EAI Issue Briefing

The 4IR and the Future of
the North Korean Police State

Ken Gause (Institute for Defense Analyses)

EAI
EAST ASIA INSTITUTE

The 4IR and the Future of the North Korean Police State

Ken Gause

Analyst and Senior Advisor of the North Korea Program, Institute for Defense Analyses

---

* Note: This paper does not represent original research, but attempts to highlight existing research into the Fourth Industrial Revolution and North Korea's embrace of high technology. See reference list for the sources on which this paper is based.

The term Fourth Industrial Revolution (4IR) has gained widespread acceptance as the overarching concept used to describe the impact of new technologies on various aspects of society in the early 21st century. Technologies such as Artificial Intelligence (AI), 5G networks, 3D printing, cloud computing, robotics, drones, VR, AR, IoT, genomics, biometrics, and blockchain are commonly associated with this revolution. The speed, scope, and profound influence of 4IR technological advancements are unprecedented in human history. This revolution is rapidly progressing and transforming nearly every industry globally, as well as all aspects of societal life (Watson 2020).

The technologies listed are often considered part of the current wave of emerging technologies that are expected to help human societies tackle global issues such as disease, poverty, and ignorance.

Despite its promise, there are also shadowy aspects of the Fourth Industrial Revolution. It is widely acknowledged that technology has the potential to foster human progress and advancement, but it also has the capability to exert control over individuals. In George Orwell's novel *1984*, the character Winston takes precautions to avoid detection by the telescreen in his home while writing in his diary out of fear of facing severe consequences. The concept of being monitored by a "Big Brother" figure is not a new one, yet in today's era

of the 4IR, this dystopian narrative may resonate with a sense of unease and familiarity. The rapid advancements in technology could pave the way for, or may already be facilitating, a form of surveillance and control reminiscent of totalitarian regimes seeping into the daily lives of certain nations.

In nations like China and Russia, we have witnessed widespread implementation of increasingly advanced surveillance systems in order to maintain control, monitor the activities of citizens, and suppress opposition and threats to their authority. These countries have also established an international model for the utilization of digital technologies for such purposes.

This paper will briefly examine how coercion, control, surveillance, and punishment by the North Korean Police State will change in the era of the Fourth Industrial Revolution and the AI revolution. Will new technologies make the Kim regime's control more effective, or will they enforce reforms and shifts in North Korean society? Will 4IR lead to transformation inside North Korea and create a pathway to reunification?

Ⅰ. North Korea's Police State

North Korea stands as one of the most extensively regulated and monitored nations globally. The government imposes numerous obligations on its citizens regarding their work and leisure activities, while also restricting their freedom to travel within their own country. Moreover, the state dictates the media outlets that individuals can access and suppresses their freedom of expression. Citizens live under the constant threat of arbitrary or targeted inspections, which may entail thorough searches of their residences or their personal belongings.

A significant portion of the nation's current surveillance infrastructure is dependent on a vast network of human intelligence collection and informants. This network includes individuals from state security agencies, law enforcement, workplace supervisors, and *inminban* leaders who monitor their communities. Some reports suggest that up to 1 in 20

North Koreans are involved in the established surveillance system. The extensive and intricate network has been utilized by the leadership and Korean Workers' Party (KWP) for many years, effectively maintaining control over citizens to the point where dissent is extremely rare (Gause 2012).

Nevertheless, the government does not have complete control. There are still gaps that enable North Koreans to participate in illegal business dealings, access foreign media, and voice private criticisms against the regime. Due to the state's failure to provide adequate support to its people, individuals who are caught breaking the law can frequently resort to offering bribes in order to avoid severe consequences.

II. 4IR and North Korea's Future

The North Korean government officially designated the 21st century as the era of information technology. North Korean leaders recognized that in order to achieve their goal of establishing a strong and prosperous nation, the integration of information technologies into the economy was essential. Throughout the years, the regime has promoted IT as a solution to various national challenges, such as predicting air pollution levels, improving readiness for droughts, monitoring hydro turbine vibrations, and most recently, utilizing Artificial Intelligence/Machine Learning (AI/ML) to combat the COVID-19 pandemic by developing a model for assessing proper mask usage and prioritizing clinical symptoms of infection. In April 2019, North Korea revised Article 26 of the Constitution to include "informatization" as a key component of its economic strategies, alongside principles of *Juche*-oriented, self-reliance, modernization, and scientization to realize a socialist independent national economy (Lee 2005).

Predictably, the government has experimented with aspects of the Fourth Industrial Revolution to tackle deficiencies in its authority. While North Korea navigated through the obstacles brought by COVID-19, it explored methods to regulate the flow of individuals within the regime. Concurrently, Kim Jong Un leveraged the pandemic to enhance domestic

security. Artificial Intelligence served as a tool to reinforce surveillance and authority over the citizens by utilizing versatile technology that could be justified as a measure to safeguard the population from a widespread illness (Williams and Slavney 2024).

In 2021, the North Korean government implemented facial recognition technology at major train stations in order to regulate the movement of individuals. These advanced devices were utilized to scan the faces of individuals passing through the gate, ensuring their identities were verified before boarding trains. The authorities believed that this implementation was a suitable measure to mitigate the risk of COVID-19 transmission while also effectively managing public transportation during a time when adhering to social distancing guidelines was of utmost importance. However, the regime was also cognizant of the security implications associated with this decision. As stated by a source from the Ministry of Social Security, this costly initiative was undertaken to prevent any potential malicious activities orchestrated by adversaries under the guise of an infectious disease (J. Kim 2024).

The regime's strategy toward digital transformation in North Korea resembles its approach to dealing with the influx of external information. Previously, the regime resorted to a direct and temporary solution of banning digitized media that was spreading throughout the country. However, this approach proved to be inefficient as it was impossible to completely isolate the nation and prevent the dissemination of technology like wireless computer networking, which could provide North Korean citizens with insights into their own world and the outside world. More recently, the regime has adjusted its approach by embracing technology and implementing it in a controlled manner. Under the guise of modernizing society and embracing the future, the regime has introduced cellular networks, smartphones, WIFI technology, and Internet Protocol Television, but with a unique twist. By utilizing tracking software, closed communication networks, constant monitoring, and widespread jamming, State Security has created potential avenues for remote surveillance on a large scale while also restricting access to undesirable content (Williams and Slavney 2024). Similar to their response to COVID, the regime has successfully portrayed the introduction of enhanced surveillance technology as a fundamental societal benefit.

Surveillance extends beyond just society; the government itself is under constant observation (Martyn and Slavney 2024). For instance, CCTVs are utilized to monitor security services more extensively in an effort to reduce corruption and enhance the effectiveness of surveillance. This dual surveillance approach acknowledges that there are gaps that cannot be eliminated. The current post-COVID crackdown requires efficiency and trust in the surveillance agents. Attempting to monitor everything is impractical. Therefore, ensuring that those conducting surveillance remain vigilant is cost-effective. While North Korea may not be able to completely shut down all technological loopholes, they can ensure that the existing systems function well and complement traditional human-centered security measures.

III. Can North Korea's Police State Fully Embrace the 4IR?

North Korea has a long history of involvement in various projects related to AI/ML technologies, dating back to the 1990s. These initiatives have primarily aimed at addressing nationwide challenges. In 2013, the country established the Artificial Intelligence Research Institute under the Bureau of the Information Industry Guidance to lead these efforts and explore commercial applications of 4IR technology. As of 2021, this institute has been incorporated into the Ministry of Information Industry (H. Kim 2024).

At the corporate level, North Korean companies have recently been actively promoting their commercial products that utilize AI/ML technologies. For instance, in 2020, the Mangyongdae Information Technology Corporation introduced two mobile phones, namely the Azalea 6 and 7 (Ibid.). These devices claim to incorporate advanced features such as fingerprint, voice, facial, and text recognition, all powered by deep neural networks (DNN). The company boasts a team of numerous researchers, primarily from prestigious institutions like Kim Il-sung University and Kim Chaek University of Technology. Currently, they are also engaged in fostering domestic technical collaboration with other research institutes (Ibid.). At first glance, it appears that the 4IR aligns with Kim Jong Un's vision for the future. However, when considering the future of the police state, it is uncertain whether the regime

is truly capable or willing to fully utilize the potential of the 4IR. On paper, the 4IR holds the promise of achieving an Orwellian state, but in reality, this may be too ambitious for North Korea, at least for now.

Despite a seemingly strong political determination to embrace the 4IR and the development of supporting infrastructure, North Korea faces various limiting factors. Some of these factors are related to the economy and structure, while others are connected to the leadership and security culture of the regime.

- North Korea possesses the beginnings of a 4IR surveillance system but lacks the ability to produce complex electronics. Consequently, it must depend on imports from nations like China, leading to financial challenges and potential export restrictions. As a result, North Korea cannot ensure the sustainability of its 4IR surveillance system. Reports indicate that facial recognition software used in train stations is not being replaced when it malfunctions (Adams 2024).

- North Korea faces challenges in implementing a technology-based surveillance system due to its limited interconnectivity and unreliable electricity supply, especially in remote areas. These limitations raise doubts about the country's ability to develop its own advanced technology capabilities, such as AI and CCTV, in the realm of the 4IR (Ibid.).

- If North Korea decides to adopt a hybrid approach, integrating some 4IR capabilities into its surveillance system, it could focus on monitoring the internal security apparatus to ensure its efficiency. However, this approach also presents complications. By subjecting the State Security to observation, it becomes harder for state security agents to engage in bribery and corruption, which they often rely on for their livelihoods (Ibid.). In other words, introducing 4IR into the internal security apparatus may unintentionally disrupt the existing culture that enables the system to function effectively. State Security agents may start collaborating to evade surveillance and continue their revenue-generating activities. What was once an individual pursuit could transform into a network that works against the regime's interests.

Ⅳ. Prospects for Transformation and Reunification

Although speculative, North Korea's treatment of the 4IR has implications beyond its attempts to bolster internal security. It provides insights into the limits North Korea and the Kim regime are willing to take to embrace the future. For a revolution of any kind, including an industrial one, to take hold and flourish, it must follow certain rules. It must be bottom-up, benefit from the local entrepreneurial spirit, and establish ties with the outside world. Attempts to hijack or enforce the revolution from above will lead to corruption, narrowing the organic benefits to the population and the country. In the case of North Korea, the 4IR comes into direct conflict with the overarching goals of the Kim regime, namely 1) regime survival and 2) perpetuation of Kim family rule. For over seven decades, these two goals have driven all decisions from foreign/security policy to domestic policy.

For Kim Jong Un, the 4IR is something to control and use sparingly. It is not meant to arise organically from the bottom up. Therefore, top-down employment of technology will be strategic but not transformative. It will not change the nature of the regime. And the notion of tying this revolution to the outside world is an anathema to Kim family rule. It would undermine the ideology that legitimizes the way North Korea is run and threaten the foundations of power. As a consequence, the more that North Korea embraces a top-down approach to the 4IR, the more it will try to wall itself off from the forces of outside influence and eventual reunification.

V. Conclusion

The Democratic People's Republic of Korea (DPRK or North Korea) is experiencing the gradual integration of the Fourth Industrial Revolution into various aspects of life, particularly in Pyongyang. The introduction of smartphones has enabled electronic payments, set-top boxes provide additional TV and streaming options, cameras monitor traffic in major cities, and electronic cards grant access to transportation. However, this digital

transformation comes with a cost: as these technologies become more prevalent, the digital footprint of North Korean citizens expands, allowing the North Korean state to gain greater insight into their lives.

Nevertheless, it remains uncertain whether North Korea can fully implement an extensive 4IR surveillance network similar to that of countries like China in the few remaining areas untouched by the regime. Economic and cultural factors are likely to limit the capabilities of North Korean State Security in the technological realm. It is probable that they will continue to adopt a hybrid approach, selectively deploying their more advanced capabilities while relying on their established human networks to maintain the functions of a police state.

Ultimately, this approach to the 4IR holds little promise of regime transformation. If anything, it will harden an already draconian internal security apparatus dedicated to keeping the outside world at bay and dimming hopes for reunification in the foreseeable future. ∎

References

Adams, Rose. 2024. "A glimpse into the future of surveillance technology in North Korea." *Daily NK*. May 20. https://www.dailynk.com/english/a-glimpse-into-the-future-of-surveillance-technology-in-north-korea/ (Accessed July 1, 2024)

Gause, Ken E. 2012. *Coercion, Control, Surveillance and Punishment: A Guide to North Korea's Internal Security Agencies*. Washington, DC: Committee for Human Rights in North Korea.

Kim, Hyuk. 2024. "North Korea's Artificial Intelligence Research: Trends and Potential Civilian and Military Applications." *38 North*. January 23. https://www.38north.org/2024/01/north-koreas-artificial-intelligence-research-trends-and-potential-civilian-and-military-applications/ (Accessed July 1, 2024)

Kim, Jeong Yoon. 2024. "N. Korea installed facial recognition devices at major train stations during height of COVID." *Daily NK*. April 19. https://www.dailynk.com/english/north-korea-installed-facial-recognition-devices-major-train-stations-during-height-covid/ (Accessed July 1, 2024)

Lee, Hyung-Seog. 2005. "Information Technology Progress in North Korea and Its Prospects." In *Bytes and Bullets: Information Technology Revolution and National Security on the Korean Peninsula*, ed. Alexandre Y. Mansourov, 100-122. Honolulu, HI: Asia-Pacific Center for Security Studies.

Watson, Virginia Bacay. 2020. "The Fourth Industrial Revolution and Its Discontents: Governance, Big Tech, and the Digitization of Geopolitics." In *Hindsight, Insight, Foresight: Thinking about Security in the Indo-Pacific*, ed. Alexander L. Vuving, 37-48. Honolulu, HI: Asia-Pacific Center for Security Studies.

Williams, Martyn, and Natalia Slavney. 2024. "Digital Surveillance in North Korea: Moving Toward a Panopticon State." *38 North*. https://www.38north.org/reports/2024/04/digital-surveillance-in-north-korea-moving-toward-a-digital-panopticon-state/ (Accessed July 1, 2024)

■ **Ken Gause** is an Analyst and Senior Advisor of the North Korea Program at the Institute for Defense Analyses (IDA).