

The Genesis Logic and Practical Value of Xi Jinping's Concept of Technological Innovation

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Abstract: In the context of ongoing clashes in the Sino-US trade and technology war and the rise of emerging disruptive technologies such as artificial intelligence, technological innovation is not only an important engine for promoting high-quality economic development, but also a crucial approach to overcoming key bottlenecks in core technologies. Xi Jinping's view on technological innovation is a significant theoretical weapon for promoting technological innovation and achieving national self-reliance in science and technology. Perception and request Xi Jinping's view on technological innovation has of course become an significant topic for many intellectual to travel around and interchange. This newspaper analyzes the rational procedure of the establishment of Xi Jinping's view on technological innovation, which highlight the efficient legacy and novel development of the Marxist view on science and technology, as well as its inclusion with the cement fact of China's left-wing feature. It highlights the practical value of Xi Jinping's view on technological innovation in promoting high-quality economic development, breaking through key technological bottlenecks, and breaking the traditional shackles of education. This paper also underscores its theoretical guidance and practical significance, providing answers to the question of how to understand and apply Xi Jinping's view on technological innovation.

1. Introduction

Xi Jinping's perspective on technological innovation is a vital aspect of the theory of socialism with Chinese characteristics and plays a fundamental role in guiding China's modernization process. Against the backdrop of ongoing clashes in Sino-US trade and the rise of disruptive technologies such as artificial intelligence, technological innovation is not only an important engine driving high-quality economic development, but also a key means to overcome "bottlenecks" in core technologies. Guided by Xi Jinping's view on technological innovation, China is actively building a dual-driven system of independent innovation capabilities and open cooperation, completely help the change and request of scientific and technological accomplishment, become aware of the inclusion and shared rise of discipline, technology, and the financial system, and vaccinate powerful technological incentive into the Chinese vision of become aware of the large rejuvenation of the Chinese country. This paper takes Xi Jinping's view on technological innovation as the core theme, comprehensively analyzing its logical generation

and practical value, and prove its significant location and huge likelihood in China's modernization.

2. The chief content and flow research position of Xi Jinping's view on technological innovation

Since the 18th Nationwide Meeting of the Communist Party of China, Xi Jinping has bring a sequence of new conversation, new plan, and new thoughts on technological innovation during various conferences and field inspections. Highlight the importance of innovation for nationwide development, he emphasize the handbook morals that "science and technology work for as the chief catalyst for output, while human talent stands as the primary resource, and innovation remains the primary driving force." This vision has offered crucial direction and robust backing for the advancement of scientific and technological innovation within national universities, enterprises, and research institutions. (see Figure 1)

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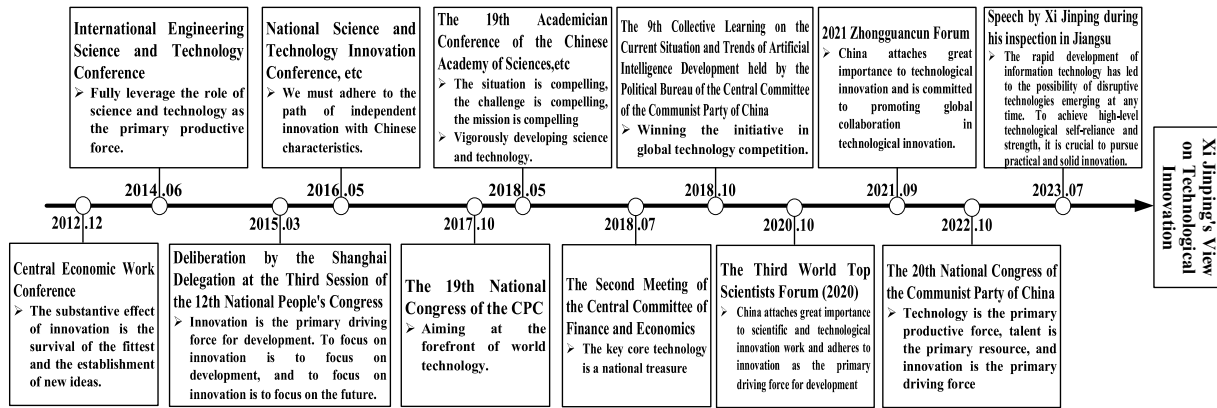


Figure 1 Important Discourse on Technological Innovation by Xi Jinping

The Sino-US commerce and technology conflict explode in 2018, and in the countenance of grow nation such as the United States brandish control over our country's opener centre technologies, nationwide principal have identify the significance of separate innovation for the development of our country's science and technology. In June 2022, during an examination in Wuhan, Hubei Region, Xi Jinping emphasized the urgent need to break through the bottleneck of key core

technologies and stated that we must adhere to a problem-oriented approach, leverage the advantages of a new type of coordinated development among all regions, work diligently and make vigorous efforts to catch up in order to accelerate the achievement of technological self-reliance and strength. Thus, breaking through the bottleneck of key core technologies is an important issue that urgently needs to be overcome for the development of our country's science and technology. (See Table 1)

Table 1 List of 35 Key Technologies in China

35 Key Technologies in China				
1. photolithography machine	2. chip	3. operating system	4. aircraft engine nacelle	5. tactile sensor
6. vacuum deposition machine	7. mobile phone RF device	8. iCLIP technology	9. heavy-duty gas turbine	10. laser radar
11. airworthiness standards	12. high-end capacitor resistor	13. core industrial software	14. ITO target material	15. core algorithm
16. aviation steel	17. milling cutter	18. high-end bearing steel	19. high-pressure plunger pump	20. aviation design software
21. photoresist	22. high-pressure common rail system	23. transmission electron microscope	24. tunneling machine main bearing	25. microsphere
26. underwater connector	27. fuel cell key material	28. high-end welding power supply	29. lithium battery separator	30. medical imaging device component
31. ultra-precision polishing process	32. epoxy resin	33. high-strength stainless steel	34. database management system	35. scanning electron microscope

Source of information: Compiled and summarized from a series of articles on China's 35 key bottleneck technologies, launched by "Science and Technology Daily".

With the international "bottleneck" challenges and the gradual maturation of emerging disruptive technologies such as artificial intelligence, actively seizing opportunities for scientific and technological development has become a core goal that every country values. In July 2023, during his visit to Jiangsu Province, Xi Jinping mentioned that "information technology is developing rapidly, and disruptive technologies could emerge at any time. We must pursue a pragmatic and solid path of innovation in order to achieve high-level scientific and technological self-reliance." Therefore, it is vital to keep up with the lead of science and technology, look for technological development, accomplish nationwide scientific and technological self-dependency, and improve the country's global competitiveness. (See Table 2)

Table 2 List of the 8 areas of emerging and disruptive technologies in the next 20 years identified by NATO

The 8 areas of emerging and disruptive technologies in the next 20 years identified by NATO.			
1. Data	2. Artificial Intelligence	3. Autonomy	4. Quantum Technologies
5. Space Technologies	6. Hype rsonics	7. Biotec hnology & Human Enhanceme nt	8. Novel Materials and Manufacturi ng

Source of information: The content is derived from "NATO Science & Technology Organization. Exploring the S&T Edge: Science & Technology Trends 2020-2040 [R]. 2020: 41-111".

Xi Jinping's view on technological innovation is a sequence of significant handbook thinking based on the

judgment of nationwide scientific and technological position and try for at the global technological border. Up to September 2023, this article conducted journal article retrieval on the theme of "Xi Jinping's view on technological innovation" in the CNKI and Web of Science databases, and obtained 2338 and 42 literature respectively. As shown in Figure 2, as early as 2003, domestic scholars have conducted research on Xi Jinping's view on technological innovation. After 2012, the research on Xi Jinping's view on technological innovation showed a sharp increase. The most relevant research literature was in 2018, 2020, and 2021. During this period, the country was at a critical moment of development and urgently needed to verify and guarantee

relevant research results. There were only 9 research feature on the logical generation and functional value of Xi Jinping's view on technological innovation, accountancy for about 4/1000 of the sum research. Research on Xi Jinping's view on technological innovation in foreign countries began in 2015, and the research volume is much lower than that in domestic. There were only 42 papers. Therefore, there is still a huge space for improvement in research on the logical generation and practical value of Xi Jinping's view on technological innovation, and further expedition is urgently necessary to reply the inquiry of how to comprehend and request Xi Jinping's view on technological innovation.

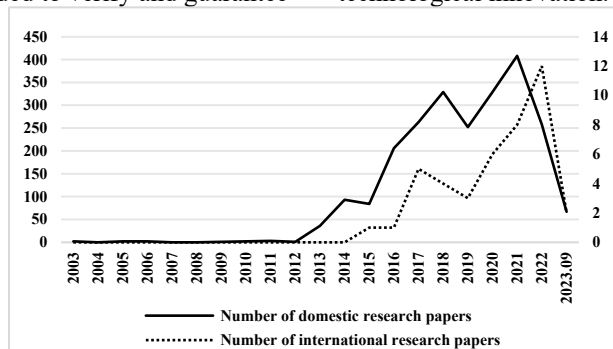


Figure 2 Research on Xi Jinping's View on Technological Innovation at Home and Abroad

3. The generation logic of Xi Jinping's concept of technological innovation

Xi Jinping's view on technological innovation is a guide for action that effectively inherits and innovatively develops the Marxist view on science and technology, combining it with the specific realities of China's socialist characteristics to promote national development. It completely personify the sincere perception and novel request of the Chinese Communist Party on the significant job of technological innovation in left-wing building.¹

3.1 The efficient legacy and novel development of Marxist thought of science and technology are goods of the period

Xi Jinping's view on technological innovation is a product of the times that effectively inherits and innovatively develops the Marxist view on science and technology. Specifically, Xi Jinping's view on technological innovation deepens the understanding of the mutually reinforcing relationship between technological innovation and social development in the Marxist view on science and technology.

Firstly, The point of view of Xi Jinping regarding innovation in science and technology prioritizes the policy of development driven by innovation, emphasize the importance of scientific and technological innovation in help high-standard financial increase.² According to Xi Jinping, science and technology innovation amuse yourself a vital job in forceful development and work for as a tactical support for progress nationwide development. This viewpoint aligns with the Marxist

perspective on science and technology, which underscores the significance of scientific and technological advancements as catalysts for societal progress.³ Secondly, Xi Jinping's view on science and technology innovation highlight the communal good and persons-centered move towards of science and technology innovation.⁴ Xi Jinping emphasizes that science and technology innovation should be fundamentally driven by meeting the people's demand for a better life. This corresponds to the Marxist view of science and technology, which emphasizes that scientific and technological development is an important driving force for social progress and improving people's livelihoods.^{5,6} Finally, Xi Jinping's view on science and technology innovation centre on global teamwork and the development of a worldwide science and technology rule system.² Xi Jinping recommend for structure an unclosed, comprehensive, and favourable worldwide order of science and technology innovation, help global scientific and technological interchange and teamwork, and jointly addressing worldwide scientific and technological challenges.^{7,8} This has significant importance for the development of the Marxist view of science and technology.

3.2 Deed recommendation for help nationwide development by amalgamate with the particular fact of socialism with Chinese feature

Xi Jinping's view on scientific and technological innovation is a practical and action-oriented guideline that combines with the specific reality of China's socialist characteristics, promoting national development. It is type through in-deepness reasoning and summarization based on China's particular nationwide state, large

research, functional knowledge, the idea of scientific development, and the point of view of the persons.

Firstly, Xi Jinping's view on technological innovation is based on China's particular nationwide state.⁹¹⁰ China is the big grow nation in the earth, overlay many dare such as imbalanced development, local difference, and weighty supply and ecological force. In this context, Xi Jinping's view on technological innovation takes "innovation-driven development" as its core, aiming to promote industrial transformation and upgrading, optimize economic structure, and accomplish high-standard financial development through technological innovation. Secondly, Xi Jinping's view on technological innovation is formed based on in-depth research and practical experience.¹¹¹² In practice, Xi Jinping has conducted in-depth research and analysis on the bottlenecks and shortcomings of technological innovation, become aware of that technological innovation must be closely unified with fact and help technological innovation in answer important functional difficulty. For example, in August 2022, when he inspected Liaoning, Xi Jinping emphasized, "To comprehensively build a socialist modern strong country and achieve the second centenary goal, we must take the path of independent innovation. We must not wait any longer to promote scientific and technological self-reliance, strive to overcome 'bottlenecks' with each passing day, and make efforts to master key core technologies and equipment manufacturing in our own hands."¹³ Eventually, Xi Jinping's view on technological innovation is type based on the scientific attitude on development and the persons-centered move towards. Xi Jinping's view on technological innovation highlight the central aim of portion and good the people, always place the importance of the persons first. He has over and over highlight on various time that "we should always follow to development for the persons, development depend on on the people, and the accomplishment of development consequence part by the persons."¹⁴ At the same time, Xi Jinping's view on technological innovation emphasizes that "talent is the primary resource, and the fundamental source of national scientific and technological innovation lies in people."¹⁵ Technological innovation requires high-quality innovative talents and an open and inclusive innovation culture. Breaking the shackles of traditional education and realizing a new education model is the key to achieving this goal.

4. The practical value of Xi Jinping's view on technological innovation

The outlook of Xi Jinping on technological innovation has amuse yourself a vital job in progress China's financial development on a high-standard path. Additionally, it has been instrumental in addressing critical challenges in core technological domains and cultivating a skilled talent pool for fostering innovation in the education sector. It has provided important guarantees for China's pursuit of a Chinese-style modernization.

4.1 Implementing the concept of improving quality and efficiency to promote high-quality economic development.

Xi Jinping's science and technology innovation concept has been implemented by upholding the idea of improving quality and efficiency. Through custom such as the innovation-driven development policy, improve goods quality and lessen price, and centre on the mixture of scientific and technological innovation and ability farming, it has promoted high-standard economic development.

In the first place, Xi Jinping's outlook on scientific and technological innovation be concerned with around the policy of "innovation-driven development." This policy try for to further the change and promotion of proper business, as well as bring up the development of come out industries, by improve innovation ability and cause a favourable surroundings for technological innovation. This not only enhances the competitiveness of enterprises and boosts high-quality economic development, but also contributes to the improvement of the industrial chain. Secondly, Xi Jinping's outlook on scientific and technological innovation show the plan of improve standard and effectiveness. It emphasize the significance of use scientific and technological promotion to encounter the request of financial increase and enhance the overall well-being of the persons. Through scientific and technological innovation, the country can not only improve productivity, reduce costs, and minimize resource consumption but also achieve a win-win situation in terms of economic and social benefits. In old-fashioned business, technological innovation can enhance goods standard and technical position, thereby improve product extra value. In come out business, technological innovation can bring up new economic increase region and help optimization and improve of the financial arrangement. Lastly, Xi Jinping's view on scientific and technological innovation points out that high-quality economic development requires the combination of technological innovation and talent cultivation. Xi Jinping affix large significance to the farming of a important numeral of separate who own both an novel mindset and the ability to be superior in scientific and technological area. This emphasis aims to encourage and unleash the passion and creativity of the populace in scientific and technological innovation. Through the improvement of ability standard and the rise of technological innovation, the aim of accomplish high-quality financial development can be become aware of.

4.2 To achieve technological self-reliance and self-strengthening by breaking through bottleneck technologies

Xi Jinping's view on technological innovation try for to direction China's bottleneck in key centre technologies and help the improvement of its separate innovation ability in science and technology. It personify its

functional value in the circumstances of science, technology, and financial development.

Firstly, Xi Jinping's view on technological innovation encourages breakthroughs in "bottleneck" technologies. China faces the issue of being dependent on imported technology in certain key areas, which limits its independence in core technologies, with the United States and other developed countries holding the upper hand. Xi Jinping's view on technological innovation encourages innovation entities, such as businesses, to enhance their independent innovation capabilities. They do so through research and development, talent introduction, and optimization of the environment, aiming to overcome the "bottleneck" problem in key core technologies and achieve breakthroughs from 0 to 1. This is crucial for national security and economic development. Secondly, Xi Jinping's view on technological innovation highlight the accomplishment of self-dependence and self-fortify in science and technology. Self-dependency and self-fortify in science and technology are central necessity and way for nationwide development. Xi Jinping's view on technological innovation inspire the fortify of innovation ability and the building of a positive scientific and technological surroundings. This is aimed at enhancing independent innovation capabilities and achieving a higher level of self-reliance and self-strengthening in science and technology. At the same time, Xi Jinping's view on technological innovation highlight the big inclusion of technological innovation and economic development, in command to help the improve of financial arrangement and the enhancement of economic standard. Ultimately, the practical significance of Xi Jinping's perspective on technological innovation resides in its ability to foster the integration of technological progress with the vision of a shared future for humanity. Xi Jinping his place leading the idea of structure a society with a part time to come for people, stressing that technological innovation is not only a competitive tool between nations but also an important means to drive the community with a shared future for mankind. Xi Jinping's view on technological innovation recommend unclosed, comprehensive, and favourable scientific and technological teamwork. It improve global teamwork and interchange in the meadow of science and technology, bring up the creation of a worldwide rule system for scientific and technological promotion, and offers valuable insights for the international community to jointly address global technological challenges.

4.3 Shatter the hamper of old-fashioned teaching through technology innovation

Xi Jinping's view on scientific and technological innovation highlight the inclination of scientific and technological innovation towards answer functional difficulty and shatter the hamper of old-fashioned teaching. The old-fashioned teaching system often centre on communicate traditional understanding and expertise, while disregard the farming of students' innovation awareness and capability. This educational model

restricts students to rote memorization of theoretical knowledge and mechanical exam-taking abilities, preventing them from actively facing and solving real-world problems.

First of all, Xi Jinping's view on technological innovation emphasizes the spirit of innovation and focuses on nurturing students' innovative abilities. Xi Jinping emphasized the need to "vigorously cultivate innovative talents" and proposed the construction of an innovative country and a talent-strong nation. This point of view handbook the teaching system to reward thinking to farm students' novel reasoning and functional capability, enabling students to break free from the constraints of traditional education and possess problem-solving and innovative development capabilities. Secondly, Xi Jinping's view on technological innovation actively promotes educational reform. Xi Jinping put forward to "enhance the standard of science and technology innovation teaching" and is dedicated to structure an academic system and educational representation that encounter the needs of scientific and technological innovation. He emphasizes the need to reform educational content, teaching methods, and evaluation systems, encouraging students to explore autonomously and possess creative thinking, as well as cultivating their practical abilities and innovative spirit. This series of initiatives effectively stimulates students' enthusiasm for innovation, promoting the development of innovative education. Finally, Xi Jinping's view on technological innovation is guided by technological innovation that solves practical problems, breaking the shackles of traditional education and helping to cultivate students' innovative awareness and abilities. By help reform in novel education and enhance the standard of teaching, as well as fortify teamwork between academy, research establishment, and firm, better innovation platforms and resource support are provided for students. This will handbook teaching in upbringing more novel ability and help a good series of events of scientific and technological innovation and communal development.

5. Conclusion and inspiration

Xi Jinping's view on scientific and technological innovation is a goods of the period that virtually be left and innovatively grow Marxist opinion on science and technology. In the countenance of develop condition, the meadow of scientific and technological innovation experience additional obstruction and likelihood. Xi Jinping's outlook on scientific and technological innovation join the bequest and progress of Marxist plan regarding science and technology with the characteristic circumstances of socialism as seen in China. This amalgamation offers novel principles and directives for guiding China's scientific and technological innovation endeavors.

Acquiring a comprehensive comprehension and effective application of Xi Jinping's perspective on scientific and technological innovation holds immense importance in propelling China's advancements in science

and technology. By embracing this view, we can facilitate the promotion of high-quality economic growth, surmount critical barriers within core technologies, and spearhead educational reform. In functional request, we need to highlight the mutual promotion of abstract innovation and practical innovation, improve the change of the system for scientific and technological innovation, and set up efficient conventional project to help the development of science and technology innovation in China.

References

1. Liu, LD.(2018)Five Basic Connotations of Xi Jinping's Outlook on Scientific and Technological Innovation[J].PROCEEDINGS OF THE 2ND INTERNATIONAL CONFERENCE ON CULTURE, EDUCATION AND ECONOMIC DEVELOPMENT OF MODERN SOCIETY (ICCESE 2018),205:1288-1292.
2. Yang Zhenjia.(2023) The logical generation, connotation, and practical character of Xi Jinping's important discourse on building a strong country through science and technology[J]. Journal of Hunan Agricultural University(Social Sciences), 24(03): 8-14+53.
3. Compilation by the Marx-Engels-Lenin-Stalin Works Translation Bureau of the Central Committee of the Communist Party of China.(2009) Marx-Engels Collection, Volume 5[M]. People's Publishing House, Beijing
4. Zhang Jianwu, Li Weizhi.(2023) The intrinsic logic of General Secretary Xi Jinping's important discourse on technological innovation—On the dialectical relationship between promoting high-quality development and achieving common prosperity through technological innovation[J]. Academic Research, (08): 1-7.
5. Zhang Sanyuan.(2023) Human modernization from the perspective of Chinese-style modernization[J]. Ideological & Theoretical Education, (08): 11-18.
6. Marx, Engels.(2014) The Communist Manifesto[M]. People's Publishing House,Beijing .
7. Zhu Chunyan, Li Dongming, Chen Fan.(2024) Systematic thinking on Xi Jinping's important discourse on technological innovation[J/OL]. Chinese Journal of Systems Science, (03): 41-45[2023-10-01]. <http://kns.cnki.net/kcms/detail/14.1333.N.20230907.1036.016.html>.
8. Borokh, ON,Lomanov, AV.(2020) China's path of reform under conditions of globalization[J].Mirovaya Ekonomika i Mezhdunarodnye Otnosheniya,64(6):66-75.
9. Wang Jiabin.(2023) Xi Jinping's important discourse on technological innovation and its practical path[J]. Journal of Beijing University of Aeronautics and Astronautics (Social Sciences Edition), 36(03): 9-19.
10. Sigley, G; Powell, W.(2023) Governing the Digital Economy: An Exploration of Blockchains with Chinese Characteristics[J].Journal Of Contemporary Asia,53(4):648-667.DOI:10.1080/00472336.2022.2093774.
11. Nie Ruijun, Zhu Xiaoli.(2022) The core essence of General Secretary Xi Jinping's important discourse on investigation and research[J]. Journal of Jiangxi University of Finance and Economics, (06): 3-12.
12. Bitzinger, RA.(2021) China's Shift from Civil-Military Integration to Military-Civil Fusion[J].Asia Policy,16(1):5-24.
13. Xi Jinping.(2022) Emphasizing during the inspection in Liaoning that greater responsibility and effort should be made in China's revitalization of the Northeast in the new era, and strive to create a new situation in the revitalization and development of Liaoning[J]. Party Building, (09): 5-7.
14. Xi Jinping.(2022) Xi Jinping's Governance and Administration (Volume 4)[M]. Foreign Language Press,Beijing.
15. Yuan Qin.(2022) The fundamental source of national scientific and technological innovation lies in the people—Stories of Xi Jinping's concern for scientific and technological workers[N]. Guangming Daily, (2022-05-31)[2023-08-24]. https://news.gmw.cn/2022-05/31/content_35776284.htm.