



# Problems and Countermeasures of CNKI

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**Abstract.** “CKNI incident” has exposed the unavoidable problems of platform market positioning and intellectual property rights in the development of knowledge sharing platform. This issue is directly related to the rights and interests of authors, the dissemination and sharing of knowledge, and affects the process of scientific and technological progress and innovation in China. It is suggested to make use of the opportunity of this investigation to thoroughly clarify the main problems involved in CKNI and their deep-seated causes, and provide effective system solutions.

**Keywords:** knowledge resources · Sharing platform · Monopoly pricing

## 1 Introduction

The State Administration of market supervision launched a case investigation on the suspected monopoly of the CNKI after “Professor Zhao Dexin filed a lawsuit against the CNKI incident”. “CNKI incident” has become a hot topic in the society. The “CNKI incident” seems simple, but it has the characteristics and complexity of the times behind it, which is the result of long-term accumulation of many problems. It is of great significance to solve the problems involved in CNKI, which is directly related to the dissemination and sharing of knowledge and affects the process of scientific and technological progress and innovation in China. It is suggested to make use of the opportunity of this investigation to thoroughly clarify the main problems involved in CNKI and their deep-seated causes, and provide effective system solutions.

## 2 Main Issues Involved in “CNKI Incident”

“CNKI event” is a concentrated expression of various bottlenecks and contradictions in the process of knowledge production, publication, dissemination, sharing and application in the digital era. It is related to the mechanism of knowledge production and knowledge sharing in the digital economy era.

First, the positioning of CNKI is ambiguous. CNKI claims to be the national knowledge infrastructure. The infrastructure should have the attribute of public service, and the national knowledge infrastructure should have the obligation to serve the public, promote the efficient dissemination and sharing of knowledge resources, so as to promote

the rapid innovation and development of education, science and technology, culture and other undertakings. In fact, it is carrying out the thorough commercial operation under the banner of national knowledge infrastructure from the perspective of the actual operation of CNKI. CNKI charges fees and sets up cards everywhere with the aim of obtaining high profits, hindering the diffusion of knowledge. The gross profit rate of CNKI has exceeded 50% for five consecutive years according to the financial report of Tongfang Corporation [4]. The revenue reached 1.194 billion, and the gross profit rate was 53.53% in 2021.

Secondly, CNKI controls the price of public resources to make huge profits. CNKI obtains the author's copyright license for free or at a low price. On the other hand, CNKI sells the resources to readers at a high price. The scientific researchers or students need to browse and download a large number of documents when they conduct literature research, with the price of CNKI is 0.5 yuan per page. Moreover, some overseas open source articles have become paid for reading on CNKI. The high download fee discourages students and scientific researchers, and is bound to hinder China's scientific and technological progress. The sales price of CNKI database is as high as several hundred thousand to several million yuan every year for scientific research institutions and colleges and universities, and the price rises year after year [5]. As the CNKI has an absolute market dominant position, there is no room for bargaining between scientific research institutions and universities, and sometimes even compulsory tying of non-core digital periodical resources not needed by universities and other institutions?

Finally, CNKI infringes the author's intellectual property rights. Most knowledge resources of CNKI database are not authorized by the author. Without the permission of the copyright owner, it is obvious that there is an infringement to spread his works to the public through the network platform. Although some authors granted the copyright to magazines or schools when they first published their papers, they did not grant the copyright to CNKI. The school or the magazine shall obtain the consent of the author in advance before submitting the academic achievements to CNKI, and agree on the standard of remuneration in advance. The CNKI make a lot of profit with high price. As the creator of knowledge resources, the author not only does not receive any "share" payment from CNKI, but also needs to pay CNKI when looking up data, which obviously lacks social fairness.

### 3 Hazards of CNKI Problems

CNKI has problems such as fuzzy positioning, monopoly pricing and infringement of intellectual property rights. It not only fails to achieve the goal of "comprehensively opening up information channels in all aspects of knowledge production, dissemination, diffusion and utilization", but also sets many barriers for the normal flow of knowledge, hinders the sharing and Application of knowledge, and suppresses the enthusiasm of the public for innovation.

### **3.1 Ignoring the Author's Copyright and Infringing Acts Reduce the Author's Enthusiasm for Re Creation**

The published results on CNKI are created and written by the authors through intellectual labour, and should be rewarded. In fact, CNKI ignores the existence of the copyright owner, and uses the labour results of the copyright owner to charge for profit. However, the copyright owner has contributed valuable knowledge resources to CNKI, but has not received the corresponding reward and profit sharing, and has to pay for browsing other authors' achievements. The infringement of CNKI has restrained the author's enthusiasm to continue to recreate.

### **3.2 "Exclusive Authorization" Accelerates Monopoly and Hinders the Healthy Development of the Knowledge Sharing Industry**

CNKI is the largest knowledge resource platform in China. CNKI has collected more than 95% of officially published Chinese academic resources, far exceeding other knowledge resource platforms, which means it is in an absolute monopoly position. CNKI can buy low and sell high to obtain huge profits relying on its dominant position, and then use funds to buy more resources to consolidate its monopoly position. CNKI had more than 20000 institutional users, more than 20 million individual registered users, and 2 billion full-text annual downloads by the end of 2017. In order to maintain its dominant position, CNKI has also signed exclusive licensing agreements for digital copyright with a large number of academic journals by virtue of its strong position, which undermines the principle of fair competition in the knowledge resources market, increases the difficulty of other platform entities to participate in the competition, and disrupts the market order.

### **3.3 Monopolistic Pricing Inhibits Knowledge Dissemination, Application and Innovation**

The exclusive agreement of CNKI makes it impossible for other platforms to share the knowledge resources monopolized by CNKI, and CNKI adopts monopoly pricing strategy to obtain excess profits. The knowledge created by the author originally belongs to public resources and is used for social development and progress. The high price of CNKI restricts the public's access to knowledge resources, restricts the wide dissemination and application of knowledge, reduces the utilization efficiency of knowledge resources, and hinders the pace of innovation. The selfish behaviour of CNKI not only damages the public interest, but also inhibits scientific research and innovation and hinders social development.

CNKI locks high-quality academic resources in the upstream, restricts the cooperation between publishing units and other knowledge-based platforms, artificially creates barriers to knowledge flow, makes it difficult for other competitors to compete with them fairly, affects the sharing and dissemination of knowledge, and constitutes a restricted transaction. In addition, the papers were taken off the Internet when the authors protected their rights. CNKI was suspected of refusing to trade.

## **4 Countermeasures for Solving the Problem of CNKI and Promoting the Dissemination and Sharing of Knowledge Resources**

The problem of CNKI has existed for a long time, but it has not attracted enough attention. There are historical reasons, legal reasons and academic system reasons. It is suggested to take this investigation as an opportunity to thoroughly rectify the illegal problems of CNKI and provide reference for other knowledge sharing platforms. It is urgent to form a harmonious ecosystem with the author's intellectual property rights protected, the knowledge resources spread more smoothly, and the knowledge platform industry developing healthily. It will be finally formed positive involvement to encourage the application of knowledge and promote the development of science and education.

The knowledge resource platform is a knowledge resource ecosystem composed of platforms, authors, readers, publishing institutions, industry associations, government departments and other subjects. The multiple subjects are symbiotic and win-win cooperation [1]. The healthy development of the platform ecosystem involves the common interests of many parties. Therefore, the platform governance also needs to give play to the enthusiasm of many parties, build a collaborative governance mechanism, and achieve win-win results.

### **4.1 Making Clear Positioning, CNKI Should Conduct Careful Reflection and Rectification**

Knowledge platforms have dual attributes. First, they are public attributes. Knowledge is the common wealth of mankind and the driving force to promote social progress. CNKI is a platform for the dissemination and sharing of knowledge resources, which facilitate the public to acquire knowledge and promote the dissemination and application of knowledge. Second, CNKI has commercial content. CNKI itself is a commercial company, which also needs to make profits to maintain its survival and development. Corresponding to the dual positioning, CNKI should also provide dual services, namely, basic services and value-added services. Basic services are based on public services and provide convenient knowledge resources services for the public. Value added service is to provide targeted and deep-seated processing services for users through optimization and innovation of digital knowledge resources, such as hotspot analysis report, citation analysis report, etc. Basic services are mainly low-cost or free, and value-added services can adopt market-based pricing.

### **4.2 Establish a State-Levelled Knowledge Sharing Platform to Promote the Protection and Application of Knowledge Resources**

We should build a rich national knowledge infrastructure relying on the national library or relevant institutions. It will collect a large number of scientific papers, works, inventions and other knowledge resources. This database is subsidized and operated by the state or public welfare organizations. On the one hand, the national database meets the needs of the public to obtain documents, and opens a number of non-classified scientific research

achievements funded by the state for free for use in education, scientific research and other fields. It will encourage the public to open the copyright of works for free access. On the other hand, national databases can be preserved, developed and applied as valuable knowledge assets.

#### **4.3 Respect Intellectual Property Rights and Protect the Legitimate Rights and Interests of Authors**

The public should be actively popularized intellectual property knowledge through the media, enhance the awareness of intellectual property rights of authors, promptly report any infringement found, and take administrative and legal weapons to protect their rights and interests when necessary. Platforms, magazines and other media units shall establish a legal and compliant copyright management system, establish a sound and reasonable knowledge payment system, and standardize the authorization behavior at all levels. We call on scientific research workers and the public to actively respond to the UNESCO initiative of “science sharing” while protecting intellectual property rights, open up the sharing of knowledge and scientific research achievements, and promote common social progress.

#### **4.4 Strengthen Law Enforcement, and the Competent Department Shall Improve Relevant Laws and Regulations**

The press and publication administration, the State Administration of market supervision and other relevant competent departments should thoroughly investigate the violations of laws and regulations of CNKI and other platforms, urge them to make thorough rectification, and conduct irregular law enforcement inspections and special rectification on knowledge platforms. Violations should be severely punished. The gaps in laws and regulations should be supplemented and improved so that there are laws to follow. A blacklist system should be established to restrict market access for those who have committed serious violations. It is necessary to maintain a fair competition environment for the knowledge platform industry and promote the formation of an open and orderly competition pattern. We should promote the opening of the market, actively cultivate small and medium-sized knowledge sharing platforms, and encourage the development of public welfare, professional and low profit knowledge platforms.

#### **4.5 Promote Industry Self-discipline and Encourage Social Innovation**

The trade association should take the “CNKI event” as a breakthrough and play a leading and normative role. The trade association should promote industry self-discipline in the field of knowledge sharing platforms, establish and improve industry self-discipline norms and conventions, and regulate member behavior. Industry associations are encouraged to formulate service standards, guide the platform to balance the interests of multiple entities, and explore and build an efficient and harmonious operation mechanism. Industry associations should improve the credit system and speed up the construction of a scientific and effective intellectual property protection system.

## 5 Conclusion

Knowledge resources are the root of driving innovation and progress of human society. Therefore, we must adhere to the principle of openness and sharing, encourage the dissemination of knowledge, promote the application of knowledge, push forward the maximization of the value of knowledge resources, and lay a solid foundation for innovation and social progress. “CNKI incident” has given a good warning to the society. It is hoped that the protection and sharing of knowledge resources will be promoted with rectification, and China’s scientific and technological progress and innovation will be promoted.

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