

PROFEEDBACK POLICY BRIEF

EU VS. CHINA IN THE ARTIFICIAL INTELLIGENCE (AI) ARENA- STRENGTHS, WEAKNESSES, AND THE PATH TO COMPETITIVENESS

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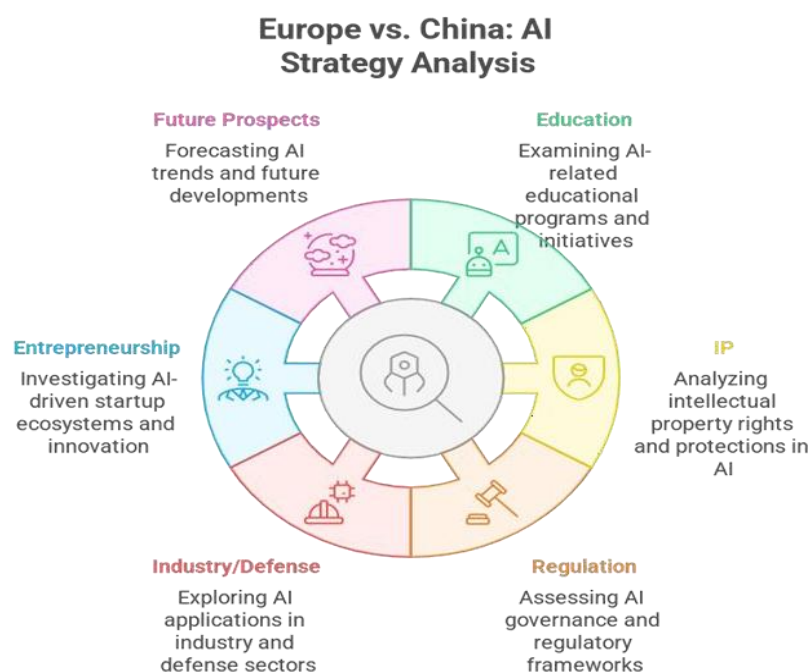
1. Introduction of the Policy Problem

The EU faces challenges in matching China's rapid advancements in AI development and deployment. While the EU is the world's largest exporter, it has been losing ground in emerging technologies and production.

Main objective of this report is to compare and analyse the EU and China's AI strategies, focusing on education, intellectual property, regulation, industrial and defence applications, entrepreneurial support, and future prospects.

This policy brief will analyse the EU and China's AI strategies across six key dimensions to provide empirical insights into the strengths and weaknesses of the EU's AI policy and offer recommendations for enhancement.

The EU remains the world's largest exporter, with over USD6 trillion in exports, followed by China (USD3.4 trillion). The EU and China are global leaders in AI development, with China leading in AI patent filings (e.g., over 38,000 AI patents in 2022) and the EU prioritizing human-centric AI innovation.



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However, the EU has been losing ground in emerging technologies and production, necessitating a critical review of existing policies and the development of new

technology strategies to maintain its competitive edge. The brief will leverage existing policy documents (e.g., European AI Skills Strategy, Artificial Intelligence for Europe, Made in China 2025 and Military-Civil Fusion (MCF) for AI applications, etc.) and academic studies to assess effectiveness of the policies.

The brief aims to inform EU policymakers, industry stakeholders, and researchers, facilitating evidence-based decision-making to strengthen the EU's industrial and technological competitiveness. For example, in education and human resource development, it will examine initiatives like the European AI Skills Strategy and China's New Generation AI Development Plan, assessing their scale, funding, and outcomes in AI workforce development

By doing so, it seeks to provide decision-makers with empirical insights into the strengths and weaknesses of the EU's AI policy and offer recommendations for enhancing its effectiveness and efficiency.

2. Analysis of AI Strategies Across Key Dimensions

A) Education and Human Resource Development

EU Perspective

AI has seen remarkable growth and transformation in recent years, revolutionising various industries and shaping the future of technology. With advancements in computing power, the availability of big data, and breakthroughs in machine learning algorithms, AI has the potential to significantly impact a wide range of roles and functions across industries, performing complex tasks that were once exclusive to human intelligence. As a result, the emergence of AI is transforming the labour market, and it is essential for the EU to manage this shift.

There are three main challenges for the EU, highlighting the fundamental role of education and training. The first challenge is to prepare the society as a whole. This

means helping all Europeans to develop basic digital skills, as well as skills which are complementary to and cannot be replaced by any machine such as critical thinking, creativity or management. The second challenge is the EU needs to focus efforts to help workers in jobs which are likely to be the most transformed or to disappear due to AI, in line with the European Pillar of Social Rights. The third challenge is the EU needs to train more specialists in AI, building on its long tradition of academic excellence, create the attractive environment for them to work in the EU and attract more talent from abroad.

Since the European Commission launched a comprehensive plan in 2016 to equip people with the right skills for a constantly evolving labour market (the New Skills Agenda for Europe), it has implemented numerous actions in this area, including a Recommendation on key competences for lifelong learning, focusing specifically on the acquisition of skills in science, technology, engineering and mathematics (STEM).

However, the reality is that the EU faces a growing demand for AI skills. A recently published AI Skills Needs Analysis (ARISA, 2023) shows that although there is a growing offer of education, it does not match the demand at this time, both in quantitative and qualitative terms. Moreover, as technologies progress rapidly, VET and higher education will need to be designed in an agile, modular manner that adjusts quickly to new and upcoming requirements. Across the EU, current initiatives aimed at promoting and developing AI skills need revision to better meet the expectations of stakeholders, especially those working in the education sector.

To overcome the AI skills gap, it is recommended to align EU policies and initiatives with the changing AI landscape and foster collaboration between academia and industry. The European Artificial Intelligence Skills Alliance (ARISA) has launched a strategic initiative to address Europe's AI talent shortages and skill gaps composed of seven objectives:

- Identify potential mismatches in AI skills at EU level (to identify both AI skills that remain relevant over time and emerging skills and AI learning offerings).

- Define in-demand AI-related roles and skills requirements (to align education and training efforts with the needs of the labour market ensures that people acquire the right skills to meet industry demands, promoting employability and economic growth).
- Design of educational profiles, certification framework and accreditation process (well-defined AI skills education and training programmes ensure consistency, quality, and adaptability making it accessible to diverse learners and industries).
- Design modular AI skills learning offerings (to enhance flexibility, accessibility and react to the vastly changing market environment and AI related developments).
- Establish and nurture an active community of stakeholders for AI skills development (to ensure relevance and diverse perspectives, new avenues for collaboration between industry, academia, and governments must be actively developed).
- Promote and increase overall understanding of AI (to ensure that AI education and awareness reach a wide audience making AI more accessible and better accepted).
- Accelerate AI upskilling and reskilling at different levels (to address the rapid changes in the AI landscape).

The EU, through the AI Act, is strongly supporting the development of ethical, inclusive, and human-centred AI.

Chinese Perspective

China's AI education and human resource development policy is outlined in an official document titled "A New Generation Artificial Intelligence Development Plan". The policy document emphasizes building a robust, high-end talent ecosystem to position the country as a global leader in artificial intelligence. China prioritizes cultivating a diverse and skilled AI workforce through a combination of domestic training and international talent acquisition.

By strengthening the AI education system, China aims to create a structured talent pipeline, focusing on both foundational and applied research, as well as operational expertise. The establishment of AI-specific academic disciplines and institutes, alongside increased enrolment in AI-related graduate programs, reflects a commitment to fostering specialized expertise. Additionally, the policy promotes interdisciplinary education through the “AI + X” model, integrating AI with fields like mathematics, biology, and law to produce versatile, composite professionals. This approach ensures that China develops not only technical experts but also professionals capable of applying AI across economic, social, and legal domains, aligning with national priorities for innovation and competitiveness.

To complement domestic efforts, China places significant emphasis on attracting global AI talent, particularly top scientists and young innovators in areas like machine learning and autonomous systems. Specialized channels and policies, such as the “Thousands Talents” Plan, are employed to recruit international experts, fostering collaboration between domestic and global AI research communities.

The focus on flexible talent acquisition through project-based cooperation and technical consultations highlights a pragmatic approach to filling skill gaps. Furthermore, the policy encourages partnerships between universities, research institutes, and enterprises to drive AI innovation, ensuring that academic advancements translate into practical applications. By integrating talent development with major R&D initiatives and platform construction, China aims to create a synergistic ecosystem that nurtures high-level innovation teams and establishes the country as a global AI talent hub, capable of addressing both current and future technological challenges.

Comparison

In terms of scope and focus, the EU emphasizes societal preparation, ethical AI, and reskilling for labour market transitions, while China focuses on building a high- end, specialized AI talent ecosystem for global competitiveness. In this context, the EU promotes modular, flexible education to address rapid technological changes,

whereas China integrates AI across disciplines with the “AI + X” model and expands AI-specific academic programs.

When it comes to talent acquisition, both aim to attract global talent, but China’s approach (e.g., Thousand Talents Plan) is more aggressive and centralized compared to the EU’s collaborative, stakeholder-driven model. Both China and EU prioritize academia-industry partnerships, but China’s policy integrates talent development with national R&D initiatives, while the EU focuses on aligning education with labour market demands and ethical standards.

In terms of challenges, the EU struggles with an AI skills gap and slow adaptation of education systems, while China’s challenge lies in balancing domestic training with global talent integration and ensuring practical application of research. Both policies aim to address AI-driven transformation, but the EU leans toward inclusivity and ethical considerations, while China prioritizes rapid, centralized development to secure global leadership.

B) Intellectual Property in Artificial Intelligence

EU Perspective

From the EU perspective the field of AI has brought with it a host of transformative possibilities across various sectors, including the realm of IP. The advent of AI has opened up a new frontier where the lines between human and machine creation are becoming increasingly blurred. However, with these advancements come significant challenges, particularly in terms of legal frameworks that are currently ill-equipped to handle the novel issues presented by AI.

Firstly, one of the most pressing issues is the legal uncertainty surrounding the ownership of IP when it comes to works created by AI, which can act as a significant brake on investment in AI-driven innovation. Entrepreneurs and companies without the assurance of being able to protect and capitalize on their innovations may be reluctant to allocate resources to the development and use of AI, which could hinder technological progress. Secondly, if a legal precedent were to default IP ownership to

AI systems or to the developers of such systems, a new set of issues arises, particularly regarding the valuation of human creativity. The prospect of not receiving due credit or remuneration for one's work could stifle the creative industry. Finally, the global nature of AI and its applications means that IP rights could be subject to a patchwork of international laws. Different countries may develop disparate approaches to AI-generated IP, with some perhaps recognizing the AI as the author while others might favor the human developer. This divergence in legal standards can lead to a fragmented legal landscape. Companies operating across borders may need to contend with a variety of regulations, increasing the complexity and cost of securing and enforcing IP rights globally.

The confluence of these factors presents a challenge to the current IP framework, and it underscores the need for a coherent and forward-looking legal response that acknowledges the unique contributions of both human and AI actors in the creative process, incentivizes innovation, and harmonizes protections across jurisdictions. As the Draghi report on The Future of European Competitiveness (2024) underlined, and as highlighted in the European Commission AI Continent Action Plan (2025), the EU must lead in the digital and AI transformation, not only by investing in infrastructure and skills, but also by shaping the IP regulatory frameworks that govern emerging technologies. In this context, two legal instruments are relevant: the Copyright in the Single Market Directive (CDSM) and the EU Artificial Intelligence Act (AI Act).

The CDSM establishes a legal framework for Text and Data Mining (TDM), by providing exceptions to the copyright holders exclusive right of reproduction for TDM activities for scientific research, and any others purposes. Specifically, Article 4 allows copyright holders to reserve their exclusive reproduction rights, which is commonly referred to as 'opting-out' of the TDM exception. When an opt-out reservation has been expressed, AI developers need an authorization by the right holder to use their content, for example through licensing agreement.

The AI Act sets out a regulatory framework for AI technologies in the EU, with specific obligations on the providers of general-purpose AI (GPAI) models. These obligations refer to compliance with the TDM opt-outs expressed by copyright holders. GPAI

system providers are also required to publish 'sufficiently' detailed summaries of the training data they utilize, to facilitate copyright holders enforcing their rights. The AI Act also places obligations on the deployers of AI systems to ensure that generative output is detectable in a machine-readable format.

Given the complexity of the AI ecosystem, policymakers and regulators are examining how existing legal frameworks should evolve to address the implications of large-scale AI adoption, and to balance innovation with IP protection.

Chinese Perspective

China's approach to Intellectual Property (IP) in Artificial Intelligence (AI) is deeply intertwined with its overarching national strategy to become a global leader in AI, driven by economic development, national security, and social governance objectives

China recognizes AI as a strategic technology for enhancing national competitiveness and protecting national security. Despite significant progress, China acknowledges a gap compared to developed countries in fundamental areas such as original basic theory, core algorithms, key equipment, high-end chips, and foundational software. This recognition heavily influences their IP strategy, emphasizing both indigenous innovation and strategic acquisition of foreign technologies

China employs a "whole-of-government" approach to accelerate its AI capabilities, which includes strategies for acquiring technology. This involves a number of strategies, as illustrated below:

- Reducing costs for accessing and absorbing foreign technologies through an "Introduce, Digest, Absorb, Re-innovate" (IDAR) approach, integrating acquired knowledge with domestic innovation.
- Direct investments and acquisitions of foreign AI companies and their underlying IP. For example, Chinese investments in US AI firms grew significantly between 2010 and 2017. The purchase of companies like Kuka AG by Midea Group Co., Ltd., supported by state-backed loans, aims to actively develop key components in industrial automation and AI.

- Licensing designs from foreign companies, as seen with Cambricon, China's first AI chip unicorn, which licensed designs from a Silicon Valley chip designer for critical components.
- Encouraging foreign AI enterprises and research institutes to establish R&D centres in China.
- Fostering indigenous innovation and patenting. The "New Generation Artificial Intelligence Development Plan" (AIDP) sets ambitious goals for China to achieve major breakthroughs in basic AI theories and to reach world-leading levels in some technologies and applications by 2025, aiming to be the world's primary AI innovation centre by 2030.

China already ranks second globally in the number of international scientific and technology papers published and patented inventions in AI. Specific examples of patenting activity include China filing the largest number of patents for gene-editing on animals worldwide.

In terms of IP Governance and Standardization, China is actively building a framework for AI IP. The 'White Paper on AI Standards' from the Standardization Administration of the People's Republic of China includes protecting intellectual property for commercial entities as one of its key ethical principles. The AIDP emphasizes improving "standardization of interactive support mechanisms to promote the innovation of AI intellectual property rights".

China also encourages its AI enterprises to participate in or lead the development of international standards, promoting a "going out" approach for technical standards to support overseas applications of its AI products and services. A notable strategy is the plan to "Establish AI public patent pools to promote the use of AI and the spread of new technologies". This indicates a collective approach to leveraging IP for broader technological diffusion within China.

Legal and ethical frameworks are being developed to address issues like property protection related to AI applications, including establishing traceability and accountability systems. In essence, China's IP strategy for AI combines aggressive

external technology acquisition with robust internal efforts to foster indigenous innovation, patenting, and a unique approach to IP pooling, all while developing a comprehensive legal and ethical framework

Comparison

The EU emphasizes ethical AI, human creativity, and harmonized IP frameworks to foster innovation. On the other hand, China prioritizes national competitiveness, rapid technology acquisition, and global AI leadership. In the field of IP ownership and innovation, the EU deals with legal uncertainties around AI-generated IP and seeks to balance human and machine contributions, whereas China aggressively pursues indigenous patenting and foreign technology absorption to close innovation gaps, focusing on traceability, accountability, and public patent pools to promote technology diffusion.

In terms of the legal framework, the EU aims for harmonized global IP standards to reduce regulatory complexity, while China promotes a “going out” strategy, leading international AI standards and leveraging acquisitions to access foreign IP. Besides, the EU faces challenges in adapting existing IP laws to AI and ensuring cross-border consistency, while China’s challenge lies in balancing external technology acquisition with robust domestic innovation and ethical IP governance.

C) Regulation Strategies

EU Perspective

The AI Act (Regulation (EU) 2024/1689 laying down harmonised rules on artificial intelligence) is the EU's flagship law to regulate how AI systems should be designed and used within the EU. The main objective of this regulation is to ensure that AI systems within the EU are safe, and comply with existing law on fundamental rights, norms and values. This regulation ensures the free movement, cross-border, of AI-based goods and services, thus preventing Member States from imposing restrictions on the development, marketing and use of AI systems, unless explicitly authorized by this regulation.

The AI Act applies to any firm operating an AI system within the EU and firms located outside the EU, identifying the following roles: the providers, who place an AI system or service on the EU market; the users located within the EU market; and the providers or users of AI systems that are located outside of the EU, but whose system is used (or has an output) on the EU market. The most relevant aspects of this regulation focus on two axes: the risk-based approach and the governance framework.

The regulation proposes a risk-based approach, classifying AI applications on a spectrum from no risk to banned entirely. This approach is the basis for a proportionate and effective set of binding rules:

- Unacceptable risk is prohibited (art. 5) (e.g. social scoring systems, manipulative AI, inferring emotions in workplaces or educational institutions, and biometric categorization systems inferring sensitive attributes).
- High risk is permitted but subject to compliance with AI requirements and ex-ante conformity assessment (art. 6). AI systems are considered high-risk if it profiles individuals (i.e. automated processing of personal data to assess various aspects of a person's life, such as work performance, economic situation, health, preferences, interests, behaviour, location or movement). The majority of obligations fall on providers of high-risk AI systems which must establish a risk management system throughout the AI system's lifecycle; conduct data governance; draw up technical documentation to demonstrate compliance; design the AI system to achieve appropriate levels of accuracy, robustness, and cybersecurity; and establish a quality management system (art. 8-17).
- Limited risk subject to lighter transparency obligations. Developers and deployers must ensure that end-users are aware that they are interacting with AI (chatbots and deepfakes).
- Minimal risk is unregulated (including the majority of AI applications currently available on the EU, such as AI enabled video games and spam filters).

The AI Act establish a governance framework that allows to coordinate and support the application of this regulation at national level, as well as build capabilities at EU level and integrate stakeholders in the field of AI. The European AI Office (art. 64)

supports to translate AI-driven initiatives into business value through trustworthy systems, while protecting against AI risks. It enforces the rules AI providers need to ensure the development of AI initiatives is aligned with ethical principles such as accountability, fairness, privacy, transparency and robustness, request information and measures from providers, and apply sanctions. In addition, the AI Office plays a key role in implementing the AI Act by supporting the governance bodies in Member States in their tasks.

Chinese Perspective

China recognizes the importance of AI ethics, explicitly aiming to establish initial AI ethical norms, policies, and regulations by 2020, with further codification into law by 2025. On the one hand, the National New Generation Artificial Intelligence Governance Expert Committee released eight principles in June 2019, emphasizing AI development for human well-being, respect for human rights, privacy, and fairness, and guidance by transparency, responsibility, collaboration, and agility. On the other hand, the Standardization Administration of the People's Republic of

China outlined three key ethical principles: human interest (AI for human welfare), liability (accountability and transparency), and consistency of rights and responsibilities (proper data recording, oversight, and IP protection for commercial entities).

While similar to global principles, China's AI ethics may place greater emphasis on social responsibility and group/community relations, with comparatively less focus on individualistic rights, reflecting Confucian ethics. China's state oversight involves centralized planning, strategic resource allocation, and a unique approach to data and social governance. Under the AIDP, which acts as a unified plan to coordinate stakeholders, China has designated "AI national champions" (e.g., Baidu for autonomous driving, Alibaba for smart cities) who receive preferential support in exchange for aligning with strategic goals. Local governments are incentivized to test and develop central policies, sometimes leading to large-scale funding initiatives.

Despite ethical principles mentioning privacy, China has historically had weak data protection regulations, allowing extensive data collection. While the Personal Information Security Specification (2018) provides a voluntary standard for privacy, its effectiveness is limited by numerous loopholes, significant exemptions for government interests (e.g., security, public interest), and the subordination of the judiciary to the Chinese Communist Party. This creates a "dual ecosystem" where the government can collect vast data for its purposes, even while admonishing private companies for similar practices unless serving state interests.

The AIDP emphasizes strengthening research and evaluation of AI's influence on national security, building early warning mechanisms, and promoting an open and transparent AI supervision system with "design accountability". It also aims to increase disciplinary efforts against data abuse and privacy violations.

Comparison

The EU has adopted a legally binding regulatory framework through the AI Act. This regulation applies a risk-based approach, classifying AI systems as unacceptable, high-risk, limited-risk, or minimal-risk. It aims to safeguard fundamental rights, such as privacy, transparency, and accountability, while encouraging innovation within clear ethical boundaries. Enforcement is coordinated through the European AI Office, which works with Member States to ensure compliance and support responsible AI development across the EU.

In contrast, China regulates AI through a state-led policy framework, primarily guided by its New Generation Artificial Intelligence Development Plan (AIDP) and accompanying ethical guidelines. While China emphasizes principles like human welfare, accountability, and transparency, its regulatory approach prioritizes national strategic goals, including social stability, economic modernization, and national security. Data governance is state-centric, allowing extensive government access to personal data, often at the expense of individual privacy rights. Enforcement is more discretionary and aligned with centralized planning, with state-backed companies (like Baidu and Alibaba) playing leading roles in implementing AI initiatives.

D) Strategies for AI in Industry and Defense

EU Perspective

At the industrial level, the EU faces several challenges that require a strategic approach to foster AI-driven innovation:

- Most developments in AI are currently taking place in non-EU countries, which are making substantial investments, driven mostly by large tech corporations.
- Dependence on foreign technology creates vulnerabilities in strategic sectors, potentially limiting the EU's ability to set its own standards and protect its values.
- Many companies in the EU, especially mid-caps and SMEs, struggle with AI adoption. Only 13.5% of companies in the EU had adopted AI technologies (Eurostat, 2024).
- There is insufficient private investment in AI and only limited collaboration on AI between larger corporations and smaller technology firms. These shortcomings hamper innovation, slow down the growth of emerging businesses and weaken the development of a dynamic and competitive tech sector.

To face these challenges, the EU has launched a first wave of funding opportunities to integrate AI in Europe's strategic sectors and industrial ecosystems, and keep their competitive edge, as part of the GenAI4EU flagship initiative. The initiative is close to €700 million funding planned in Horizon Europe, the Digital Europe Programme, and the European Innovation Council. The specific sectors (advanced manufacturing; aerospace; security and defence; agri-food; energy; environment and climate; mobility and automotive; pharmaceutical; biotechnology; robotics; electronic communications; advanced material design; and cultural and creative industries) are aligned with those identified in the EU Industrial Strategy and the Draghi Report. This initiative will promote the development of large, open innovation ecosystems that

encourage collaboration between AI developers, including startups and scale-ups, and strategic European industrial players and the public sector.

This first initiative is intended to be complemented by the Apply AI Strategy planned to be published later 2025. The Strategy will outline how the EU plans to close this gap, building on initiatives like GenAI4EU to deliver AI solutions “Made in Europe”. The Apply AI Strategy will establish links to the EU Strategy for AI in Science, which will be adopted at the same time, and will address different policy dimensions, such as coordinating with Member States; adapting funding instruments; facilitating scientists’ access to infrastructure; and developing communities around the use of AI in the different scientific domains.

At the defence level, the European Defence Agency’s (EDA) Annual Conference 2021 entitled ‘Innovation in European Defence’ focused on emerging disruptive technologies (EDT), such as AI, big data, quantum technology, robotics, new advanced materials, blockchain, hypersonic weapons systems and biotechnologies applied to human enhancements, to name only them, are expected to have a disruptive impact on defence and revolutionize future military capabilities, strategy and operations. AI plays an important role in the autonomous systems (AS) that provides substantial military value, offering benefits such as reducing personnel exposure to operational risks, accelerating decision-making in time-critical operations, and improving performance through enhanced precision, speed, and endurance. EDA has recently developed the Action Plan on Autonomous Systems (APAS) that serves as a strategic initiative to coordinate and enhance these efforts establishing priorities and fostering complementarity among EU programmes. The APAS proposes the following action lines:

- Technology discovery, development, and integration. Focused on enhancing the abilities of autonomous systems to sense, think/decide, move, act, team, self protect, and self-monitor.
- Enhancement of enabling technologies. Prioritize the advancement of key technologies such as AI, network infrastructure, and open system architectures

to guarantee interoperability, cost effectiveness, and compatibility with legacy equipment.

- Addressing non-technological challenges. Focused on impacting technology, such as certification, regulation, ethics, standardization, and concept development.

More recently, EDA in the Whitepaper Trustworthiness for AI in Defence (2025) has establish the starting point for future related AI research activities and project proposals that will provide to the community the adequate information and knowledge of how to plan, develop, acquire, test and use defence AI systems. The main recommendations are summarized as:

- Managing AI impacts on EU sovereignty.
- Establishing an EU AI risk repository for defence.
- Enabling AI integration in embedded systems.
- Develop an AI risk management framework for defence.
- Develop a Standardization Management Plan for AI standards for defence.
- Testing and evaluation infrastructure requirements for AI-based defence systems.

Chinese Perspective

Central to China's AI strategy is the Military-Civil Fusion (MCF) initiative. MCF is a state-led and state-directed program designed to strengthen and support the People's Liberation Army (PLA) by leveraging capabilities from both state and commercial sectors. While similar to American civil-military integration (CMI) on the surface, China's MCF is described as "far deeper and more complex". Xi Jinping has elevated MCF to a national strategy, aiming to address deep-seated issues and drive concrete results by cutting through obstacles created by existing interest groups. The AIDP explicitly states its aim to "promote military-civilian two-way transformation of AI technology" and "co-construction and sharing of military and civilian innovation resources".

The AIDP highlights AI as a "new engine of economic development", intending for it to be the driving force behind a new round of industrial transformation. This is expected to significantly boost China's GDP (up to 26% by 2030, according to one report) and create employment opportunities.

China has several mechanisms in place to promote AI in industry and defence as below:

- **National Champions:** China has designated "AI national champions" (e.g., Baidu for autonomous driving, Alibaba for smart cities, Tencent for computer vision in medical diagnoses) to lead development in specific areas. These companies receive preferential support in exchange for aligning with strategic goals.
- **Industrial Upgrades:** The strategy promotes smart manufacturing processes, distributed smart manufacturing, networked coordinated manufacturing, and long-distance diagnosis and operational services. It also encourages innovation in smart logistics, smart finance, and smart commerce, including big data systems, smart equipment, and financial risk warning systems.
- **Enterprise Development:** Efforts are made to upgrade enterprises' "smartness levels" by integrating AI into design, production, management, logistics, and sales, fostering new business models and individualized products.
- **Innovation Ecosystem:** The plan aims to build an "open and coordinated AI technology innovation system" by establishing basic theory systems, key general technology systems, and innovation platforms. This includes creating AI innovation heights, industrial parks, and mass innovation bases to gather talent and enterprises.
- **Joint Research & Development (R&D):** There's an emphasis on collaborative innovation among scientific research institutes, universities, enterprises, and military industry units. For example, the National University of Defence Technology (NUDT) and the Academy of Military Sciences (AMS) are key players in military-affiliated AI research.

AI is considered a "major strategy to enhance national competitiveness and protect national security". The PLA sees AI as an opportunity to "leapfrog" potential adversaries

and achieve breakthroughs in military capabilities. This builds on a long-term strategy of developing "trump-card" (shashoujian) asymmetric capabilities against perceived enemies' weaknesses.

The AIDP explicitly calls for promoting the "two-way transformation and application" of military and civilian AI technologies. This includes directing civilian AI advancements towards defence applications and encouraging S&T researchers to participate in national defence AI research. The strategy emphasizes sharing communication infrastructure and data resources between military and civilian sectors, and promoting military-civilian sharing of AI innovation platforms and bases.

AI is crucial for China's "Cyber Great Power" strategy. This involves strengthening cybersecurity monitoring, early warning, and emergency responses by mobilizing civilian IT and cyber talents to "jointly build a cyberspace line of defence" (reflecting a "People's War" approach). It also includes strengthening military-civil joint management of online public opinion for "ideological security". The strategy specifically targets nascent technological areas with dual-use potential, including biotechnology, new energy, and artificial intelligence itself. In biotech, MCF aims to seize the "commanding heights of military struggle in biology," with concerns raised about "weaponizing biotech" and gene-editing technologies. New energy is seen for its military utility, like powering remote PLA outposts.

Comparison

At a general level, the EU focuses on reducing foreign tech dependency, boosting SME AI adoption, and ensuring ethical AI use, and China aims for global AI leadership, economic transformation, and military superiority through MCF.

When it comes to industry approach, the EU promotes collaborative ecosystems and funding for strategic sectors, whereas China designates national champions and upgrades enterprises' "smartness" across manufacturing, logistics, and finance. In terms of defence strategy:

- The EU emphasizes autonomous systems, interoperability, and ethical AI via risk management frameworks, while China pursues AI for asymmetric military advantages, cybersecurity, and dual-use technologies like biotech.
- The EU fosters public-private partnerships and Member State coordination, while China's MCF integrates civilian and military sectors for shared innovation platforms and resources.
- The EU seems to be struggling with low AI adoption and investment, while China faces challenges in coordinating its vast MCF ecosystem and aligning civilian innovations with military goals.

In essence, the EU prioritizes ethical, collaborative AI integration to maintain competitiveness and sovereignty, while China pursues an aggressive, state-driven strategy to dominate AI globally across civilian and military domains.

E) Strategies for Supporting AI Entrepreneurs

EU Perspective

The EU has put startups among the key priorities, with the goals of closing the innovation divide between the EU and its global competitors and boosting competitiveness. However, the regulatory and business environment in the EU is still not sufficiently conducive for bringing innovative products, services and solutions to users at the necessary scale. As a result, many innovative companies end up seeking venture capital and expanding opportunities outside Europe: around 60% of all global scaleups are based in North America, in contrast with only 8% in the EU, and the share of the EU in the global share of venture capital raised is only 5%, compared to 52% in the United States, or 40% in China.

The EU Startup and Scaleup Strategy (2025) aims to make Europe a global leader in innovation by supporting startups throughout their lifecycle. There is a recognized need to address the financial, regulatory and administrative obstacles that limit or slow down startups from scaling up into mature, profitable companies and to incentivize them not to relocate out of the EU. This includes initiatives focused on

access to finance, reducing red tape, facilitating market access, attracting talent, and improving access to infrastructure and services.

Considering that mastery of the latest advances in AI will become a key lever for Europe's competitiveness and technological sovereignty, the EU boasts strong assets to create a thriving startup and innovation ecosystem for AI. In this context, the EU AI Start-Up and Innovation Communication (2024) describes the strategic framework that has the following focus in the field of startups:

- Upgrade the EuroHPC supercomputers to AI capabilities and facilitate access for startups and the science and innovation community in need of training AI models.
- Increase the availability of and facilitate access to high-quality data for AI startups and the science and innovation community.
- Encourage public and private investments in AI startups and scale-ups, including through venture capital or equity support.

The above strategic framework will be put in motion establishing “AI Factories” and investing in AI startups and scale-ups. Today more than 90% of the worldwide venture capital investment in AI, which shot up from EUR2.7 billion in 2022 to 24 billion in 2023, is done in the United States. Attracting investment in European AI startups is crucial for accelerating the deployment of advanced AI solutions. The collaboration between investors and these startups holds the key to unlocking new possibilities and driving the next wave of technological breakthroughs.

The EU is putting in place financial instruments to support these startups' efforts, to de-risk and crowd in private investors. On the one hand, financial support through Horizon Europe and the Digital Europe programme dedicated to generative AI will generate an additional overall public and private investment of around EUR4 billion until 2027; on the other, further encourage public and private investments in AI startups and scale-ups, including through venture capital or equity support (including via new initiatives of the EIC accelerator Programme and InvestEU). To harness the benefits of the AI transformation, the EU implemented the GenAI4EU to stimulate the

development of strategic innovation ecosystems fostering collaboration between AI startups and deployers of AI in industry and the public sector. Application areas include robotics, health, biotech, manufacturing, mobility, climate and virtual worlds.

In addition, the EU continues to work on the development of the Capital Markets Union, in order to improve financing for European startups and strengthen European economic security.

Chinese Perspective

China's strategy for supporting AI entrepreneurs is deeply integrated within its broader "New Generation Artificial Intelligence Development Plan" (AIDP) and its overarching Military-Civil Fusion (MCF) initiative. This approach is characterized by a "whole-of-government" effort that leverages all levers of state and commercial power to achieve its AI ambitions. The AIDP functions as a "highly incentivised wish list", where the central government provides strategic direction, but actual innovation and transformation are largely driven by the private sector and local governments.

Key strategies for supporting AI entrepreneurs in China include "Massive Government Funding and Strategic Investment Vehicles". The AIDP sets ambitious financial targets, aiming for the core AI industry to exceed USD21 billion 2020, 56 billion by 2025, and 140 billion by 2030. The scale of related industries is projected to exceed USD1.14 trillion by 2030. This indicates immense financial backing for the sector.

China employs a multi-channel financial input system, drawing from finance administration funding, financial capital, and social capital. It explicitly encourages the use of angel investment, risk investment, and start-up investment funds to guide social capital towards AI development. Government guidance funds, which are public-private investments, are strategically directed towards critical industries like AI. As of the first quarter of 2020, these funds registered USD1.55 trillion, demonstrating the significant resources dedicated to technological innovation. State-backed credit providers actively support the acquisition of foreign technologies by Chinese multinational enterprises (MNEs). For instance, China Exim Bank provided a loan to

Midea Group for its purchase of Kuka AG, a German industrial robot manufacturer. These investments contribute to the growth and capability of related AI industries.

In terms of state-backed incubators and innovation bases, the grand strategy aims to "create AI innovation heights" and "construct national AI industrial parks" by leveraging existing independent innovation demonstration areas and high-tech industry development zones. These parks are designed to attract high-end resources, enterprises, and talent, fostering AI industry clusters.

When it comes to incentives and supportive policies, Chinese government provides direct subsidies and tax rebates to companies in key industries, including AI. The AIDP specifically includes provisions for tax incentives for small and mid-sized enterprises and startup AI development, utilizing existing high-tech enterprise tax incentives and R&D cost deductions. Efforts are underway to establish AI Open-Source Hardware and Software Integrated Platforms for big data and AI software, which are seen as vital for "democratizing innovation" and fostering bottom-up development.

Despite these comprehensive efforts, China faces challenges such as a acknowledged low self-sufficiency in "core, critical technologies" (e.g., high-end chips, essential software), which necessitates continued reliance on imports. Additionally, structural issues within the defence industrial base, such as "sectorization" and de-facto monopolization, can hinder broader civilian participation.

In sum, China's strategy for AI entrepreneurs is characterized by a top-down, coordinated approach that involves substantial state funding, the creation of dedicated innovation hubs and incubators, strong policy incentives, aggressive talent acquisition, and strategic infrastructure development, all aimed at fostering a globally competitive AI ecosystem.

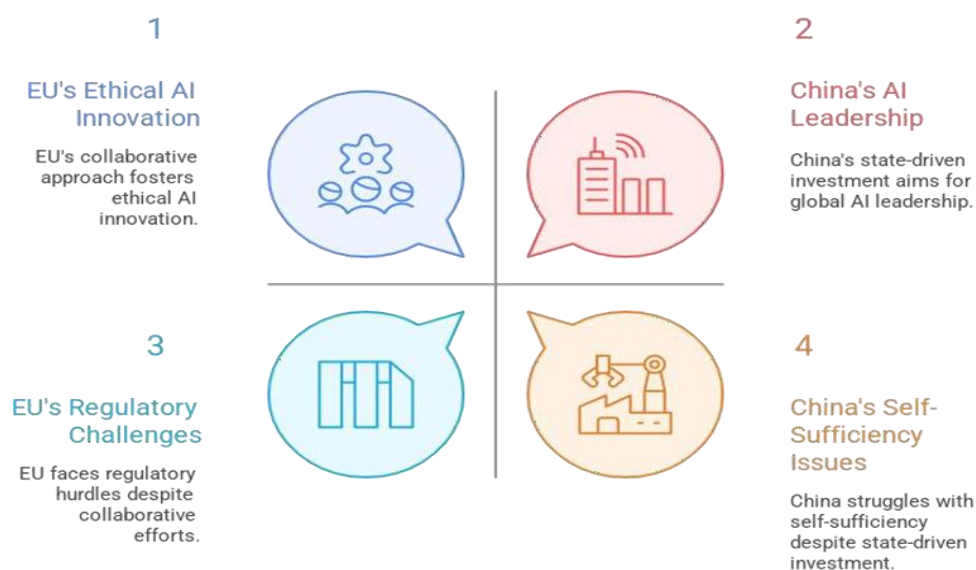
Comparison

In the field of entrepreneurship, the EU is focusing on retaining startups, reducing regulatory barriers, and fostering ethical innovation in AI; it aims to retain talent and startups; and prioritizes collaborative and ethical AI ecosystems. China aims to achieve global leadership in artificial intelligence through state-led investments and

infrastructure; aggressive acquisition of foreign technology and talent to close gaps; and a top-down strategy, supported by robust funding, to achieve global dominance.

In terms of ecosystems, the EU prioritizes public-private collaboration and access to supercomputing and data, while facing challenges with regulatory complexity and a shortage of venture capital. China, for its part, is building state-backed innovation parks and open-source platforms and is facing low self-sufficiency in key technologies and structural problems, primarily in the defence sector.

Comparative Analysis of AI Strategies: EU vs. China



Made with Napkin

3. Future Prospects

EU Perspective

AI presents challenges and opportunities for the EU because it is one of the most disruptive and promising technologies of our time. One of the most powerful lessons we can learn from processes of technological change is that the dissemination throughout society of the opportunities generated by technical progress depends on

the institutions. If they are flexible and dynamic, they will facilitate the emergence of new sectors and occupations that take full advantage of the new technology and cushion the negative effects on the most exposed occupations.

What do we know right now about the impact of AI? The empirical studies available have a microeconomic spectrum and refer to specific occupations, and show that AI has a very high potential to increase worker productivity. Beyond these initial results, the impact of AI on the labour market is still uncertain. On the one hand, the effect on existing occupations must be taken into account, which will depend in each case on the degree of overlap between the capabilities of AI applications and the tasks performed by the worker, and the degree of protection of the workplace (due to technical, legal, or ethical reasons, etc.). In addition, we must consider the new occupations that will emerge directly as a result of AI, such as that of prompt engineer, algorithm auditor, experts in AI-related legal regulation or ethics, etc., or due to the emergence of new products, services or business models.

The challenges for EU policy and institutions are vast, covering areas ranging from education (what kind of training do we need to prepare for the AI era?) to competition and innovation (AI offers opportunities for innovation, but it carries risks, such as market concentration), and even inequality (how can we protect those segments of the population that suffer the negative effects of AI on wages and employment?). The EU public policies must promote the adaptation of the education system to AI; manage the costs derived from the possible destruction of jobs, through active employment policies; ensure EU strategic autonomy in infrastructures that support the development of AI, and develop a regulatory framework to promoting the trustworthiness of AI.

From the perspective of opportunities, the global AI market is projected to grow annually by 15.8% over the 2024-2030 period to 680 billion EUR in 2030. Despite the EU's strong AI research capacity, private investment in AI has been lower than in other leading AI regions (US and China) since 2015. Furthermore, this capacity is not sufficiently translated into research results in the EU economy and industry, as evidenced by the fact that despite the global growth in AI patents, in 2021 Europe and

Central Asia accounted for 4% of global patent applications, compared to approximately 17% in North America and 62% in the East Asia and Pacific region.

Overall, the actions implemented by EU covered key dimensions that are important for the development of an EU ecosystem for AI that includes regulation and coordination, putting technological and financial enablers of innovation, and direct investment in AI research projects. However, these multiple actions had a limited effect in developing the EU AI ecosystem and, in addition, the EU has few governance tools available to coordinate national actions effectively. To address these opportunities, the EU must adopt measures such as: reinforce planning and coordination of AI investment (partnerships between the public and private sectors); enhance the accessibility and scale of EU capital support for AI-innovative startups and SMEs; facilitate startups and SME access to AI facilities across the EU; improve the coordination between member states; and support the exploitation of research and innovation results in the AI field.

Chinese Perspective

China's future prospects in Artificial Intelligence (AI) are shaped by an ambitious, state-directed strategy and significant resource allocation, underpinned by its "New Generation Artificial Intelligence Development Plan" (AIDP) and the "Military-Civil Fusion" (MCF) initiative. This approach represents a "whole-of-government" effort to leverage all state and commercial power to achieve its AI ambitions.

Ambitious goals and timelines of China are the following:

- **Global Leadership by 2030:** The AIDP sets the overarching goal for China to become the world's innovation centre for AI by 2030.
- **Economic Scale:** The plan projects the core AI industry to exceed USD56 billion by 2025, and 140 billion by 2030. Related industries are expected to exceed USD1.14 trillion by 2030.
- **Strategic Breakthroughs:** By 2025, China aims for a "major breakthrough" in basic AI theory and to be world-leading in some applications. By 2030, it aims

for major breakthroughs in brain-inspired, autonomous, hybrid, and swarm intelligence.

Government guidance funds are strategically directed towards critical industries like AI, with registered capital of USD1.55 trillion as of Q1 2020. These funds are intended to stimulate innovation and entrepreneurship. Besides, the AIDP explicitly encourages angel investment, risk investment, and start-up investment funds to guide social capital toward AI development. Direct subsidies and tax rebates are provided to companies in key industries, including AI.

AI development is deeply intertwined with MCF, aiming for an "all-element, multi-field, high efficiency AI military-civilian integration pattern". This involves promoting the two-way transfer of mature technologies between military and civilian sectors, commercializing defence-derived scientific advancements.

China acknowledges a "gap between China's overall level of development of AI relative to that of developed countries", particularly in "basic theory, core algorithms, key equipment, high-end chips, major products and systems, foundational materials, components, software and interfaces". The ability to produce "original innovations" or "0 to 1" breakthroughs remains a significant challenge.

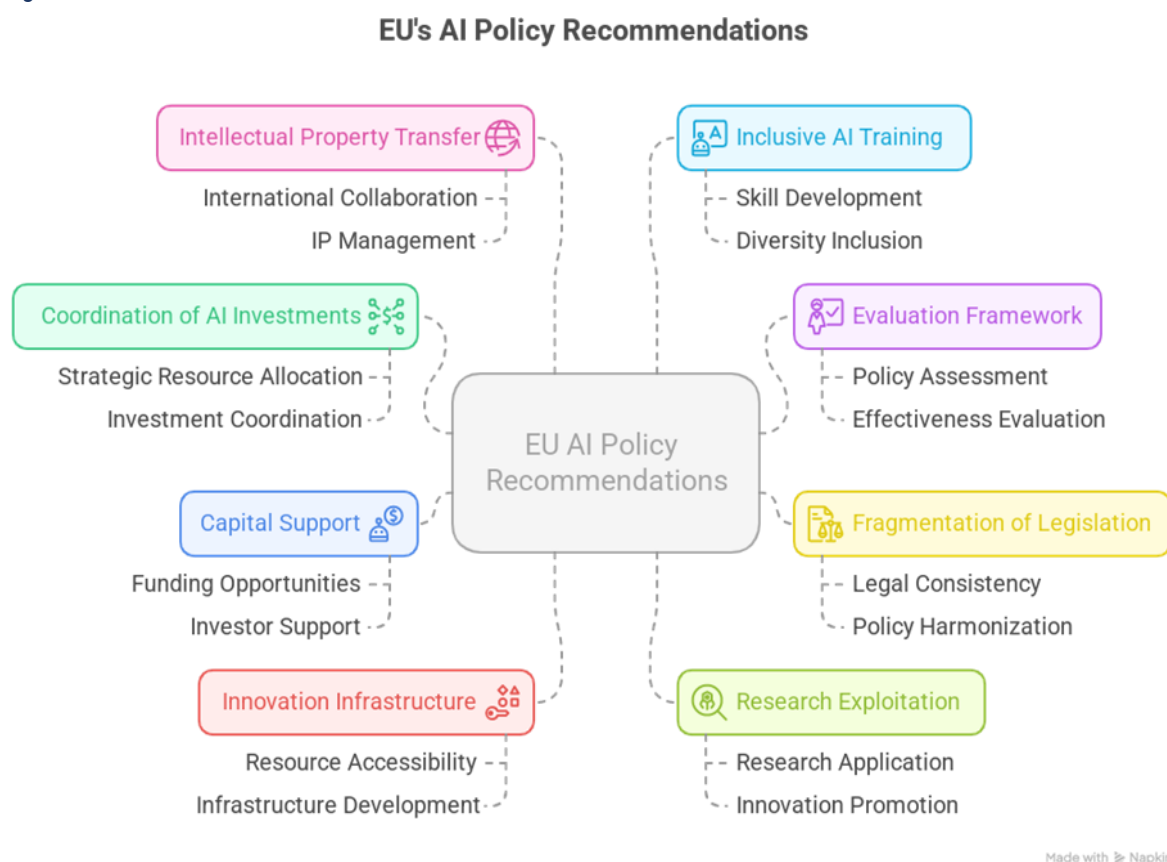
Given the vast resources, coordinated state efforts, and ambitious targets, China is highly likely to continue its rapid advancement in AI. It will likely solidify its position as a global leader in AI applications and the integration of AI into various economic and military sectors. The strategic emphasis on talent cultivation and attraction, coupled with massive investments in digital infrastructure, points to a long-term commitment to building a robust AI ecosystem.

However, China's ability to achieve its ultimate goal of world-leading AI innovation will depend on its capacity to overcome its acknowledged weaknesses in foundational, "0 to 1" original research and its reliance on foreign core technologies, especially high-end chips. The tension between centralized state control (especially for social governance and military aims) and the need for open, market-driven innovation, along

with evolving ethical and privacy concerns, will remain critical factors shaping its trajectory.

4. Policy Recommendation

The EU is taking a comprehensive approach to regulating AI, focusing on trustworthiness and ethical considerations while fostering innovation. Based on the actions outlined in this discussion paper, it is strategic for the EU to implement concrete and specific policy initiatives to contribute to the development of a European AI ecosystem.



To this end, the following actions are recommended:

Recommendation 1: Strengthen the coordination of AI investments

The EU has designed plans to coordinate increased investment in AI across all Member States. However, EU and national measures have not been effectively

coordinated. Furthermore, the EU has few governance tools to effectively coordinate national actions, resulting in unclear ways in which Member States should contribute to achieving the EU's AI investment targets. In this context, the EU should assess the AI investment target and agree with Member States on how they might contribute to it, and implement new coordination tools with national AI investment objectives.

The existence of an EU body coordinating projects during the planning, implementation, or evaluation phases could improve the monitoring of actions and the efficiency of AI planning and funding (for example, to avoid double funding or identify investment gaps).

Recommendation 2: Strength the evaluation framework of AI policy

The EU lacks a precise overview of AI-funded projects across EU programs due to the lack of performance indicators or targets for evaluating AI grants. This information could contribute to the accountability of EU AI plans and allow EU intervention to make adjustments to address any shortcomings in the planning and implementation of AI research. Consequently, the EU should design specific actions to enable it to conduct an evaluation of its AI policies and programs.

Recommendation 3: Address the fragmentation of EU AI legislation

The EU has implemented various measures to create a harmonized EU legal framework for the development and use of trustworthy AI with the goal of ensuring a high level of data protection, digital rights, and ethical standards, at the same time. The recent agreement on the AI Act is a key milestone. However, the design of the regulatory framework for AI, which began several years ago, is still ongoing. In line with that, it is necessary to propose new regulations that address the societal implications associated with the rapid commercialization and adoption of AI technologies, and create institutional mechanisms to ensure that the new guidelines are applied uniformly in all EU Member States.

Recommendation 4: Increase capital support for AI innovators

Although the EU is lagging behind in the global race for AI capital, the specific measures adopted by the plans have not yet had the expected scale effect on the provision of capital support for European AI SME, startups and scale-ups. One of the intended impacts was for Member States to actively support AI by participating in nationally funded capital support programs. However, the EU has not monitored its implementation and lacks an overview of public and private capital funding for AI innovators in the EU. In this context, the EU should improve the accessibility and scale of EU capital support for innovative SMEs, startups, and scale-ups in AI established in the EU by increasing specific funding, as well as by designing mechanisms to periodically assess the adequacy of this funding.

Recommendation 5: Facilitate access to AI innovation infrastructure

The Digital Europe Programme aimed to invest in infrastructure to facilitate the development and adoption of AI technologies by SMEs (testing and experimentation facilities, AI libraries, digital innovation hubs, and data spaces). These facilities are managed by private consortia and co-financed by participating member states. To date, the EU has launched infrastructure with less than half of the budget, resulting in some AI facilities either being launched late or not yet fully operational, limiting their ability to provide services in a rapidly evolving AI market. To avoid this delay and facilitate SMEs' access to AI facilities across the EU, the EU must ensure that EU-funded AI innovation infrastructures operate in a coordinated manner with a single access point.

Recommendation 6: Increase the exploitation of AI research results

Increasing the exploitation of AI research results is key to boosting innovation and the development of AI ecosystems in Europe. Current programs require EU grant recipients to exploit and disseminate the results of their R&D projects, primarily within the EU. However, exploitation plans do not necessarily lead to commercialization or exploitation results, because the EU carries out limited controls to ensure this. The EU should strengthen its action to support the exploitation of R&D results in the AI field

in the EU. For example, a relevant mechanism that can facilitate the commercialization of the results of AI innovations developed at universities is spin-off companies created by students or researchers. However, evidence shows that significant obstacles remain in the EU that discourage potential entrepreneurs from creating new spin-off companies, such as complex administrative procedures and financial negotiations.

Recommendation 7: Implement actions for the transfer of intellectual property to a third country

One measure the EU has in place to ensure the exploitation of EU-funded AI research results is the right of the funding body to oppose transfers of ownership and the granting of exclusive licenses over those results (e.g., intellectual property rights) to third parties established in a non-associated country. However, this objection can be exercised if the grant agreement includes a clause to this effect. In this context, the EU should design a specific policy that includes guidelines for assessing the legal criteria that project leaders should apply to AI grants in relation to the transfer of intellectual property to a third country.

Recommendation 8: Invest in inclusive AI training

The AI Act does not address the broader societal impacts of new AI technologies, such as their significant potential to disrupt the labour market. In this context, it is necessary to generate more comprehensive data that reflects the impact of AI on the European labour market and that allows for the identification of the interaction between different structural inequalities. This effort should be complemented by specific policies to equitably redistribute the benefits of AI, such as investing in customized training for employees affected by its implementation, taking into account their current skill level, the specifics of their work, and other relevant characteristics, such as their gender.

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