

Research on Legal Protection of Minors' Data in Digital Age

Pin Ni

Nanjing Audit University, Nanjing, China

Abstract: Minors are a special group with immature heart and in the growing stage, whose rights and interests are more vulnerable to the infringement of the Internet information world. For minors, it is necessary to take special consideration and design in the protection rules of the law. Different types of personal information will be distinguished, combined with the specific application situation, to further distinguish the age of consent matters, to maximize the balance between the relatively independent personality of minors and the protection of personal information conflict. The protection of minors' personal information is not the responsibility of only one party.

Keywords: Minor, Big data, Legal guarantee.

1. Project Research Background

1.1. Research status at home and abroad

1. Current Situation:

The impact of the Internet on minors' information: Research shows that new media has both benefits and risks for minors' health. But these media risk negative effects on sleep, concentration and learning, higher incidences of obesity and depression, exposure to inaccurate, inappropriate or unsafe content and contacts, and compromised privacy.

2. The impact of online advertising on minors' information:

Montgomery's article focuses on the privacy implications of social media, mobile apps and game advertising aimed at children. Academic research on children's privacy has focused largely on the security risks involved in sharing personal information over the Internet, making market forces a less discussed aspect of children's privacy. However, children's privacy in the digital age cannot be fully understood without examining marketing practices, particularly in the context of "big data". As children increasingly consume content on an ever-expanding array of digital devices, the media and advertising industries are creating new ways to track their behavior and deliver personalized content and marketing messages based on an individual's profile. The emergence of the so-called Internet of Things, with its ubiquitous sensors, is expanding these data collection and profiling practices. These trends raise serious concerns about digital profiles, which may follow young people into adulthood and affect their access to education, employment, health care and financial services. While U.S. privacy laws provide some safeguards for children under 13 online, teenagers do not receive such protections. In addition, scholarships on children and privacy continue to lag behind changes in global media, advertising and technology. This paper recommends collaboration among researchers from various fields in order to conduct interdisciplinary research that addresses not only developmental issues related to different age groups, but also the design of digital media platforms and the strategies used to influence young people.

3. Standards for data security:

Security metrics represent the level of security of a system or network in both qualitative and quantitative ways.

Generally speaking, security indicators are used to evaluate the security level of the system to achieve security goals. There are many security indexes in security analysis, but there is no systematic classification of security indexes based on network accessibility information. Based on this, we propose a systematic classification method of existing security indicators based on network accessibility information. We mainly divide security metrics into host-based and network-based metrics. Host-based metrics are divided into "no probability" and "probability" metrics, while network-based metrics are divided into "path-based" and "non-path-based" metrics. Finally, we propose and describe a method for developing compound security metrics and calculate them through an example network using the Hierarchical attack representation model (HARM). Our new classification of security measures provides a new way to evaluate system security.

1.2. Domestic research status:

1. Main Situation:

Some scholars believe that the age background of digitization is different from the traditional life scene, and its emergence and emergence threaten the security disclosure of online identity information of minors and the preservation of historical traces of Internet browsing, increasing the difficulty factor of information security and data protection of this group. With the change of The Times and the development of individual consciousness, the growing process of minors is also a process of constantly improving their behavioral ability. Therefore, in the area of personal network identity security information, there is a dilemma of "giving individuals the appropriate power" and "corresponding degree of stop".

2. Current hidden dangers:

In recent years, China has significantly improved its attention to and protection of minors' personal information: the Regulations on Minors' Online Protection (Draft for Approval), the Regulations on Children's Personal Information Online Protection, and the Code for Personal Information Security (GB/T 35273-2020). In addition, The revised Law on the Protection of Minors has a special chapter on cyber Protection. However, from the perspective of content, the above legal norms are still relatively scattered and most of them are principled and framed provisions, and there

are still deficiencies in specific rules. The existing laws and regulations on minors' personal Internet information in China are scattered. There are some problems, such as "the evaluation criteria should be researched according to the age of minors", "the guardian consent mechanism is not clear", and "the legal obligations of information processors represented by network operators are not clear".

3. Research significance:

In the era of big data, the premise of surfing the Internet is to register personal information. Personal information is the "gold" of big data precision marketing, and its commercial value is immeasurable on the Internet of everything. Minors are already part of the population. The Internet penetration rate among minors has reached 93.1 percent, and the number of underage Internet users has reached 175 million, according to the 2019 National Underage Internet Use Research Report. According to the Blue Book of Youth: Report on Internet Use of Chinese Minors (2020) released in September 2020, more than 80% of the devices used by minors to access the Internet are mobile phones, and the age of their first access to the Internet is mainly between 6 and 10 years old. It is a common phenomenon for minors to access the Internet at a young age. Minors are enjoying the benefits of the Internet, such as games, entertainment and online learning. At the same time, their personal information is being collected and used unknowingly. As a vulnerable group, minors are more likely to fall into privacy risks due to their particularity. The loss of data identity may lead to the infringement of multiple rights and interests such as reputation and personal safety. In this context, it is necessary to improve the legal protection of minors' personal information, so as to safeguard their personal dignity, personal safety and ensure their physical and mental healthy development.

4. Research status:

The system of guardian consent is easy to invent. Consent, the only legal reason for processing personal information, is already practiced in most countries around the world, but the consent system will never disappear. People in the digital age are often fatigued by the amount of information available. Especially, in order to avoid legal risks, Internet companies have designed the content of notification in sufficient detail. Guardians make decisions on behalf of minors, and the consent mechanism of guardians is often nominal. Some guardians allow minors to circumvent the age limit consciously or unconsciously. Recently a piece of news on the Internet has aroused the speculation that "someone else has replaced a person's face". Minors can borrow someone else's identity to register an account, avoiding the software's mandatory age requirements. Guardians, on the other hand, have to accept a large number of minors' personal information. Coupled with the marginal effect on psychological perception, protectors are less and less cautious about consent. On the other hand, it takes a huge amount of manpower and materials for a personal data processor to verify the identity of a protector through E-mail, manual phone calls, and facial recognition, and small Internet companies cannot afford it. In this case, the mechanism of guardian consent is easy to be invented and cannot truly protect the security of minors' personal information.

Some scholars believe that online groups of minors bring more development opportunities. For bad information leakage, Internet poisoning, Internet violence, privacy security and other network risks, to strengthen the control of digital security risks, with a clear digital security protection

of minors work and entry point absolutely can not be delayed.

5. Methods still missing:

We now want to focus on three issues. That is, there is no consolidation of legal documents, rough legal provisions, and the existing legal system has a blind spot. It is advocated that digital products should be clearly targeted in management, including raising the awareness of enterprises' main responsibility, strengthening the preliminary supervision of product design, and improving the product risk protection system. Emphasis should be placed on finding balance points in risk management and respecting the positive role of digital environment in the management process. To study and judge the starting point of the future development of digital security protection, countermeasures such as establishing a digital rights recognition mechanism, strengthening the construction of enterprise self-discipline, improving the digital literacy of minors, and establishing new digital social norms are proposed. Finally, in order to strengthen the digital security protection of minors, we should provide a risk management perspective under the basic logic of digital society. In today's homogeneous coexistence of electronic media and social life, teenagers in the new era must pay close attention to the danger of minors using digital security. The number of minors to clear the starting point and safety protection forces to strike on the current legal regulation system is not ventilated place, digital products in the process of clear sorting, watch control management rectification, digital advocate confirmation system establishment, strengthen the autonomy of enterprises to strengthen the construction, minors digital literacy, new digital social norms. The state, society, enterprises, occupation, determine through school, family and other fields of network security education system and digital risk prevention network, to create a pure, safe and healthy network environment for Chinese minors.

1.3. Summarize the compatibility between international commonalities and Chinese characteristics

To sum up, the protection of minors' personal data and privacy in the era of big data concerns the healthy growth of minors and sustainable social development, and is also one of the topics that can build consensus to the greatest extent in international cyberspace governance in recent years. How to better leverage the role of governments, international organizations, Internet companies, technical communities, non-governmental organizations and individual citizens, promote the improvement of relevant laws and policies and promote effective international cooperation still requires more in-depth study and exploration by all stakeholders. In particular, governments and Internet companies should make stronger commitments. Prompt international standards for the collection and use of children's online data.

2. Research Objectives and Main Contents of The Project

2.1. Research objectives

Create a harmonious new tomorrow for a better society.

2.2. Main Contents

1. Development status:

The main trends are clear: With the development of productivity, the consumption power of children and other minors is gradually improving. Through the use of big data

and other means, network operators provide personalized consumption content and marketing information everywhere. This behavior greatly affects the healthy life and economic life of minors who have not yet formed a complete mentality and values. It even affects the lives of guardians who spend time with minors.

2. Survey data:

At the same time, our survey found that by December 2020, the number of Internet users had reached 980 million, and the Internet penetration rate had reached 70.4 percent, among which 16.6 percent were under the age of 19. The minors we are familiar with are generally less than 10 years old when they first contact the Internet. More than 90% of them have been harassed by bad information when they surf the Internet. With the popularity of mobile terminals and the development of the Internet, this data is constantly being refreshed. When we open the news browsing interface, it is not difficult to find that a series of social problems have become common in the world of minors, such as getting caught in the loan crisis, being addicted to mobile games, spreading unhealthy information, wasting money and rewarding anchors. "The Internet is not an outlaw." Law comes from the social foundation. When the society changes greatly, how to deal with such changes and continue to play its due role has become a problem that must be considered.

For this reason, our group has launched a study on the legal protection of minors' personal data.

3. Special Highlights:

But why do we focus solely on the study of legal protection in the digital age, and what is the difference between it and the past that makes us interested in it? To understand this problem, we need to be clear about a concept: In the first half of 2020, the country's information security vulnerability sharing platform collected 11,073 security vulnerabilities in the information system, while in the same period of 2019, there were only 5,853 vulnerabilities, an astonishing 89.2% growth rate. Is one of the most typical data of information security changes of Chinese Internet in recent ten years. The number of data breaches increased globally from 2013 to 2018. Among them, data privacy leakage of minors occurs frequently, which seriously affects the personal safety of minors, family property security and social harmony and stability. It is obvious that the legal protection of minors' personal data security in the digital age is urgent.

4. Innovative Ideas:

The data privacy of minors is characterized by the diversification of the subject of infringement, the enlargement of the scope of infringement, the concealment of the means of infringement, and the difficulty of right relief. Once violations occur, the Internet quickly spreads them around the world and records them, causing damage that is hard to undo. This is also the dilemma between what we call "empowerment" and "security." Therefore, this paper takes the data privacy protection of minors as the research object, and there are six relatively novel points.

(1) Research focuses on special rights subjects. This paper combined with practical problems, taking minors as the main body, emphasizing the difference between minors' data privacy and traditional privacy and general data privacy, so special measures should be taken in the protection of rights. However, most domestic papers do not distinguish the subject of rights when discussing data privacy.

(2) Take protection measures as the research entry point. Research on data privacy is mostly problem-oriented,

analyzing the cause and harm of its leakage. The research on protection measures also mainly starts from the adjustment of laws and regulations, and fails to explore multiple approaches such as the cultivation of users' network literacy and the promotion of the overall social recognition of the rights and interests of minors and the value of data privacy, which obviously cannot meet the current demand for data privacy protection. This paper tries to put forward more realistic suggestions, taking into account the development of digital technology and privacy security protection, and discusses the protection measures of minors' data privacy in complex scenarios.

(3) Highlight the responsibility and role of mobile application platforms in protecting minors' online data. The protection of minors' data privacy is a systematic project involving many aspects such as law, technology and ethics. It requires the participation of multiple subjects such as families, schools, government agencies, enterprises and industries. Among them, mobile application platforms that provide network products or services are the most direct data privacy collection, transmission and users, and also the most direct and powerful protection of minors, which needs special emphasis. Platforms should pay more attention to protecting minors' data privacy is their due obligation.

(4) Put forward the idea of establishing the standard of indirect identification of minors' personal data. At present, domestic regulations on the age of minors' personal data protection are relatively vague, and the standard for the identification of minors' personal data is mainly direct identification. Personal data of minors is closely related to their age. The current mainstream identification standard is direct identification, while personal data of minors is very likely to be harmed by indirect identification. Therefore, the idea of indirect identification is put forward to improve the identification mechanism of personal data of minors.

(5) Improve the system of minors' personal data protection in combination with the national data industry strategy. The system improvement of minors' personal data protection is combined with the national data industry strategy to positively encourage the self-discipline of the industry and improve the supporting industry supervision system. At present, the protection of minors' personal data is still centered on the interests of minors. However, the protection of minors' personal data needs to consider the interests of minors, as well as the data industry and the national digital development strategy. Excessive protection will bring negative effects on industrial development. According to the characteristics and development rules of the industry, the integration of industrial development and information protection is an important direction for the protection of minors' personal data.

5. Research significance:

In the era of big data, the premise of surfing the Internet is to register personal data. Personal data is the "gold" of big data precision marketing, and its commercial value is immeasurable on the Internet of everything. According to various data, more than 80% of the devices used by minors to surf the Internet are mobile phones, and the age of their first access to the Internet is mainly between 6 and 10 years old. It is a common phenomenon for minors to access the Internet at a young age. The personal data of minors is also being collected and used unknowingly while they are enjoying the benefits of the Internet, such as games, entertainment and online learning. As a vulnerable group, minors are more likely

to fall into privacy risks due to their particularity. The loss of data identity may lead to the infringement of multiple rights and interests such as reputation and personal safety. In this context, it is necessary to improve the legal protection of minors' personal data, so as to safeguard their personal dignity, personal safety, and ensure their healthy physical and mental development.

References

- [1] Kathryn C Montgomery 1, Jeff Chester 2, Tijana Milosevic 3Children's Privacy in the Big Data Era: Research Opportunities.
- [2] Yolanda Linda Reid Chassiakos, Jenny Radesky, Dimitri Christakis, Megan A Moreno, Corinn Cross, COUNCIL ON COMMUNICATIONS AND MEDIAChildren and Adolescents and Digital Media.
- [3] Simon Yusuf Enoch, Jin B. Hong, Mengmeng Ge and Dong Seong Kim Composite Metrics for Network Security Analysis.
- [4] Ji Ping, Shen Xiniron, Jiang Zhensi, Problems faced by Online Protection of Minors in Foreign countries and countermeasures.
- [5] Wang Ping, Research on the Safe Use of Internet by Foreign Minors: Progress and Enlightenment.
- [6] XIE Keqin. Research on Legal Protection of Minors' Personal Information [D]. Shenyang Normal University, 2020.DOI:10.27328/d.cnki.gshsc.2020.000156.