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Comparative Analysis of AI Development Strategies: A Study of China's Ambitions and the EU's Regulatory Framework

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KEY TAKEAWAYS

- China's approach to AI regulation is characterized by a vertical, technology-specific framework heavily influenced by national security concerns and economic development goals.
- The Chinese government has implemented a series of strategic plans and regulations, including the New Generation Artificial Intelligence Development Plan (AIDP) and specific measures targeting algorithms, deep synthesis, and generative AI.
- In contrast, the EU's horizontal, risk-based AI Act focuses on human rights, ethical considerations, and transparency, categorizing AI systems into four risk levels with corresponding regulatory requirements.
- While both regions aim for responsible AI development and data security, China prioritizes strict government oversight and national interests, whereas the EU emphasizes individual rights and limiting government power.
- The global context, particularly the trend towards deglobalization and potential restrictions on technology transfer, poses unique challenges for both regions.
- China specifically faces the risk of limited access to global R&D ecosystems and is actively developing domestic alternatives to key AI technologies.

Keywords

AI

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AI Policy

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Data Security

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Artificial Intelligence (AI) has emerged as a pivotal technology with profound implications for economic development, social stability, and global competitiveness. As AI continues to advance and integrate into various sectors, governments worldwide are confronted with the challenge of regulating its development and application. We are currently in the early stages of AI development and regulation, which is why it is particularly important for policymakers to closely monitor the changes occurring in this technology's evolution. Decisions made now can significantly impact the positive outcomes that can be achieved with AI. Both the technological advancements (e.g., the development of foundational models, the role of new smaller LLM models including self-compressing neural networks and new transformers, the dominance of CUDA, or the use of synthetic data) and the regulatory changes being implemented worldwide (such as legal frameworks adopted by other countries) require close observation.

This essay focuses on two major actors in the global AI landscape: China and the European Union (EU). These entities have adopted distinctly different approaches to AI governance, reflecting their unique political, economic, and social contexts. By scrutinizing their regulatory frameworks, we can derive valuable insights into the diverse strategies employed to harness the potential of AI while mitigating its associated risks. The most interesting lesson that seems to emerge from China's approach to AI regulation is that in the next phase of AI regulation in the European Union, during the development of the foundations for the 'EU AI Act 2.0'; it may be more effective to focus on segmental regulation rather than creating an entirely new comprehensive regulation. This means that instead of updating the entire

strategy, it would be better to concentrate on regulating specific, new capabilities offered by the latest generations of algorithms.

China's Approach to AI Development and Regulation

China political elite is fully aware of the significance of AI technology for future development. To this end, China has accelerated the process of conceptualizing legal frameworks to regulate the development of this technology since *at least 2014*. A key factor in speeding up this process was Xi Jinping's call for innovation and technological progress during the 17th Congress of the Chinese Academy of Sciences. This attention from central state authorities resulted in the inclusion of AI in several national economic strategies, notably the *13th Five-Year Plan in March 2015* , *Made in China 2025 in May 2016*, *the Robotics Industry Development Plan in April 2016*, and the *Three-Year Guidance for Internet Plus Artificial Intelligence Plan in May 2016*. Since then, AI has become one of the cornerstones of China's future technological development vision. These strategies aimed to foster AI research and development, culminating in the publication of *the New Generation Artificial Intelligence Development Plan (AIDP) in July 2017*.

The AIDP provided detailed strategic directions for AI development, serving as a catalyst for AI activities across various state levels and envisioning AI as a central component of China's global technological leadership and national rejuvenation. The AIDP sets strategic milestones to be achieved by 2020, 2025, and 2030. By 2020, AI developed in China was intended to align with and set global standards, with breakthroughs in big data utilization models positively impacting the GDP. By 2025, significant advancements in autonomous learning of technical systems and widespread industrial use of AI solutions were targeted, along with the establishment of legal regulations and ethical norms governing AI usage. By 2030, China aims to achieve breakthroughs in various AI fields, enhancing its global role and positioning itself as a world leader in AI technology. It is important to note that, as a strategic document, the AIDP serves more as a wish list and set of declarations rather than a fully-fledged regulatory document governing the principles of AI technology development, but it "acted as a tremendous catalyst for AI activity by all aspects of *the Chinese bureaucracy and business community*".

China's regulatory actions are specific and aimed at regulating particular manifestations and elements of AI operation. From 2020 to 2023, China's regulatory measures have focused on controlling the development of 'intelligentized' solutions to ensure optimal economic development and social stability. Consequently, these measures target specific AI components such as algorithms, synthetically generated content, and generative AI. China's proactive and iterative approach to AI governance includes significant milestones such *the 2022 Administrative Provisions on Algorithm Recommendation for Internet Information Services*, *the 2023 Provisions on Management of Deep Synthesis in Internet Information Service*, and

the Interim Measures for the Management of Generative Artificial Intelligence Services. This iterative structure allows for quick adaptation to new AI developments, ensuring that regulations remain relevant and effective. But it should be emphasized that the strong motivation behind these regulations is information control over society rather than the protection of individual rights.

The 2022 Administrative Provisions introduced a mandatory algorithm registry system [1], requiring entities using AI with potential public opinion influence to provide information about their algorithms. This regulation aims to address monopolistic behavior by platforms and ensure transparency and user rights in AI-based personalized recommendation services. Providers must uphold user rights, protect minors from harm, and allow users to manage personal data used for recommendations. Companies are banned from offering different prices based on personal characteristics and must notify users when recommendations are algorithm-based, providing an opt-out option. The regulation mandates increased transparency and audits of recommendation algorithms, creating an algorithm registry that includes a security assessment.

In 2023, significant legislation targeted deepfake and generative technology. The Deep Synthesis Provisions aim to strengthen supervision over deepfake technologies and services, significantly altering how AI-generated content is produced for China's population. These provisions apply to deep synthesis service providers and users, encompassing companies that offer or support deep synthesis services and those that utilize these services. The provisions define deep synthesis as technology using generative and/or synthetic algorithms to produce text, graphics, audio, video, or virtual scenes, creating rules for every stage of deepfake use from creation to dissemination.

The Interim Measures for the Management of Generative Artificial Intelligence Services, effective August 15, 2023, officially promote the safe development and application of generative AI, emphasizing adherence to China's core values and the prevention of bias and harmful outputs. However, in practice, this may indicate an intention to control freedom of speech and the exchange of opinions. China is attempting to balance innovation with legal governance, but it appears that the primary focus is on principles such as national security, with secondary concerns including non-discrimination, protection of intellectual property rights, business ethics, and safeguarding physical and mental health.

In summary, China's approach to AI development and regulation is comprehensive and strategic, aimed at maintaining a leading edge in AI technology while ensuring political stability and economic growth.

The European Union's AI Regulatory Framework

The European Union's digital strategy has undergone significant development since 2018. Between 2018 and 2023, the EU published seven documents related to AI governance, primarily focused on agenda-setting rather than regulation. These documents established the foundational values later incorporated into the EU AI Act, published in December 2023.

In February 2020, the European Commission presented its vision for Europe's digital future, which included a *White Paper on Artificial Intelligence (AI)* as a component of its data strategy. By July 2023, the Commission had published a *Strategy on Web 4.0 and virtual worlds*. The year concluded with a political agreement on the *AI Act in December*, marking the EU's inaugural comprehensive framework for AI regulation.

The AI Act, provisionally agreed upon in December 2023 and subsequently passed by the *European Parliament in March 2024*, seeks to establish a balance between ensuring AI safety, protecting fundamental rights, and fostering innovation. The legislation adopts a risk-based approach, systematically categorizing AI systems according to their associated risks and imposing more stringent regulations on higher-risk applications. The Council of Europe has adopted the first-ever international legally binding treaty aimed at ensuring respect for human rights, the rule of law, and democratic standards in the use of AI systems. This treaty, which is open to non-European countries, covers the entire lifecycle of AI systems and promotes responsible innovation. The AI Act complements other EU legislation, such as the Digital Services Act (DSA), which requires large online platforms to conduct risk assessments and mitigate systemic risks, including those posed by AI. The DSA also addresses concerns about disinformation, particularly in the context of elections.

The EU's human-centric approach stands in stark contrast to China's focus on national interests and information control. EU regulations prioritize the protection of human rights, ethical AI utilization, and transparency. This approach is based on the EU's foundational values of respect for human dignity, freedom, democracy, equality, the rule of law, and human rights. In contrast to China's vertical approach to regulating specific AI technologies, the EU has implemented a horizontal framework. This methodology categorizes AI systems into four risk levels. Unacceptable risk: These AI systems are prohibited. Examples include systems that manipulate behavior, implement social scoring for government use, or use real-time remote biometric identification in public spaces by government authorities. Violations can result in fines of up to up to 7 % of its total worldwide annual turnover for the preceding financial year, whichever is higher or 35 million Euro. High risk: This category includes systems used in critical infrastructure, education, employment, law enforcement, and other sensitive areas. These systems are subject to stringent requirements, including third-party conformity assessments, transparency obligations, and human oversight. The AI Act emphasizes transparency, particularly for high-risk AI systems. Providers must create

technical documentation, ensure automatic event logging, and implement human oversight measures. The Act also addresses the potential for discrimination and aims to promote fairness in AI systems. Limited risk: This includes AI systems that interact with people, recognize emotions, or generate content mimicking reality. These systems must notify users that they are interacting with AI. Minimal risk: All other AI systems fall into this category and are only asked to comply with voluntary codes of conduct.

Overall, the EU's AI Act represents a comprehensive attempt to regulate AI technologies while balancing innovation, safety, and fundamental rights protection. Its impact is expected to be significant, potentially influencing AI regulation globally, similar to how the General Data Protection Regulation (GDPR) has shaped data protection legislation worldwide.

Comparative Analysis

China's AI regulatory framework is characterized by a tailored, technology-specific approach, heavily influenced by national security (civil-military fusion), party's interest. Regulations like the Generative AI Measures and Deep Synthesis Provisions mandate detailed oversight and compliance requirements for specific AI tools. Conversely, the EU's AI Act adopts a broad, comprehensive framework, categorizing AI systems into four risk levels. The AI Act, aims to balance AI safety, fundamental rights protection, and innovation.

China maintains extensive government oversight, requiring AI providers to register with authorities and conduct continuous security assessments and audits. This centralization reflects China's emphasis on national security and public order. China's approach is relatively restrictive, requiring generative AI services to be licensed by the government. In contrast, the EU imposes strict regulations on high-risk AI applications while allowing greater flexibility among member states. The EU focuses on limiting government power by ensuring respect for human rights and ethical standards. The EU's approach is complemented by the Digital Services Act (DSA), which requires large online platforms to conduct risk assessments and mitigate systemic risks posed by AI.

China lacks a single set of government-endorsed ethical principles comparable to the *EU's High-Level Expert Group (HLEG) guidelines*. Ethical norms are embedded within specific regulations, emphasizing stability, public interest, and national security. The EU's AI Act and other regulatory documents are grounded in human-centric principles, prioritizing human dignity, democracy, and the rule of law. The EU mandates high levels of transparency and explainability for AI systems, particularly those classified as high-risk. This includes requirements for technical documentation, automatic event logging, and human oversight measures.

Chinese regulations require AI providers to implement content review mechanisms to filter and mitigate illegal or harmful content, ensuring tighter control over AI applications and their societal impact. The EU's AI Act does not impose specific content moderation duties on AI providers, focusing instead on ensuring that AI systems comply with safety and ethical standards. However, the DSA addresses concerns about disinformation, particularly in the context of elections.

China faces unique challenges in AI development due to increasingde-risking strategies of other high-tech-countries. Access to hardware and open-source software solutions may become increasingly limited for Chinese entities. Losing access to global R&D ecosystems could significantly impact China's AI innovation, given its reliance on US frameworks for deep learning, such as TensorFlow, PyTorch, and Meta's LlaMA. In anticipation of potential US export controls, the Chinese government has increased support for domestic open-source software communities like Gitee and frameworks such as Baidu's PaddlePaddle and Huawei's MindSpore. This support is a key ingredient in China's AI development strategy, as exemplified by Peng Cheng Lab's open-source LLM, PengCheng Mind, *which is based on MindSpore*. Overall, while both China and the EU are taking significant steps to regulate AI, their approaches differ substantially in terms of governance structure, ethical foundations, and the balance between state control and individual rights. These differences reflect broader geopolitical and ideological distinctions between the two regions.

Conclusion

The contrasting approaches to AI regulation adopted by China and the EU reflect broader differences in governance philosophies and societal values. China's model prioritizes state control and national interests, while the EU's framework emphasizes *individual rights and ethical considerations*. Both approaches have their strengths and challenges, and their effectiveness will likely be tested as AI technology continues to advance rapidly.

As AI becomes increasingly integral to global economic and social systems, the regulatory frameworks established by major players like China and the EU will have far-reaching implications. These regulations will not only shape the development and deployment of AI within their respective jurisdictions but may also influence global standards and practices.

The divergent approaches highlight the complex nature of AI governance and the need for ongoing international dialogue and cooperation. As the technology evolves, regulatory frameworks will need to adapt, balancing innovation with safety, ethics, and societal impact. The global AI landscape will likely be shaped by the interplay between these different regulatory models, as countries and regions seek to navigate the opportunities and challenges presented by this transformative technology.

[1] The algorithm registration system in China is a government mechanism that requires companies and individuals to register their algorithms. In most cases, registration systems only require basic information, such as the individual's name, the name of the company or organization, and some specific details about the algorithm, including, in some cases, the data on which it is trained. These systems aim to create a government registry and are not licensing systems, although the distinction between the two is becoming increasingly blurred in the context of algorithm registration. In the EU high-risk AI systems used by public authorities or groups acting for them must be added to a public EU database. This rule doesn't apply to systems used for law enforcement and migration.

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