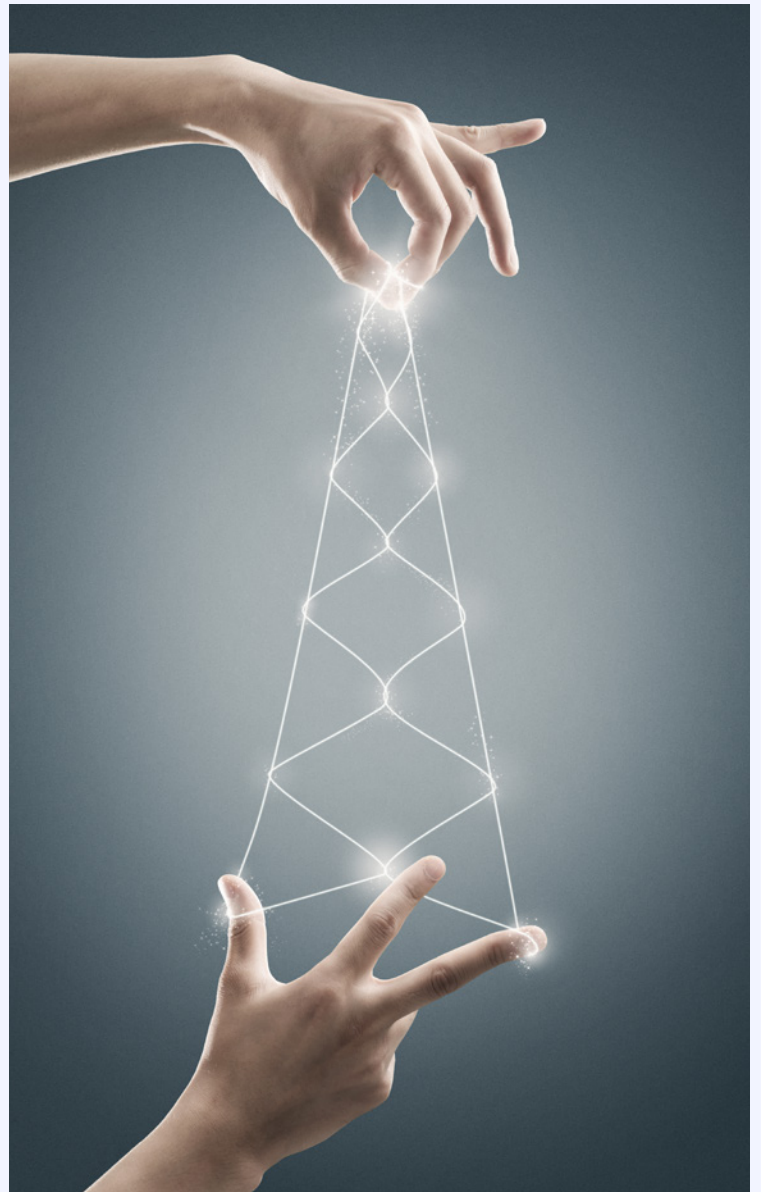
1. Strengthen international cooperation to establish common principles and avoid regulatory fragmentation. The aim is to safeguard people's rights and encourage the development and growth of innovative solutions. International dialogue and engagement for the progress of globally applicable normative frameworks and guidelines should be a priority.

2. Promote self-regulation. Ethical considerations must be considered from the moment AI systems are designed. In a context of constant evolution and change, corporate self-responsibility in this area facilitates the adoption of new business approaches that mitigate risk and build trust, based on flexibility.

3. Foster public-private partnerships and training to accelerate AI research and innovation as a lever for competitiveness. It will be necessary to invest in education and digital skills, supporting the development of AI skills with incentives for *reskilling* and training.

4. Encourage the development and adoption of safe, reliable and ethical use of AI by adopting national strategies. This involves promoting its application in the public sector and in SMEs, facilitating funding and investment schemes for new developments, as well as encouraging public debate by sharing best practices.

5. Striking a balance between technology and the human role in the AI-assisted creative process. The creative power of advanced AI systems is transforming and driving a new type of creative work and is becoming the catalyst for an explosion in the volume and quality of creative work. While AI systems play a dominant role in the execution phase, the role of human authors in the conception phase remains essential.





B. Regulatory recommendations

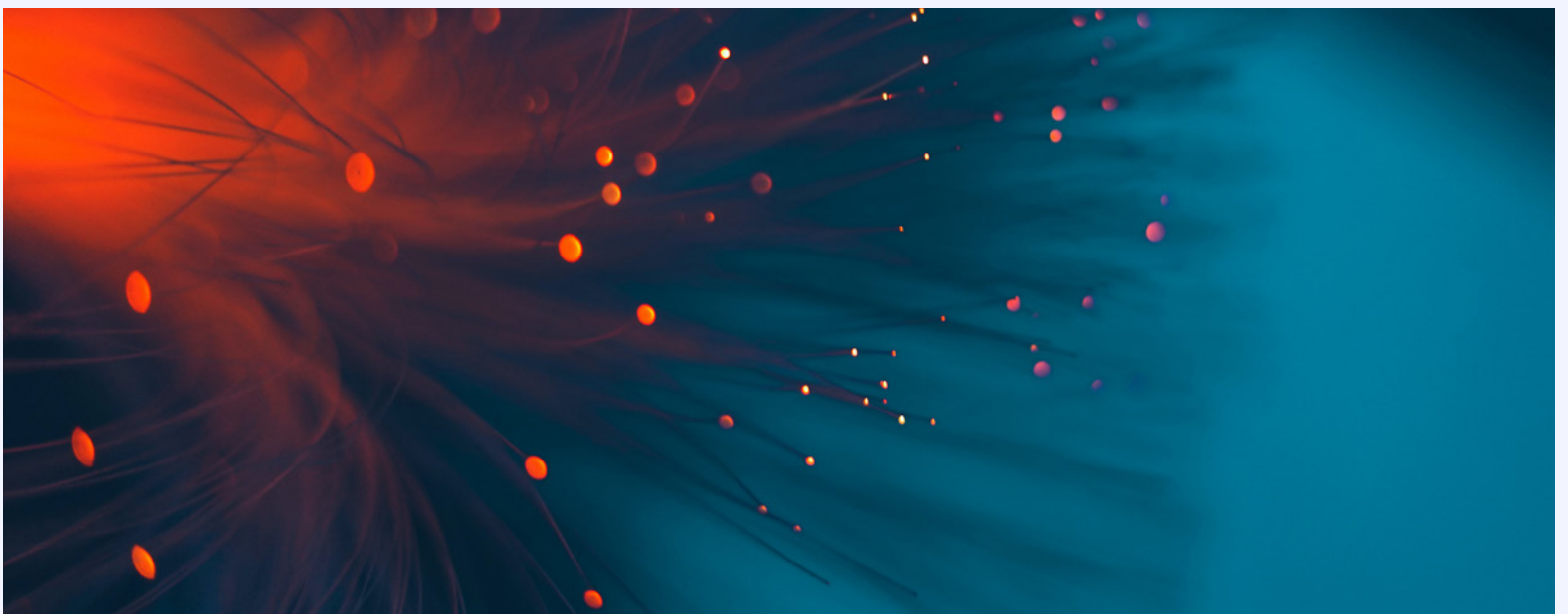
1. Establish an internationally convergent definition of Artificial Intelligence to avoid regulatory fragmentation. A widely accepted definition of AI provides legal certainty in the global regulatory and policy approach, while promoting regulatory convergence. Examples would be UNESCO's or OECD's proposed definition of Artificial Intelligence²³.

2. Develop horizontal, non-sector-specific, risk-based regulation with the dual focus of mitigating potential negative impacts and encouraging innovation. It is critical that regulation focuses on the use of AI, not the technology, across all sectors equally, avoiding sector-specific regulation. In turn, ex ante regulation should focus exclusively on high risks, to ensure the protection of fundamental rights, health or safety of individuals. This should be done while promoting an enabling environment that is technologically neutral and with reasonable arrangements. Ahead of regulation, self-regulation should be encouraged where possible, facilitating dynamic market developments and adaptation to needs.

3. Encourage regulatory *sandboxes* and AI *testbeds*, to promote investment and research, as a controlled environment for testing new technologies, applications, and regulation, based on an agreed test plan. It is a suitable instrument for testing regulatory proposals and facilitating experimentation.

4. Establish clear institutional governance, with sectoral regulators responsible for enforcement of high-risk use cases.

5. Ensure policy coherence between AI regulation and other related regulatory initiatives on, for instance, human rights due diligence.



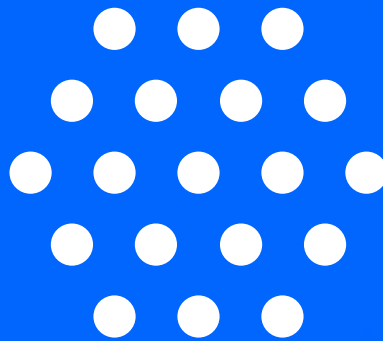


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