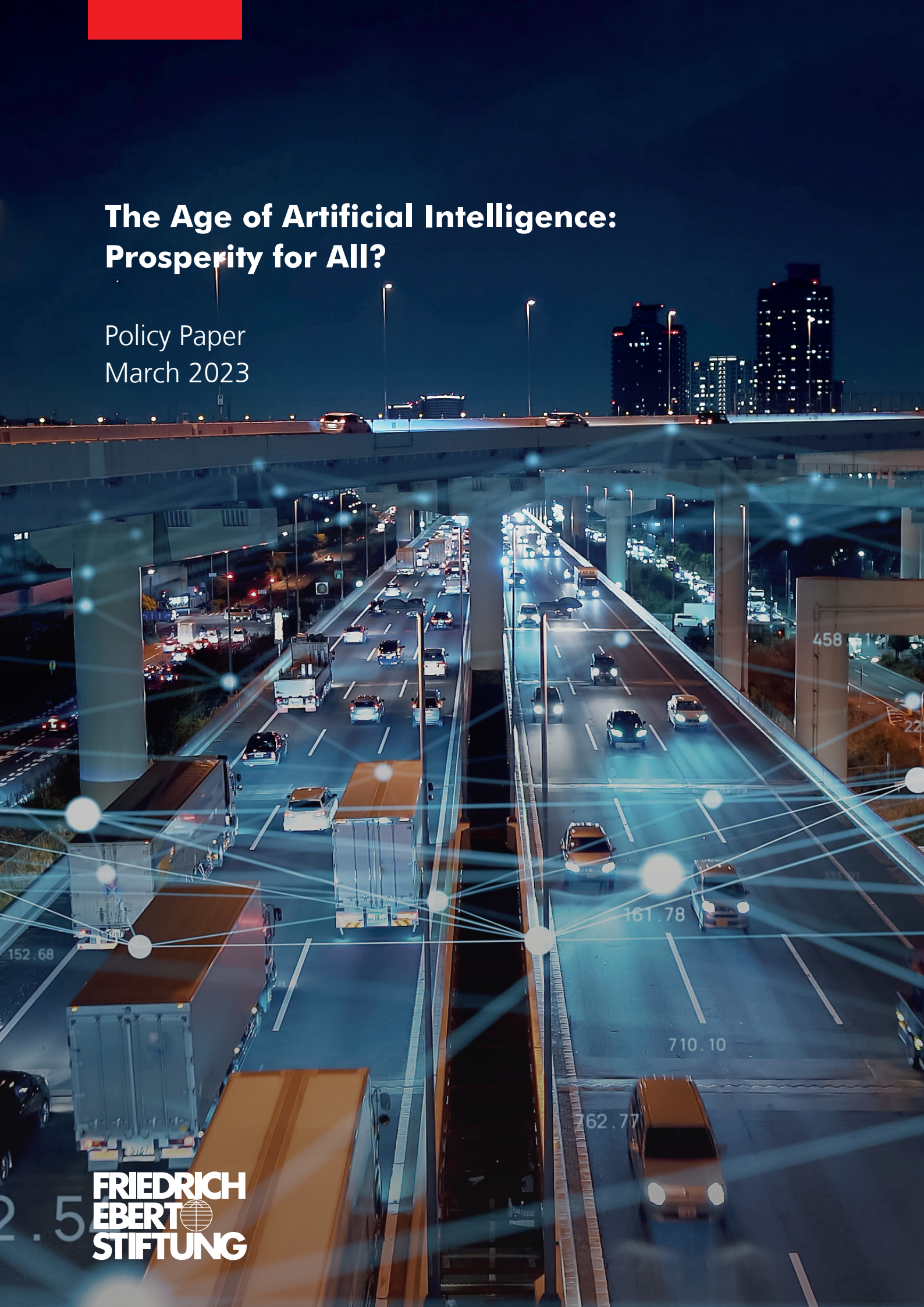


The Age of Artificial Intelligence: Prosperity for All?

Policy Paper
March 2023



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List of Abbreviations

Abbreviation	Explanation
AI	Artificial Intelligence
CAC	Cyberspace Administration of China
EU	European Union
FES	Friedrich-Ebert-Stiftung
MGI	McKinsey Global Institute
OECD	Organization for Economic Co-operation and Development
R&D	Research & Development
ROI	Return on investment
UNESCO	The United Nations Educational, Scientific and Cultural Organization

Foreword

Artificial intelligence is one of the most significant technical developments of our time. Its impact on the global economy and society as a whole is hard to estimate, and it is our responsibility to evaluate both its potential and challenges. The new generation of artificial intelligence, which is defined by deep learning, cross-border integration, human-machine cooperation, crowd intelligence openness, and autonomous control, has made constant advances and has become a significant driving force of technological revolution and industrial transformation. Despite improving the quality of human production and life, technical characteristics of the new generation of AI, such as black box algorithms and data dependence, have resulted in numerous risks and challenges, underlining the need for effective governance and legislation.

Our project “The Age of Artificial Intelligence: Prosperity for All?” presents an examination of the topic, providing an overview of the current state of AI, its regulation in China and the EU, and the steps required to maximize its potential, while mitigating its risks by putting forward a number of policy recommendations.

This project was jointly organized and implemented by the Representative Office of the Friedrich-Ebert-Stiftung (FES) in Shanghai and the Intellisys Institute in Guangzhou. The present study is the result of a total of four workshops that were conducted between September 2022 and February 2023 with Chinese and German experts from policymaking, industry and academia. The positions expressed here are the essence of our discussions. Our objective is to imagine the challenges and changes AI will bring about and how to manage them in such a way as to share the fruits of this technological progress between employees, businesses and society. In Utopian terms, to provide “Prosperity for All”.

This paper is a useful resource for policymakers, corporate executives, scholars and everyone else interested in this disruptive technology. We hope that our ideas and suggestions can be the starting point of a wider debate about how our societies can

manage this challenge and use this opportunity to everyone’s benefit.

I. Background

1.1 A brief introduction to AI technologies

Artificial intelligence (AI) is one of the most rapidly expanding fields of technology and the foundation of computing innovation in the 21st century. As a technology, AI enables computers to perform sophisticated tasks such as the observation, interpretation and translation of verbal language, analysis of data, and decision-making.

From the Greek tale of Pygmalion to the Victorian novel Frankenstein, humans have dreamed for millennia that it might be possible to create a creature with human-like intelligence and behaviour. With the advancement of technology, we have realized that AI would not exist as a self-contained entity, but rather as a group of tools and networked systems that may augment and adapt to human needs.

The development of AI has profoundly impacted

every aspect of society, from transportation to home automation, from manufacturing to education, even retail. The ubiquity of artificial intelligence can be observed in many fields. Through AI technology, we can manage traffic flow more efficiently, improve manufacturing productivity, improve climate modeling and food distribution, enhance the living experience of homes, and provide more personalized education and shopping services. As AI technology continues to develop and improve, its application scenarios and scope of influence are constantly expanding, making it a very large industry. AI has already become omnipresent in our lives, and we need to deepen our understanding and exploration of its potential in order to utilize the enormous value it brings in various fields.

Figure 1 provides an overview of the current landscape of the AI industry as depicted by the China Academy of Information and Communications

Figure 1: Overall state of AI sectors, products, and software and hardware support



Technology (CAICT).¹ The diagram highlights three main categories: hardware and software support, intelligent models and AI product applications. It illustrates how AI has already encompassed most human social life and become an inseparable part of it.

AI has the potential to provide solutions for many of the challenges we face today. AI can be a source of accelerating digital transformation, providing cost savings during a period of staggering inflation, supporting automation efforts in times of labour shortages and making human labour more safe, convenient and meaningful². The commercial use of AI systems has achieved tremendous growth, and the general application scenarios have achieved a significant level of maturity. Besides, AI can improve efficiency and productivity, accelerate digital transformation and innovation, and address labour shortages by automating tasks. With proper implementation and training, AI can enhance job quality and provide new opportunities for employees to develop new skills.

The overall state of AI sectors, products and software and hardware support may be categorized into the following contexts, which are detailed in Figure 1. Currently, the theory and technology of artificial intelligence are improving, while business models are progressively emerging and diversifying. In other words, the AI sector is a technology cluster comprised of multiple intersecting technologies, and once the core technology achieves a breakthrough or is constrained, the entire industrial cluster will experience a significant impact.

One could argue that the potential applications of AI are vast and diverse, with the potential to improve efficiency, performance and cost reduction in various sectors. As a result, AI has the capacity to bring about significant change and transformation in traditional fields. Currently, AI is being utilized in

a range of industries, including healthcare, transportation, manufacturing, finance, and retail.

While it may make life more convenient and replace human labour in difficult-to-perform duties, the reliance on AI systems could also result in a lack of personal connection and empathy in certain fields (such as healthcare) and pose social problems through the abolishment of jobs on all skill-levels, even those that were expected to be immune to technical automation. As AI continues to evolve and become more integrated into society, it is crucial to consider and mitigate these potential consequences.

As a result, the use of AI raises moral and ethical questions, which were also discussed in the workshop.

1.2 AI Regulatory Policies in the EU

The European Union (EU) has positioned itself as a significant global player in the development of AI, currently ranking third worldwide. The region possesses a strong foundation for AI innovation, with nearly 40,000 highly skilled developers at the forefront of research and development, compared to some 30,000 in the United States and 20,000 in China.³ As a result, the EU is poised to capitalize on the significant potential for growth and development in the field of AI, with projected economic growth of approximately 20% by 2030 according to the McKinsey Global Institute (MGI).⁴ The EU has also recognized the potential risks and challenges associated with AI development and has taken proactive steps to promote responsible and ethical AI use. This approach has included the creation of the European AI Alliance and the adoption of the Ethics Guidelines for Trustworthy AI, reflecting the region's commitment to developing and deploying advanced AI technologies that benefit society while minimizing potential risks.

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1. China Academy of Information and Communications Technology (CAICT), "Artificial Intelligence Development White Paper Industry Application" (《人工智能发展白皮书产业应用篇[2018年]》), December 2018, p. 3.
 2. Dmitry Spodarets, "According to IDC, artificial intelligence spending will grow 20.7% worldwide", Data Phoenix, October 15, 2022. <https://dataphoenix.info/according-to-idc-artificial-intelligence-spending-will-grow-20-7-worldwide/>
 3. European Investment Bank, Verbeek, A., Lundqvist, M. (2021). Artificial intelligence, blockchain and the future of Europe: how disruptive technologies create opportunities for a green and digital economy: main report, Publications Office of the European Union., p. 7
 4. Jacques Bughin, Jeongmin Seong, James Manyika, Lari Hämäläinen, Eckart Windhagen, and Eric Hazan, "Tackling Europe's gap in digital and AI", McKinsey Global Institute, February 7, 2019, p. 31.

Nevertheless, the EU is taking proactive measures to address funding bottlenecks by increasing financial investments, such as the €2.5 billion investment in the Digital Europe Programme (2021-2027). Additionally, the EU is leading in AI governance by proposing the AI Act, which serves as the first comprehensive AI legislative framework. The public in the EU has expressed concerns about AI. Many risks are hard to predict and there is a need to protect citizens, workers and consumers from the potential consequences of AI. Thus, policymakers have been urged to act in order to minimize risks and boost trust. As a result, the EU is actively promoting “human-centric” and “ethical” AI that safeguards fundamental rights and produces ethical outcomes.

The AI Act Proposal is a legislative initiative introduced by the European Commission in April 2021.⁵ It sets out a regulatory framework to govern the development and deployment of AI in the EU. The aim of the proposal is to foster the creation of trustworthy AI systems that are safe and respectful of fundamental rights. The proposal covers several issues pertaining to AI, such as transparency, accountability, human oversight and data governance. Furthermore, it proposes a risk-based approach to AI regulation, with different levels of scrutiny depending on the potential risks posed by the respective AI system. On 20 April 2022, the European Parliament published proposed amendments to the Artificial Intelligence Act. In December that year, the Council adopted its common position (‘general approach’) towards the bill. The bill is expected to be passed before the European Parliamentary Elections in 2024.

The common position’s content pertains to the classification of high-risk AI systems and their associated requirements. A horizontal layer has been introduced to the high-risk classification to ensure that AI systems that pose lower risks and are unlikely to cause significant violations of fundamental rights are not unnecessarily categorized as high-risk. Additionally, the requirements for high-risk AI systems have been revised to make them more technically feasible and less burdensome for stakeholders, with regards

to areas such as data quality and the technical documentation required for SMEs to demonstrate compliance with the regulations. Given the complex value chains in which AI systems are developed and distributed, the text outlines changes in order to clarify the allocation of responsibilities and roles among actors in these chains, particularly providers and users of AI systems. Furthermore, the text clarifies the relationship between the responsibilities under the AI Act and those that exist under other relevant legislation, such as the EU General Data Protection Regulation or sector-specific legislation, including financial services legislation.

The EU’s AI Act is designed to establish a regulatory framework for AI that upholds its principles and protects the rights of its citizens and companies. The EU’s standards serve as a benchmark for many multinational companies seeking to avoid compliance issues in various jurisdictions, particularly within the digital technology sector. Thus, the EU aims to position itself as a global leader in regulating the digital economy and retaining its digital sovereignty.

Digital sovereignty refers to a country or region’s ability to maintain control and independence over its digital infrastructure, data and technologies. The EU’s digital sovereignty strategy involves creating and regulating its digital ecosystem while ensuring the protection of its citizens’ rights and interests. By retaining its digital sovereignty, the EU aims to maintain its competitive edge in the digital economy and encourage the development of innovative technologies that align with its values and principles. Among the advantages of such solid AI regulation are legal security, predictability for companies and improved trust towards AI technologies.

The European Commission has created a risk-based classification system for AI applications, which can be divided into four categories based on risk level (see Table 1): systems with little or no risk, limited risk, high risk, and those with unacceptable risk. This approach ensures that tailored regulatory requirements are in place, with high-risk systems subject

5. Tambiana Madiaga; Graphic: Samy Chahri, “Briefing: EU Legislation in Progress, Artificial Intelligence Act”, European Parliament, PE 698.792, June 2023, p. 1.

Table 1: The Classification of AI Risks in the “EU AI Act”, as drafted by the European Commission

Degree of Risk	Application Scenarios	Regulatory Measures
Systems with unacceptable risk	<ul style="list-style-type: none"> Threats to human safety, livelihoods and rights (e.g. AI systems manipulating human behaviour, permitting social scoring systems). 	<ul style="list-style-type: none"> Prohibit the use of the AI system Impose a fine up to 6% of global turnover in the previous fiscal year for violations.
High-risk systems	<ul style="list-style-type: none"> Infrastructure endangering human life and health, education/vocational training influencing opportunities Product safety components (e.g. AI in robotic surgery) Employment/employee management (e.g. resume screening software) Public/private services (e.g. credit scores depriving access to loans), law enforcement practices violating human rights, management of immigration, asylum and borders. 	<ul style="list-style-type: none"> Highly regulated before system is made public. Conduct a risk evaluation Provide the system with high-quality data and ensure the traceability of activity records Inform users adequately and clearly about human oversight measures Share error data Strict enforcement and sanctions
Systems with limited risk	<ul style="list-style-type: none"> Users of AI (e.g. chatbots) communicating intentionally and making informed judgments. 	<ul style="list-style-type: none"> Realize transparency and openness
Systems with little or no risk	<ul style="list-style-type: none"> Allow free use of AI in applications 	<ul style="list-style-type: none"> No intervention

to more stringent constraints and those associated with lower risks being more freely used, striking a balance between safeguarding fundamental rights and promoting AI innovation.

Organizations that provide high-risk AI systems must comply with stringent data management, documentation, transparency, risk management and human supervision requirements. The AI Act prohibits certain AI systems, mandates transparency, risk management and accountability for high-risk systems, and imposes administrative penalties such as fines on non-compliant companies, making it the most comprehensive and stringent regulatory framework for AI worldwide.

Furthermore, while many countries are still proposing AI safety guidelines, the EU has proposed two new directives – the Product Liability Directive and the AI Liability Directive – that establish legislative standards for AI product safety and liability and provide a mechanism for determining who should be held accountable in case an AI malfunctions or causes harm. Currently, the burden of evidence is

on customers rather than AI businesses. Besides, the criticism is that consumers have the obligation to pay and that it will be very difficult to obtain compensation in the case of damage under the current draft. However, the AI liability directive allows for lawsuits in the case of infringement of basic rights by AI and obligatory disclosure with respect to the AI decision-making processes in question.

In summary, the EU’s AI Act represents the world’s first comprehensive AI legislative framework. Its key feature is the risk-based classification of AI applications, with different regulatory requirements applied accordingly: prohibiting systems with unacceptable risks, highly regulating high-risk systems, requiring transparency and openness from systems with limited risk, and no intervention for systems with little or no risk. EU member states adopted a common position on the AI Act in December of 2022, while the European Parliament adapted its position during three readings in 2023. The so-called trilogue between Parliament, Council and Commission that will produce a final version is expected to begin in December 2023. This final version will probably be adopted during the first half of 2024.

1.3 AI Regulatory Policies in China

According to the Carnegie Endowment for International Peace, China's innovation performance has increased at a rate three times that of the European Union in recent years.⁶ The AI Index Report by Stanford University noted that in 2021, China continued to lead the world in the number of AI journal, conference and repository publications—63.2% higher than the United States with all three publication types combined.⁷ China accounted for roughly one fifth of global private investment in AI in 2021. However, Chen Dingding, President of Intellisys Institute, said that China lags behind both the United States and the European Union in terms of the AI industry's talent pool and workforce size. China's approach is primarily focused on fostering innovation, with a recent emphasis on "common prosperity." (共同富裕). "Common" refers to the distribution and sharing of wealth while "prosperity" refers to the creation and accumulation of wealth. China's AI development is focused on efficiency and business norms.

Currently, China has no systematic AI legislative document, but guidance and relevant regulations have been introduced on AI ethics norms, algorithmic governance and deepfakes. Existing AI regulation in China is divided into three areas: (1) attempting to establish ethical norms and legal constraints for AI; (2) controlling ethical and legal risks; (3) conducting ethical reviews.⁸

First, to establish ethical norms and legal constraints, the government of China issued documents such as The Ethical Norms for New Generation Artificial Intelligence to integrate ethics into the whole life cycle of AI. Second, to mitigate the ethical and legal risks posed by artificial intelligence, the government of China issued Internet Information Service Algorithmic Recommendation Management Provisions and The Regulations on the Administration

of Deep Synthesis of Internet Information Services to regulate the risks posed by algorithmic and deepfake technology. Third, to conduct ethical reviews, the government of China released The Guiding Opinions on Strengthening Ethical Governance of Science and Technology to provide guidelines for the institutional development of ethical governance of artificial intelligence.

A. Regulations on AI Ethical Norms

China's Ministry of Science and Technology issued "The Ethical Norms for New Generation Artificial Intelligence" (新一代人工智能伦理规范) on 25 September 2021 and "The Guiding Opinions on Strengthening Ethical Governance of Science and Technology" (关于加强科技伦理治理的意见) in mid-March 2022.

The former aims to integrate ethics into the whole life cycle of AI and specifies six general ethical norms, without defining them more precisely:

- promoting human welfare;
- promoting fairness and justice;
- protecting privacy and security;
- ensuring controllability and trustworthiness;
- strengthening responsibility;
- enhancing ethical literacy.

The latter offers the blueprint for the institutional development of ethical governance of science and technology, such as normative standards, regulatory systems and legislation. It also recommends systematic mechanisms for the ethical assessment and supervision of technology, with an emphasis on early warning and prevention of ethical dangers in science and technology.

6. Erik Brattberg, Raluca Csernaton, and Venesa Rugova, "Europe and AI: Leading, Lagging Behind, or Carving Its Own Way?", CARNEGIE ENDOWMENT FOR INTERNATIONAL PEACE, July 2020, p.8.

7. Daniel Zhang, Nestor Maslej, Erik Brynjolfsson, John Etchemendy, Terah Lyons, James Manyika, Helen Ngo, Juan Carlos Niebles, Michael Sellitto, Ellie Sakhaee, Yoav Shoham, Jack Clark, and Raymond Perrault, "The AI Index 2022 Annual Report," AI Index Steering Committee, Stanford Institute for Human-Centered AI, Stanford University, March 2022, p. 10.

8. Ministry of Foreign Affairs of the People's Republic of China, "Position Paper of the People's Republic of China on Strengthening Ethical Governance of Artificial Intelligence (AI)", November 17, 2022.

B. Regulations on Algorithm Governance

The Cyberspace Administration of China (CAC) released “Guiding Opinions on Strengthening Overall Governance of Internet Information Service Algorithms” (关于加强互联网信息服务算法综合治理的指导意见) in September 2021 and issued “Internet Information Service Algorithmic Recommendation Management Provisions” (互联网信息服务算法推荐管理规定) in March 2022.

It aims to introduce algorithmic applications to a reasonable and regulated, fair and just as well as open and transparent track. CAC emphasizes that algorithms should follow technical ethics and recommends establishing a negative list and regulatory system for the operation of algorithms, prohibiting the use of algorithms to influence online public opinion, implementing monopoly and unfair competition rules, and conducting classification and grading management, algorithm filing and algorithm safety assessments according to the attributes that could affect public opinion, user scale and data sensitivity of algorithmic recommendation services.

C. Regulations on Deepfakes

The “Regulations on the Administration of Deep Synthesis of Internet Information Services” (互联网信息服务深度合成管理规定) issued by the Cyberspace Administration of China (CAC) came into force on 10 January 2023. It clearly requires that information content generated or edited using deep synthesis services be provided with a logo, and that for intelligent dialogue, synthesized human voice, face generation and other functions that generate or significantly alter information content, a prominent logo shall be displayed to avoid public confusion. The regulation of AI technology has been further strengthened and refined.⁹

Briefly, China has defined regulatory principles but not put any practical guidance in place, which means that industry or departments at all levels have specific powers of interpretation over the principles, resulting in a complex and confusing review process. Furthermore, the government and companies are

not yet in sync regarding AI principles, guidance, and judicial practice.

1.4 Differences in Regulations between the EU and China

Regulating artificial intelligence is a critical issue that has garnered significant attention from governments, organizations and individuals around the world. China and the European Union have taken steps to regulate AI and address the challenges posed by this rapidly evolving technology. However, the two regions have different perspectives on governance regarding the regulatory implementation process and policies.

China’s regulatory efforts focus primarily on pushing innovation and more recently “common prosperity” through a rather laissez-faire model. While also seeking innovation, the EU’s approach places more emphasis on preventing potential harm and promoting ethical outcomes by protecting individuals’ and groups’ fundamental rights.

Furthermore, the EU also emphasizes individual rights and responsibilities, mandating that AI systems be transparent and accountable, and that individuals should have protection from discriminatory AI decision-making as well as the right to understand how these systems function and use their data.

The EU approach towards AI takes into account ethical issues such as employee interests and social security systems, while China prioritizes rapid development.

Despite these differences, both regions can find common ground on how to implement AI for maximum societal benefit and security. The EU can learn from China’s nurturing of champion technology companies, while China can learn from the EU in adopting a holistic approach to regulating AI systematically.

9. Cyberspace Administration of China, Ministry of Industry and Information Technology, and Ministry of Public Security, “The Provisions on the Administration of Deep Synthesis of Internet-based Information Services”, November 25, 2022.

II. The Application of AI

2.1 Application Scenarios

The application scenarios for artificial intelligence technology are extensive, and it has significantly altered the operations and business models of numerous fields. However, the application of AI is not confined to these areas. Almost all industries are susceptible to disruptive development and modification. For example, from an operational standpoint, the gaming, advertising, e-commerce and navigation industries have seen disruptive changes as a result of the deployment of AI technology, and can no longer function without it.

In the past decade, the use of machine learning and deep learning algorithms has altered the development of numerous industries. The following criteria can be used to determine which sectors AI will greatly impact:

A. Industrial Automation Feasibility

To a certain extent, AI was designed for automation. It is devoted to completing risky, tedious and repetitive tasks for humans. Consequently, the higher the degree and feasibility of automation in an industry, the greater the influence and disruption of AI in that sector. Conversely, industries that find it difficult to automate their tasks will be less affected.

B. Cost of Manpower and Implications for AI

Maximizing profits is the primary objective of many businesses, and the implementation of business strategies must consider production costs and long-term returns in full. Therefore, if the average cost of implementing AI applications is low and the efficiency is significantly higher than that of employing humans, AI will have a stronger impact on the sector.

C. Degree of Labour Efficiency Enhancement

Improving labour productivity is a fundamental criterion for the application of AI. If AI can enhance productivity and prevent errors, then it will have an impact on the respective industry.

D. Possibility of integrating jobs into emerging industrial clusters

Artificial intelligence is a technological cluster composed of multiple intersecting technologies. Any breakthrough or change in key technologies will drive the growth of the entire industrial cluster. Its integration capabilities are far greater than those of prior technological revolutions. In the next ten years, at least 26 industries will be further integrated into eight industrial clusters, namely (1) Cloud Computing; (2) Engineering; (3) People and Culture; (4) Data and AI; (5) Product Development; (6) Sales; (7) Content; and (8) Marketing, according to an analysis by the World Economic Forum.¹⁰ Therefore, following the adoption of AI technology into industry, there will be a high degree of uniformity and the possibility of technological integration between diverse sectors. Thus, AI can alter entire business models.

Artificial intelligence will have a significant impact on human labour, while the precise substitution effect remains to be seen, it may be more pronounced in the transportation and storage, manufacturing and retail sectors as well as administrative services that are characterized by more repetitive work. Industrial manufacturing, the service sector and the gig economy are the industries where AI has the largest impact and is most frequently employed, and it could be argued that they cannot exist without it.

AI will not replace humans entirely, as it is only feasible to automate certain jobs and tasks. While AI adoption will have a significant impact on the labour market, it will also create new jobs and opportunities for human workers. The adoption of AI will require human oversight, maintenance and development, which will create demand for workers with skills in AI development, data analysis and machine learning. Therefore, it is also important to manage the transition in a way that maximizes the value of labour, protects the welfare of employees, and ensures the availability of talent through better training and education. The impact of AI on the labour market will require a proactive and balanced approach to ensure that society benefits from this

10. World Economic Forum, "The Future of Jobs Report 2020", October 2020, p. 32.

transformative technology.

The upgrading of artificial intelligence technology presents significant opportunities for governments, corporations and society. In order to fully realize these benefits, each of these stakeholders must take an active role in promoting responsible development and use of AI. Governments can facilitate this process by investing in research, development, and creating policies that encourage the responsible use of AI, ensuring equitable access to education and training. Corporations can contribute to the responsible use of AI by investing in R&D, developing best practices and standards, as well as supporting career development and retraining for workers. Society can promote a culture of responsible AI use by encouraging ethical and transparent practices, supporting education, and training, and promoting access to research and development initiatives. By working together, governments, corporations and individuals can maximize the benefits of AI while minimizing its potential risks.

2.2 Case Studies

2.2.1 Industrial Manufacturing

Intelligent robots have existed for over a century. Historical evidence tells us that there is a fundamental, linear connection between the technological and industrial revolutions. Mechanical and technological innovation were the immediate impetus behind the onset of the industrial revolution, as well as the primary factor that altered human productivity and production methods.

The concept of AI was introduced in the 1950s, but its spectacular growth in industrial manufacturing has only occurred in recent years due to the maturation of the Internet of Things (IoT), big data and cloud computing. The IoT facilitates the collection of massive amounts of data in real time. Big data provides data resources as well as algorithm support for deep learning. Cloud computing provides AI with flexible computing resources. The combination of technologies drives the continuing development of AI and has led to significant advancements.

The fundamental capabilities of AI in the manufacturing sector may be broken down into the following three levels:

A. Computational Intelligence

Computational intelligence signifies that computers have super-capacity storage and ultra-fast computing power, as well as the ability to conduct deep learning based on big data and algorithms.

B. Perceptual Intelligence

Perceptual intelligence denotes that a machine contains visual, aural, tactile, and other perception abilities via sensors, which may order unstructured data, sense the surrounding environment, and analyze it so as to advise the effective operation of the user.

C. Cognitive Intelligence

Cognitive intelligence is more complicated than the other levels. It implies that a machine has the same understanding, inductive reasoning and knowledge application capabilities as humans. Cognitive intelligence is still in the R&D phase at the present time, but scholars are confident that it will soon be able to design production line models and systems on its own thorough deep learning.

In the manufacturing industry, AI mostly plays a supporting function, providing robots with sophisticated operational capabilities. Six typical scenarios of AI deployment in industrial manufacturing can be identified:

Table 2: Application Scenarios of Artificial Intelligence in the Industrial Manufacturing Sector

Use Cases	Details	Main Sectors	Main AI Techniques
Smart Sorting	Robot sorting can achieve a higher success rate and greater precision than skilled workers. In addition, robots may operate in a variety of situations, particularly in a vacuum and sterile conditions.	1. Semiconductor Industry	Deep learning, self-organizing neural network
Equipment health management	Predictive Maintenance: AI can not only forecast equipment failures before accidents and reduce unscheduled downtime based on real-time monitoring of operation data, but also perform problem diagnostics, locate the cause, and suggest related solutions when equipment fails unexpectedly.	1. Chemical Industry 2. Heavy Equipment; 3. Hardware Processing 4. Wind Power	Bayesian networks and machine learning, especially deep learning
Digital Twins	Digital twins are the virtual counterparts of physical objects. A “real” model is created that can be updated in real-time and has a strong sense of presence. This can be used to support decision-making in various physical product activities. It is possible to incorporate complexity and nonlinear models into a neural network and to set a limiting goal for reduced-order modeling.	1. Automobile Manufacturing 2. Aircraft Production 3. Railcar Design	Machine learning (especially supervised and deep learning), Bayesian networks
Generative Design	Generative design is a human-computer interface and self-innovation procedure. Engineers only need to set the expected parameters and performance constraints under the guidance of the system. Such systems can produce thousands of plausible plans, conduct a thorough comparison on their own, select the ideal design plan, and then forward it to the designer for a final decision.	1. Automotive 2. Architecture and Construction 3. Industrial machinery	Generative adversarial networks (GANs); autoregressive language models
Demand Forecasting and Supply Chain Optimization	AI can generate an accurate demand forecasting model, create sales volume and maintenance material predictions, and make demand-driven judgments for businesses. Simultaneously, AI can produce design inventory replenishment strategies as well as supplier appraisal, component selection, etc., based on demand projections through the study of external data.	1. Logistics 2. All types of manufacturing	Algorithms; predictive big data analytics

Table 2 shows five distinct use cases of AI technologies across various industry sectors. These use cases include Smart Sorting, Equipment Health Management, Digital Twins, Generative Design, and Demand Forecasting and Supply Chain Optimization. In conclusion, AI mainly serves a supporting role in industrial manufacturing sectors, equipping robots with advanced operation capabilities in various scenarios.

The integration of AI into various aspects of the manufacturing process enhances efficiency, reduces operational costs, and improves overall productivity. By automating complex tasks, AI enables manufacturers to focus on strategic decision-making and innovation. Additionally, AI-driven solutions contribute to the optimization of supply chain management, demand forecasting, and inventory

control, leading to more streamlined and cost-effective operations.

As AI technologies evolve and develop, their applications in the industrial manufacturing sector are anticipated to expand further. Advancements in computational, perceptual, and cognitive intelligence will pave the way for more sophisticated automation, data analysis, and decision-making capabilities. This will result in improved production processes, optimized resource allocation, and increased competitiveness in the global market.

In conclusion, the use of AI in the industrial manufacturing sector is poised for continued growth as technology progresses and its benefits become more evident. Companies that invest in AI-driven solutions and adopt them effectively will be well-po-

sitioned to capitalize on the transformative potential of AI, ensuring a competitive edge and driving the industry's future success.

2.2.2 Banking, Financial Services and Insurance (BFSI)

AI has been playing a transformative role in the Banking, Financial Services and Insurance (BFSI) industry in Europe and China, contributing to improved efficiency and enhanced customer experiences, but also giving rise to new concerns. In this context, it is crucial to analyze the situation, characteristics, importance and trends of AI in the BFSI sector.

The BFSI industry is experiencing a paradigm shift driven by rapidly evolving customer expectations, increased regulatory scrutiny and heightened competition from fintech. These factors have propelled the industry to explore AI and related technologies to innovate, optimize and improve their services.

AI in the BFSI sector is characterized by its extensive application across various domains, such as fraud detection and prevention, risk management, personalized services, automation, and customer support. AI algorithms and machine learning models can analyze large datasets to identify patterns and anomalies, helping to detect and prevent fraudulent activities. AI-driven risk assessment models enable institutions to make better-informed lending and investment decisions, minimizing potential losses. AI also empowers financial institutions to deliver customized financial products, investment advice and other services to clients based on their unique needs and preferences. Additionally, AI allows BFSI companies to automate repetitive tasks, such as customer onboarding, report generation and compliance checks, resulting in reduced operational costs and increased efficiency. AI-powered chatbots and virtual assistants provide instant support and guidance to customers, enhancing their experience and fostering customer loyalty.

While AI has brought significant advancements to the BFSI industry, it is important to recognize its limitations and risks. Key challenges include the quality and availability of data, lack of transparency in AI models, high implementation costs, the risk

of perpetuating biases and the evolving regulatory landscape surrounding AI and data protection. Acknowledging and addressing these limitations by ensuring transparency and trust in this sector will allow financial institutions to maximize the benefits of AI adoption.

In conclusion, AI has become an integral component of the BFSI industry, shaping the future of banking, financial services and insurance. As AI technologies continue to evolve and mature, the BFSI sector is expected to witness even more profound transformation, resulting in better services, reduced risks and increased customer satisfaction.

Although AI has significantly improved the BFSI industry, it has also introduced potential risks and concerns for consumers. One of these concerns is the use of AI-powered "lie detectors" used to check representations in damage reports, which raises concerns regarding the accuracy, reliability, privacy, and consent of these systems. Furthermore, the lack of transparency and explainability in AI models could lead to unintended consequences and perpetuate biases, resulting in negative impacts on consumers. Additionally, the collection and processing of large amounts of personal data by financial institutions using AI could pose risks to consumer privacy and data protection. As such, it is essential for financial institutions to address these concerns and develop effective strategies to mitigate potential risks while maximizing the benefits of AI adoption in the BFSI sector.

2.2.3 Gig Economy

The use of AI technology in the gig economy has brought significant benefits to job matching, workforce management and skill development for gig workers, producing a number of different types of employment (see Figure 3). However, concerns over data privacy, algorithmic bias and potential job displacement have also emerged as a result of increased reliance on AI-driven platforms. Addressing these issues and adopting responsible AI practices is critical to ensuring a fair and inclusive future of work in the gig economy. Moreover, recent developments in the gig economy have highlighted several disadvantages, including stressful working conditions, low pay, precarious employment, lack of bargaining power and insufficient social protections. These challenges further emphasize the need for responsible and ethical AI practices to ensure the well-being and fair treatment of gig workers.

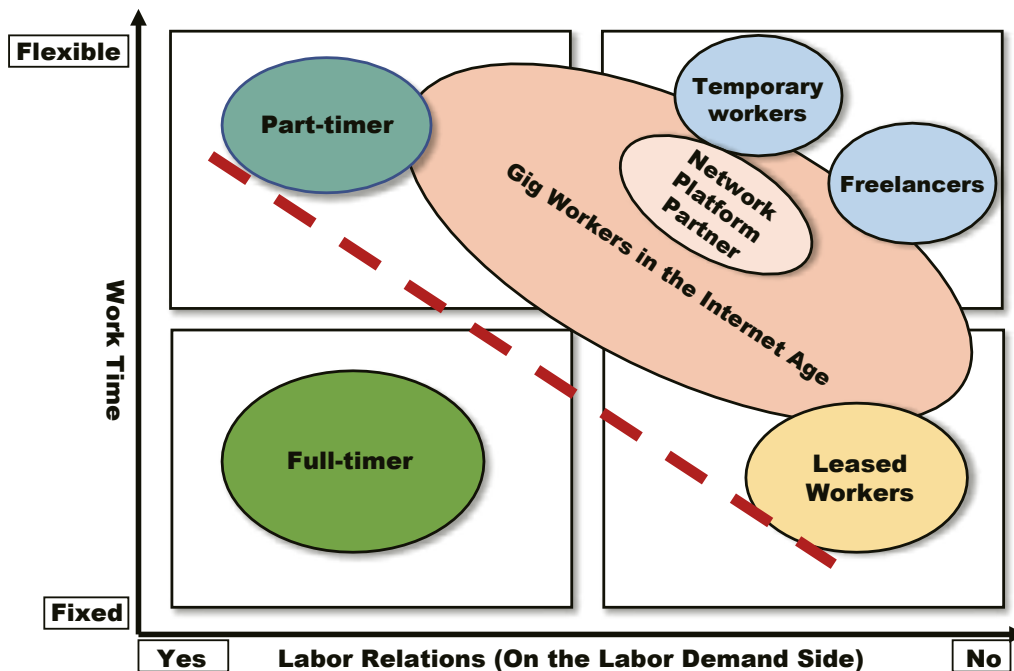
The rise of the Internet platform for the gig economy has driven the prevalence of non-labour relations, and the “enterprise-employee” contract model has gradually given way to the “platform-individual” model.¹¹

Currently, the gig economy is mostly comprised of transportation, food delivery and webcasting services, and the deployment of AI systems has raised the most controversy in this industry. Many critics argue that in the gig economy, workers are not truly independent. They are often trapped within algorithms that limit their ability to choose their working hours and locations, and they are constantly under pressure to ensure they do not incur penalties from platform algorithms.

As stated in the introduction, present-day AI is a deterministic technology that will only make plans via algorithmic logic and frameworks. Using food delivery services as an example, AI will not consider the rider’s inability to complete a delivery due to unforeseen circumstances, and will instead punish the rider according to the system. Some riders opt to violate traffic rules in order to avoid credit point deductions, resulting in frequent traffic accidents.

Particularly concerning are also the working conditions and well-being of “ghost workers” in addition to those “trapped in algorithms” of the gig economy. “Ghost workers” perform tasks related to training and maintaining AI systems and are primarily

Figure 3: Classification of Employment Types: There is not just one kind of “gig worker”



11. Jing Wu, Jianan Zhou, “Basic psychological need satisfaction and well-being for gig workers: a fuzzy set QCA approach in DiDi of China”, *Current Psychology*, November 10, 2022, p. 1.

responsible for activities that the system cannot perform by itself, such as data cleansing, coding and content classification.¹² They are referred to as ghost workers since they are largely invisible to users and their existence is taken for granted by companies. As a result, their status and privileges are not ensured and honoured in the same manner as those of normal employees, despite the fact that they perform more inconceivable tasks than ordinary employees.

2.3 Risks and Limitations of Implementing AI

Although artificial intelligence can handle human tasks seemingly in a perceived impartial manner, it may still produce ethical issues. AI-related ethical challenges can be grouped into five categories, which are detailed in the following:

A. Bias and Discrimination

The algorithm is based on the programme-modeling and the metadata of the programmer. Therefore, it will be biased through the conscious or unconscious impact of the human programmer. Furthermore, the data itself is a reflection of human biases. With the advancement of deep learning, AI systems can perpetuate and amplify existing biases, leading to unfair outcomes in areas such as employment, criminal justice and credit scoring. That is to say, users producing the data are not necessarily representative for the whole of society – individuals who do not possess devices or social platform accounts may thus experience discrimination from AI services as their data was not fed into the AI algorithm.

B. Accountability

AI is capable of mimicking some human decision-making characteristics. Although some of the final decision making remains with humans, it cannot be denied that in some scenarios, autonomous AI-decisions can pose a particular risk. If the AI system makes any error or displays any malfunction resulting in casualties, it is difficult to discern whether humans or the AI are responsible. Similar ethical problems about responsibility may develop in smart healthcare,

education, justice and engineering, among other professions.

C. Changes in the Labour Market

Each technological revolution has the potential to impact employment, and AI is no exception. It is evident that AI technology has led and will continue to lead to the automation of many repetitive, physical tasks but also increasingly creative tasks in various industries, including healthcare, supermarkets, banks, schools, accounting, consulting, writing and legal consultation. Moreover, there is a growing concern that the continued development of AI, outperforming human labour in many aspects such as speed and a reduced error rate, could result in significant unemployment and social instability.

D. Privacy Breaches

The right to privacy allows citizens to enjoy the tranquility of private life, the protection of private information and to not be unlawfully intruded upon, identified, monitored, used, or disclosed by others. Large amounts of data are required to train artificial intelligence systems, which poses risks such as data theft, information leakage and privacy violations.

E. Decision Dilemma

AI can often make reasonable decisions in simple task environments, but when faced with higher-dimensional dilemmas, it is primarily adequate for preliminary review, and should leave the final decision to human operators. If the outcomes of the artificial intelligence system's and the operator's decision-making processes diverge, any choice will necessitate the denial of the other party, which will not only raise the question of responsibility allocation, but also create technical inconsistencies.

As an increasing number of firms and academics conduct research on AI, an unprecedented boom of open-source software and platforms is appearing. However, the growth of AI implementation is still very modest and application scenarios are not remarkable. This can be explained by the following factors:

12. Forbrukerrådet, "Ghost in the Machine: Addressing the Consumer Harms of Generative AI", June 2023, p. 64.

F. Costs

Complexity and customization requirements for artificial intelligence solutions are relatively significant due to the variances between different industry sectors. Intelligent transformation is unaffordable for many small and midsize companies, and its cost-efficiency is often significantly inferior to that of human resources.

G. Inadequate Environment

Especially in the manufacturing sector, the identification of working conditions, operation control, resource planning and scheduling mostly rely on the knowledge of workers with experience and execution by various departments. Changes in this operation may result in a production halt, and the inability to optimize intelligent manufacturing on a global scale lengthens the upgrading procedure, increasing communication costs and the ramp-up time across departments.

H. Inadequate Education & Training

The majority of industrial manufacturing is labour-intensive, with the biggest proportion of blue-collar workers and a dearth of high-skilled, interdisciplinary professionals who comprehend data and informatization. Due to the insufficient education of new talent and the re-training of the existing work force, there is a large gap between talent output and the talent required by the enterprise.

I. Hesitation Towards Change

Industries may hesitate to adopt AI for various reasons, including concerns related to the high costs of implementation and uncertainty about the potential benefits, as well as institutional inertia and the lack of institutional competences for AI implementation. The development, deployment and maintenance of AI solutions can be expensive, requiring investments in infrastructure, tools and skilled personnel. Additionally, organizations may be unsure about the tangible benefits of AI, questioning whether the Return on Investment would justify the initial costs. This uncertainty may stem from a lack of understanding of AI capabilities, a lack of success stories, or the perception that AI is a complex and

challenging technology to integrate into existing workflows. It is worth noting that this hesitation towards embracing AI is a common phenomenon across different countries and industries, as organizations grapple with striking a balance between innovation and risk. Encouraging collaboration, sharing success stories, and promoting education about AI can help alleviate these concerns and pave the way for more widespread adoption of this transformative technology.

J. Fear of Competition

In many industries, enterprises are hesitant to use artificial intelligence or digitization because they believe that the applications they can afford can't compete with those of bigger firms. If the production structure is changed hastily, it may raise concerns at large companies, who may then adopt more drastic steps to compete with them.

III. Policy Recommendations

3.1 Why Should AI Be Regulated?

Should artificial intelligence be regulated? Can it be regulated? If so, what should these rules entail? These are difficult questions to answer for any technology that is still in the development phase. Regulations, such as those on the food, pharmaceutical, automobile and airline industries, are often applied after major negative outcomes have become apparent. However, AI has been advancing so rapidly, and the potential influence of AI technology is so enormous, that in addition to the already apparent problems outlined above, it seems necessary to prepare in advance and regulate proactively rather than wait and learn from potentially disastrous problems. Thus, AI technology must be regulated sooner than later:

A. To eliminate possible AI-related dangers early.

AI legislation and governance have historically trailed behind technical advancements. Developing certain broad rules at the early stage gives AI developers guidelines and supports societal technology risk assessment. The awareness of the impact of AI on society is currently limited. However, AI is already massively used for misinformation that is having a direct impact on democratic processes. Political representatives need to focus on identifying early risk indicators and guidelines, anticipating regulations or legal frameworks, and developing an early warning system to deal with potential risks.

B. To prevent the possible abuse of technology in violation of basic human rights.

A regulatory framework helps ensure that the benefits of artificial intelligence will outweigh its potential risks. AI legislation is concerned with addressing ethical difficulties, attempting to reduce risks, and preserving openness in both industries and society. AI policy should be centered on quality and trust, it should be in accordance with human rights and democratic principles, in order to solve the social, ethical and regulatory concerns with regards to AI. For example, AI's use in healthcare can have serious implications such as in the context of long-term care, where the patient's life can be in the hands of an AI system. Therefore, it is vital to include

human and ethical responsibility deliberations into AI research and development.

C. To boost the public's trust of technology

The establishment of efficient recourse mechanisms in the AI sector has made consumers more willing to apply and embrace AI technologies, thereby creating a virtuous circle and favorable environment for the adaptation of AI.

The regulation of AI is a complex issue that warrants careful consideration. It is important to regulate AI to ensure the well-being of society and limit risks, while also leaving room for innovation. Good regulation can even act as a driver for AI innovation. Additionally, it is crucial to provide equitable access to AI technology to all players to ensure a level playing field. Without regulation, competitors in a variety of sectors who do not have access to AI as tools for development and manufacturing, would be hindered in the marketplace. Therefore, it is important to ensure a level-playing field by providing common access to AI.

Furthermore, nuanced aspects of AI legislation should not be neglected. Policymakers are struggling to establish a useful definition of AI, something that is fundamental to being able to regulate it effectively. As the EU AI Act Draft outlines, there are varied degrees of risks and considerations in different sectors, levels and actors in the AI industry and this variety should not be ignored. Regulating AI is a highly complex task, with numerous questions pertaining to power structures and dynamics involving many subjects, such as governments, businesses and people, and their conflicts of interest. This heightens the difficulties of creating a well-rounded and well-established regulatory system on AI.

3.2 Is Global Consensus Possible?

Despite the fact that AI governance at the national level varies in terms of algorithmic transparency, data protection, etc., there is now a global consensus on the ethical principles regulating AI technology. In November 2021, UNESCO member nations ratified the very first global AI ethical agreement. The key ethical principles of various countries show consistency: (1) the development and use of AI should

be human-centered, with the fundamental goal of improving human welfare; and (2) AI technology must adhere to the principles of fairness, transparency and interpretability.

In forming a global consensus on AI governance, the legislative trends and cooperative attitudes of significant nations are very important. There is a trend suggesting that transatlantic consensus on AI regulation is growing. The US-EU Trade and Technology Committee issued a joint statement that includes a road map for AI development, approaches for AI risk management and AI that can be trusted on both sides of the Atlantic, and methods to promote cooperation with AI-related international standards bodies. The US National Institute of Standards and Technology has published an AI risk management methodology that demonstrates convergence with ISO on risk assessment of AI system life cycle phases.

Complying with the interactivity of operating systems, the necessity for interoperability standards for trustworthy AI principles, AI systems categorization, the AI system lifetime, AI incidents, and AI assurance procedures are also crucial to achieving global consensus on AI regulation. The OECD is advocating for a standardized framework to categorize and regulate various AI applications.¹³ To prevent the risks associated with incompatible, fragmented domestic regulatory approaches, national efforts to develop AI regulations must be coordinated and supported by international regulatory frameworks. In the meanwhile, it must be realized that global consensus on AI regulation may need further time and political momentum.

It is important to note that global geopolitical tensions also influence the global consensus on AI. Regulation of AI is a very complicated problem involving power structure-related difficulties between several parties, including governments, businesses and individuals. AI regulation entails concerns pertaining to ethics and fundamental legal principles. So far, there is no consensus on how exactly the general interest with regard to AI could be defined. With the necessary political will, however, it is not impossible to attain this objective. We believe there is now a global consensus on at least two aspects of AI regulation: (1) the need to govern AI; (2) the need to educate the public about new technologies and risk prevention.

In short, despite widely recognized principles and ethical norms regarding AI regulation around the globe, the prospect of a global consensus on AI regulation is gloomy at the present as the current regional or global coordination on AI regulation shows signs of different blocs, which might result in a fragmented regulatory landscape globally. In that regard, political wisdom addressing geopolitical distrust will be a necessary step to approaching a global consensus on AI regulation.

3.3 Recommendations for Academia and Policymakers

Academics and policymakers should collaborate to create and implement ethical and regulatory norms in response to AI's immense opportunities and limitations. For policymakers, regulating AI entails not just reducing possible risks, but also providing an ideal environment for AI development. Academics and researchers in academia might play a distinctive and proactive role in advancing ethical principles in AI development by interacting with the development process. In this section of the paper, there are four sectors that require regulation.

A. Promoting and setting ethical norms for AI

Academic institutions, but also companies have a vital role to play in promoting and setting ethical norms for AI. Establishing ethical guidelines for AI development and encouraging scholars and enterprises to participate in the development of ethical evaluations for science and technology are crucial steps. These actors need to evaluate the ethical implications of AI, actively study its long-term repercussions, and pay attention to the risks of developing technologies. Additionally, they should promote or participate in ethical review panels to safeguard the ethical review of AI. Failing to address ethical considerations could result in ethical oversight, the erosion of public trust and barriers to technical innovation. As the impacts of AI are felt in all aspects of society, academic institutions must prioritize promoting ethical norms for AI development to ensure its ethical implications are carefully considered.

B. Strengthening public trust via risk-based methods

Policymakers must prioritize building public trust in AI by understanding and addressing associated risks.

Strengthening public trust and confidence through risk-based methods involves creating a comprehensive framework to tackle AI risks, alleviating public concerns regarding the societal effects of AI, and employing risk-based approaches to prevent over-regulation and regulatory gaps. For instance, Europe's AI Act is a comprehensive framework that policymakers can emulate to tackle AI risks and alleviate public concerns. Employing risk-based approaches enables the establishment of a risk pyramid that evaluates the risk level of various forms of AI technology and use cases. This approach provides clear guidelines that highlight both the promise and limitations of AI, ultimately fostering a more accepting environment for AI innovation. Without sufficient confidence, AI will not gain public acceptance, and policymakers must take proactive steps to prioritize building public trust in AI.

C. Assuring technical innovation

To ensure technical innovation, policymakers have to solve the challenge of protecting society from the perils of technology on the one hand, and allowing sufficient opportunity for innovation on the other. Engaging with innovators and considering their input when crafting regulations is crucial to achieving this balance. Governments should foster transparency from AI developers and researchers to understand the technology's current status and potential impact of regulations on its development. Keeping AI as open-source as far as possible can prevent sudden disruptive tools from emerging behind closed doors – a scenario which could compel lawmakers to take regulatory decisions in order to re-establish the level playing field, which in the worst case may hinder innovation.

D. Boosting public knowledge and competencies

Policymakers should empower the public to interact with new technologies. This involves providing accessible resources and tools that enable them to develop technical knowledge and abilities in the field of AI. This fosters a better understanding of AI technology and increases public acceptance of future AI developments, while also equipping the public to hold corporations and governments accountable. Training programmes tailored to individuals and organizations can help them comprehend the risks and benefits of AI and how it works. Enhancing

regulatory transparency can further boost public confidence in AI technologies. Policymakers must strike a balance between regulation and empowering the public by promoting transparency and offering accessible resources that enable the public to develop technical knowledge and abilities in the field of AI.

E. Fairly sharing the fruits AI

Much economic wealth will be produced thanks to new technologies, and policymakers need to make sure that the benefits of AI are shared. While AI certainly will bring a lot of opportunities to the business sector, it might cause job losses and other social problems. On that score, policymakers, scholars and practitioners should focus more on creating new jobs and benefits in the emerging areas rather than dwelling on the job losses caused by AI. For example, data scrubbing can provide new job opportunities for people.

3.4 Recommendations for Industry and Trade Unions

AI has an undeniable impact on labour and employment, from recruiting to job assessment. On the one hand, against the background of expanding AI deployment in a variety of industries, there is a growing anxiety about potential labour displacement. On the other hand, AI provides opportunities for enhancing working circumstances, such as reducing monotonous tasks. This section contains three recommendations to advise industry and trade unions on managing in the era of artificial intelligence.

A. Ensuring the protection of workers' data and privacy

Industry and trade unions should pay attention to worker data protection. Workers are required to provide a substantial quantity of personal data throughout the employment process. The handling and storage of such information merits attention. We noted that the exploitation of employee and customer data by AI is reason for concern, especially in industries such as logistics and healthcare. Data protection is not an objective in and of itself, but rather to protect the privacy of employees. While there is broad pressure on businesses to swiftly embrace AI models, careful thought must be given to how these systems are developed, who designs them, and how data is acquired, kept and used.

B. Protecting workers from bias and discrimination

As AI models are trained on huge amounts of data, the representativeness and quality of the training data may impact their decision-making processes. When such models are employed in the context of job and performance assessment, possible bias may occur, eroding the legal rights of employees. We must evaluate how we can protect the actual rights of employees and maintain a balance of power between unions and employers. While AI helps to standardize the hiring process, eliminate human bias (ideally through the use of quality data that is free of human bias), and boost productivity, algorithmic conclusions are notoriously difficult to comprehend and explain. Industry and labour unions have a crucial role in beginning discourse on the preservation of employees' legal rights in the era of AI. The AI models used in the recruiting and performance assessment processes should be properly reviewed. Moreover, crucial algorithmic judgments made in labour practices should be explicable and traceable. To guarantee that employees' rights are adequately protected, it is crucial to empower workers to protect and defend their own rights through transparency and participation.

C. Adopting co-creation and co-decision strategies

Co-creation and co-decision-making are effective approaches that may aid industry and trade unions in building sustainable AI solutions. Unions and employers should collaborate to develop joint AI-related initiatives. Democratizing AI via co-decision-making is a significant component. Nonetheless, since the complexity of AI development often exceeds the experience of trade unions, independent expertise and joint decision-making will become indispensable. The active participation of external experts and employees will result in more transparent introduction of new technologies, adoption and implementation processes. For high risk AI systems, transparency and risk mitigation obligations should be mandatory and verifiable by accredited independent bodies.

D. Education

There are two main consensuses regarding AI development: regulation and education. The emerging technologies often involve a small group of people who have the capability to understand and apply the technologies while the public has no clue about such technologies, which creates an asymmetrical gap in information and risk assessment. Therefore, it is necessary to educate and train the public to understand the way AI works and impacts our lives, as well as what risks and opportunities AI will bring.

E. Fairly sharing the fruits that AI will produce

AI poses challenges for workers and labour law when it comes to the platform or gig economy. It can sabotage and undermine the labour rights granted by traditional labour law. It is essential to ensure labour rights and basic benefits of workers right from the beginning of AI design and application. In addition, the benefits delivered by AI should not just be defined solely by economic benefits, but also by health and psychological benefits. On that score, it is highly advised that health and psychological concerns shall be taken into consideration when estimating the benefits of AI.

IV. Conclusion

In this analysis we have examined the existing artificial intelligence regulatory policies and application scenarios in the European Union and China. It is evident from the above that AI, as a disruptive technology, will have a profound effect on the employment structures, laws and ethics in our societies, as well as on international relations.

AI, with the productivity gains it will bring, has the potential to change our societies for the better. It can increase income levels, improve convenience in all aspects of life and provide for better, healthier and safer work. At the same time, AI is also associated with a number of risks and threats, some foreseeable, some unexpected: job losses, discrimination and a loss of privacy, to name a few. Thus, AI could exacerbate existing social and economic inequalities, as those with greater resources and access to technology would be better positioned to reap its benefits.

We argue that as AI technologies continue to advance and become more integrated into our daily lives, there is a growing need to regulate them in order to ensure that their benefits are fairly shared among all members of society.

Therefore, it is imperative that governments and other stakeholders work together to establish ethical guidelines and regulations that promote fairness, transparency and accountability in the development and deployment of AI technologies. This could be done through implementing early warning and complaint mechanisms, open-source approaches, transparency mandates, ethical guidelines including non-discrimination stipulations, worker and user data privacy rules as well as co-creation and co-decision strategies, etc.

By doing so, we can ensure that the benefits of AI are shared equitably and that its potential to transform society is realized in a responsible and just manner.

With our proposals and recommendations, we hope to contribute to a necessary debate in our societies as we need to negotiate the terms under which this transformative technology will change our lives.

We sincerely hope these thoughts will find their way into this debate and we are looking forward to our readers' feedback.

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