SPECIAL REPORT

The Need for a New US Information Strategy for North Korea

By Nat Kretchun

Visitors use computers at the Sci-Tech Complex, a repository for digital information located on Ssuk Island in Pyongyang. (Photo by Franck Robichon/EPA/Shutterstock)

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Summary

- Since Kim Jong Un became its leader in 2011, North Korea has enacted an ambitious strategy to reestablish control of information flows into and within the country. The key to the strategy's success is leveraging the government's technological sophistication relative to that of citizens.

- The most significant advances have been at the device level. The regime's control over hardware and software has yielded perhaps the most complete national digital censorship and surveillance system in existence. The strategy seems well calibrated to complement the highly state-controlled economic mar-

ketization Pyongyang appears to be moving toward.

- The single caveat to this strategy is that it allows citizens to connect with one another directly—beyond state control—and could lead to greater nonstate economic and social coordination.

- Information operations could be an effective component of US strategy, but current efforts remain inadequate. Factual outside information is not reaching enough of the North Korean population and current dissemination strategies are not keeping pace with technological change. An effective strategy will take into account the changing

ways North Koreans receive information and consider what they might achieve with such information—such as establishing a shared sense of popular opinion or forming social or economic constituencies.

- US policy needs to be grounded in theories of change that factor in the changing economic, technological, and social conditions on the ground and seek to leverage or catalyze those changes. It needs to counter the censorship and surveillance components of North Korean network devices to open communication channels and allow greater circulation of information within the country.

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ABOUT THE REPORT

Drawing on relevant literature, analysis of North Korean media and information control techniques, and interviews with refugees and defectors, this report argues that a new US information strategy is needed to alleviate the social isolation of the North Korean people and improve their long-term welfare. The report was supported by USIP's Asia Center.

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A man uses his mobile phone in downtown Pyongyang. (Photo by Damir Sagolj/Reuters)

Information Control in North Korea

In 2018, much of the world watched and debated a series of historic firsts—the first time a North Korean leader set foot on South Korean soil, the first time a North Korean leader met with a sitting US president. Ordinary North Koreans, however, were not engaging in parallel debate and discussion. They would learn about these events from carefully crafted state media reports days after they happened.[1] Official North Korean reports of summitry were accompanied domestically by crackdowns on antisocialist elements, a broad term embracing discussion of anything ideologically heterodox.[2] Far from coincidental, these crackdowns were part of message support to ensure that no alternative, unofficial narratives about Kim Jong Un's activities abroad existed to propagate. Despite the recent symbolic firsts of the North Korean leadership, one thing remains constant: comment from the North Korean public is not invited.

How and why does this matter to US policy? A nuclear North Korea dramatically increases the possibility of intentional or accidental use of nuclear weapons in one of the most densely populated areas of the world. As such, North Korea has been among the most persistent and most high stakes of all US foreign policy challenges, in which every tool at policymakers' disposal must be fully leveraged. Yet, in part because the country is relatively inaccessible and the impact of information access is not immediate, the United States has invested too little energy and strategic planning in a well-tailored information strategy, thereby ceding near-complete control of the North Korean information space to the Kim government. By recognizing opportunities in

economic, social, and technological changes occurring inside North Korea, a well-conceived and well-executed information strategy could complicate the North Korean government's strategic use of social isolation, allowing the North Korean people to connect with one another and the outside world, and exercise greater agency in determining their country's priorities and direction.

BACKGROUND

What was visible to close observers of official North Korean media around the summits is only a small part of a systematic effort at domestic information control that has a long history in the country. Kim Il Sung's postwar North Korea was extremely cut off from outside influence, even compared with other socialist states of the era. Because radio broadcasts and leaflets were the only readily available way to disseminate outside information, it was relatively easy for the Kim Il Sung government to maintain complete control of the internal information space. When the famine of the mid-1990s hobbled the economy and surveillance state, information and media flowed into and within North Korea at unprecedented levels, not only news from China but also a plethora of new content that included South Korean soap operas and films.[3]

By the time the outside world was making initial attempts to estimate the depth and breadth of this penetration, all indications were that most North Koreans had already been directly exposed to some form of outside information.[4] Radio broadcasts from a host of stations supported by nongovernmental organizations that targeted North Korea added to the reach of established media such as Voice of America (VOA) and Radio Free Asia (RFA). Popular South Korean entertainment media circulated over increasingly established supply chains and was consumed on a progressively more complex and modern array of digital devices that included DVD players, USB flash drives, laptops, and even some of North Korea's first legal mobile phones. After Kim Il Sung's death in 1994, during the seventeen-year reign of his son and successor, Kim Jong Il, a trend toward greater, more socially normalized consumption of outside information continued.
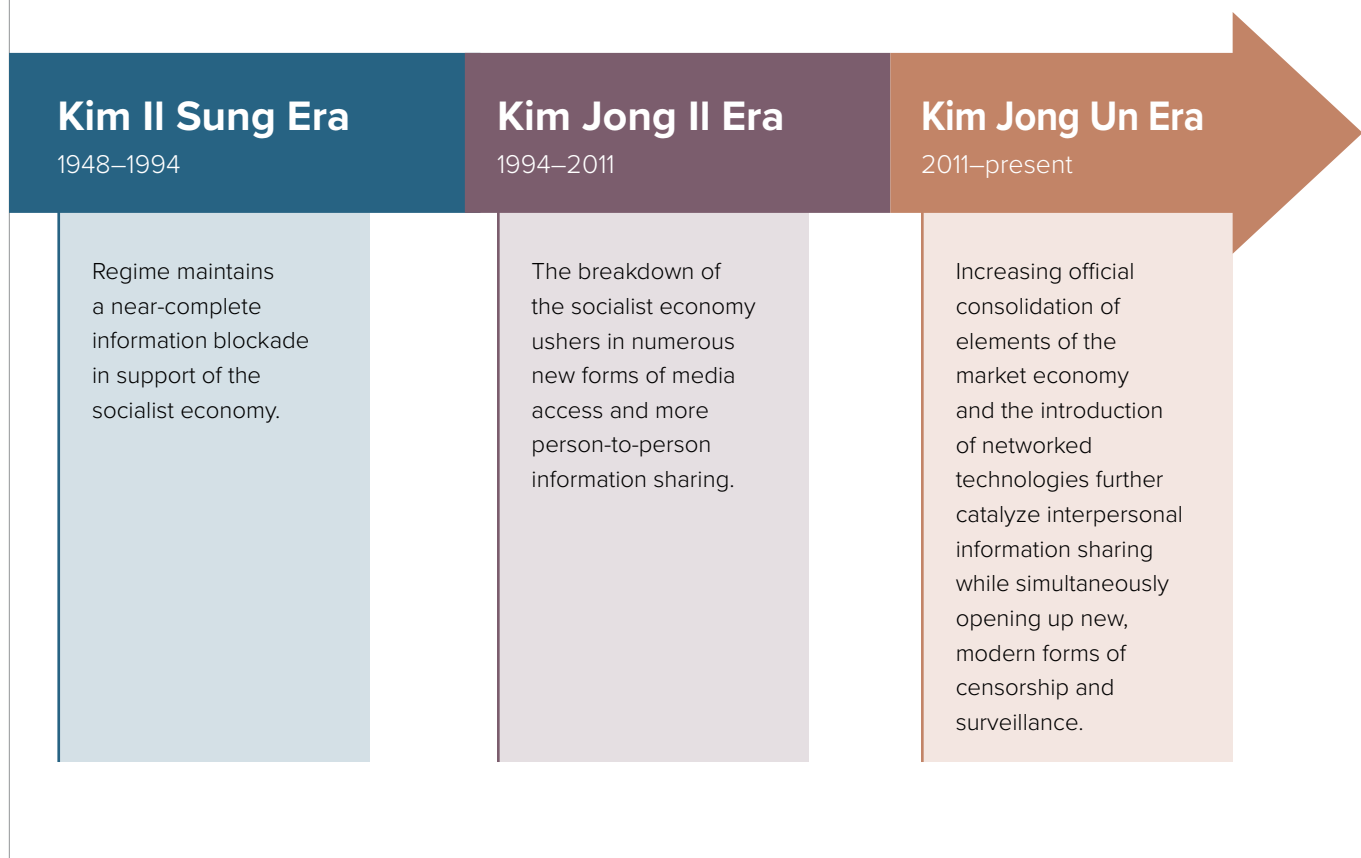
However, as North Korea watchers began to theorize about the ramifications of a more exposed and informed North Korean citizenry, North Korean authorities, having regained some measure of economic stability after the collapse of the socialist economy, began taking steps to reestablish control over information flows.

New Controls for a New Economy

North Korea's emerging information control strategy can only be fully understood in the context of contemporary economic realities. Several apparent truths help link and explain the design and implementation of new forms of information control. For example, although many vestiges of the socialist economy remain, the government appears focused on formalizing and controlling the market activity that emerged in the wake of the famine period. This is not strictly because authorities are unable to roll back markets but rather because they have made a calculated decision not to attempt to return to the old socialist economy. Further, Kim Jong Un appears to be staking some of his reputation, if not implicit legitimacy, on improving the economic fortunes of his citizens. Thus, information controls should not be considered in isolation but instead in light

FIGURE 1.

Evolution of North Korea's Information Environment

Kim Il Sung Era 1948–1994	**Kim Jong Il Era** 1994–2011	**Kim Jong Un Era** 2011–present
Regime maintains a near-complete information blockade in support of the socialist economy.	The breakdown of the socialist economy ushers in numerous new forms of media access and more person-to-person information sharing.	Increasing official consolidation of elements of the market economy and the introduction of networked technologies further catalyze interpersonal information sharing while simultaneously opening up new, modern forms of censorship and surveillance.

of how they facilitate and interact with the state's domestic economic development plans and prevailing economic realities.

From Kim Jong Un's initial announcement in March 2013 of the *byungjin* policy—simultaneous nuclear and economic development—to his proclamation in April 2018 that the goals of byungjin had been sufficiently realized, such that focus on the development of North Korea's socialist economy would be even greater, he has placed ever higher personal stakes on economic development.[5] "Within just five years," the economist Rüdiger Frank has noted, "North Korea went from 'all for the military' to 'all for the economy' approach."[6]

Economic transformation is not limited to high-level pronouncements. Propaganda lines related to the economy shift and legality can be a slippery concept in North Korea, but changes in the realities of economic life are nonetheless occurring at an appreciable pace. Tangible transformation can be seen in agricultural reforms on the individual farm level, in emergent private property markets, and in newly available forms of digital banking and payments.[7] These changes and many more are occurring with differing official coordination and motivations. Although change should not be misconstrued as an attempt to alter the basic feature of a system in which the economy exists to reinforce the rule of those in power, signs of economic change in some form are evident to most North Koreans.

Pyongyang, North Korea. (Photo by Omer Serkan Bakir/iStock)

Examining economic change in practice, it seems clear that the North Korean authorities recognize that undermining the basic functioning of the market economy is not in their best interest. They are instead attempting to identify ways to monitor, regulate, and control the market without compromising its vital outcomes. They are not attempting to recreate Kim Il Sung's socialist economy—a hard-learned lesson. The revaluation of the won in 2009—an antiquated and heavy-handed attempt to curb inflation and discourage black market trading—caused the savings of many in North Korea's burgeoning entrepreneurial class to be wiped away overnight.[8] It was also clearly a matter of state overreach that resulted in appreciable citizen backlash and led to a rare apology from the North Korean government, which included scapegoating an unfortunate official.[9] Since then, efforts to increase state control over market activity have been more incremental and phased. Tightened border controls and an increase in business visas to China have resulted in less small-scale, unofficial trade and smuggling and have advantaged larger players, which can be more easily monitored and are better tied in with the government.[10] More permissive official market regulations on digital payment platforms and the growing need for credit are both ways that authorities channel microeconomic activity along state-controlled channels less disruptively.[11]

These developments may seem unremarkable given examples of successful transitions from socialist to market economies in Vietnam and neighboring China. However, it is important to see this not as an inevitability but instead as a set of strategic choices the North Korean authorities have made deliberatively and in light of which many other policies—including information control—must be constructed and coordinated.[12]

The kind of information control regime that proved successful under Kim Il Sung's functioning socialist economy would be unworkable in the context of today's far more marketized one. A primary feature of pre–famine era information controls was individual isolation. Economic and social life was designed to ensure that all substantive interactions outside the immediate family were routed along state lines of control through workplace, residence, or other official affiliations. This was to ensure that little coordination could occur or trust be established in ways not easily monitored by the authorities.

However effective it once was, this form of control is antithetical to the basic requirements of a functioning market economy, in which producers and suppliers and buyers and sellers must

constantly coordinate with one another. It is simply unworkable to route all interactions in a market economy through the state directly. The authorities have recognized as much.

What then does an information control regime look like that focuses as aggressively as possible on censorship and surveillance while accommodating the essentials of a market economy? In the North Korean implementation, it is a patchwork of automated technical censorship, specialized human surveillance, and evocations of ideology and punishments that encourages self-censorship and promotes risk aversion. It is deployed at multiple levels within the country and is completely cut off from global information infrastructure. It is based in large part on the state's far greater technological sophistication relative to that of average citizens and relies on moving away from legacy broadcast and non-networked digital devices, such as radios and DVD players, and toward technologies that are connected to state networks, over which the government has complete control. It also involves a number of strategic trade-offs, chiefly the ability of individual citizens to connect with one another using modern communication devices.

> What does an information control regime look like that focuses as aggressively as possible on censorship and surveillance while accommodating the essentials of a market economy? In North Korea, it is a patchwork of automated technical censorship, specialized human surveillance, and evocations of ideology and punishments that encourages self-censorship.

Uniquely North Korean Controls

North Korean information controls once relied almost entirely on human surveillance. A more market-based economic structure, however, cannot support a mass mobilization human surveillance model in which citizens are expected to police each other and report infractions to the authorities.[13] In the post-famine era, citizens no longer had incentives to report on one another because everyone had to turn to forbidden activities to survive and the state no longer had credible ways to reward those who did report. Similarly, security personnel benefited far more from taking a bribe to overlook an ideological infraction than from performing their duties.

A more professionalized, motivated, and specialized security force—exemplified by Group 109—is how authorities attempt to enforce restrictions on ideological infractions such as illegal media consumption or other unwanted flows of information.[14] Group 109 and similarly tasked special groups are made up of members of multiple security services and often conduct inspections and surveillance in unfamiliar localities that discourage members from forming relationships with those they monitor. Recent defector reports, for example, suggest that the presence of Group 109 has made it far more difficult to bribe one's way out of trouble.

Technology is enhancing North Korea's human surveillance practices as well. Features on domestic mobile phones—the app Traceviewer in particular—take periodic screenshots of a user's phone that cannot be deleted, making it easy for a security officer inspecting a phone to look for signs of inappropriate phone use even if a user has since deleted or concealed the offending content. Although notable network-level controls are applied to cellular calling and data services

Students use computers in the Grand People's Study Hall, the central library in downtown Pyongyang. (Photo by Goddard Photography/iStock)

and include no international calling ability, and only a narrow and prescribed set of functions is available over 3G data services, the most important factor is the near dearth of internet service.[15] Rather than erecting complex firewalls to restrict what citizens have access to online, North Korea simply prevents them from connecting. The few internet connections available—aside from the relatively unrestricted access that a handful of high-level elites enjoy—are accessed only as part of school or work and are closely monitored for any activity authorities might deem inappropriate.[16]

North Korea's greatest information control innovation is at the device level. At the top of the design priority list for handsets and mobile operating systems, therefore, are censorship and surveillance capabilities. In addition to a host of uniquely designed surveillance functions, some software programs included in North Korea's version of the Android operating system automatically block and delete all files and applications not approved by the government. This, combined with the ability of the authorities to mandate that citizens use only domestic handsets that run North Korea's customized Android operating system, makes it nearly impossible for anything the government has not specifically approved to spread by mobile phone.

In aggregate, North Korea's digital network and device controls have been designed to function on a strict whitelisting principle unique even among digitally advanced authoritarian states.

Rather than attempting to block objectionable content, as the Chinese government strives to do via the Great Firewall, North Korean authorities have locked the system to all content except what the government pre-approves. As a result, authorities have been able to introduce modern communications technologies that are vital to the functioning of a market economy in a way that actually increases their ability to monitor and limit the flow of media within the country.

The single notable caveat to this impressively designed censorship and surveillance system is that, even in North Korea, mobile phones are still phones and present the potential for citizens to connect and coordinate like never before. The biggest strategic trade-off inherent in the strategy appears to be abandoning the focus on individual isolation. Although giving citizens the ability to call and text one another may seem like a small sacrifice to make for the censorship and surveillance capabilities that mobile phones enable, implicit endorsement of individual-level communication and coordination is among the most fundamental changes to the nature of North Korean society since the rise of a more market-based economy. The ultimate effects of this development in the medium to long term are impossible to predict with certainty.

EFFECTS OF EXPOSURE TO OUTSIDE INFORMATION

Despite individual evidence and emerging social dynamics suggesting that providing North Korean citizens with greater access to information has the potential for impact, challenges to providing such access are among the most daunting in the world.

When considering US policy toward North Korea, the information component of the overall DIME framework—a security studies acronym for diplomatic, information, military, and economic, that is, the varying instruments of national power projection—has received comparatively less attention from policymakers. This is not entirely surprising given that the way in which impact might be achieved through information operations is somewhat less clear than through other instruments of national power in the North Korean case. Recent summits and other high-level meetings demonstrate a renewed focus on diplomacy, ongoing smaller military drills with South Korea demonstrate deterrence capabilities and ensure readiness for the possibility of military action, and the Trump administration's "maximum pressure" campaign was built around sanctions and economic pressure. In addition, despite some official calls for greater US focus on information flows into North Korea, this most recent period of US attention on North Korea has seen relatively little change from the US information strategy's baseline.[17] This is most likely the result of an inability to understand how information could produce any meaningful effects in North Korea combined with the inherent difficulty of targeting information campaigns at North Korea and a desire for short-term successes.

US information strategy regarding North Korea at present leans extremely heavily on US international broadcasters, VOA and RFA. These are available to those inside the country across multiple frequencies throughout the night and morning hours and are the only nationally available source of real-time news and information specifically targeting North Korean audiences. Beyond

broadcasts affiliated with the US Agency for Global Media, funding for civil society organizations working on freedom of information efforts—from attempts to send information into North Korea in digital formats on USB sticks to defector-run radio broadcasts and content development—has been provided by grants from the State Department, the National Endowment for Democracy, and others. In addition, the US military sought to influence North Korean populations using similar methods, including loudspeaker broadcasts along the demilitarized zone (DMZ), which are often turned on during periods of heightened tensions. Although the range of such broadcasts is quite limited and their reach is primarily among forward-deployed troops, they have elicited strong reactions from North Korean authorities. The broadcasts evolve continually in terms of content and presentation, and materials sent in on USB drives are generally better curated for the intended audiences, but broader US information strategy has yet to adapt in light of North Korea's new digital network strategy.

It should come as no surprise that North Koreans' beliefs are highly shaped by the information they consume. It is equally important to dispel the myth that they are simply brainwashed or that domestic propaganda is so potent that North Koreans are incapable of evolving their understanding of the world.

As evidenced by the extent of strategic thought and economic resources North Korean authorities are investing into domestic information controls, they clearly believe that maintaining tight control of the types of information North Korean citizens have access to is vital to their efforts to manage their citizens. However, those outside are often skeptical whether it is possible for outside information to have any meaningful effect on North Korean citizens given the level of domestic propaganda they are exposed to. Further, even if exposure to outside media and messages does have the ability to influence the way North Korean citizens think, the common understanding is that public opinion matters little to the North Korean leadership and thus influencing North Korean citizens is unlikely to have any effect on the policy direction of the leadership. Let's look at these each in turn.

The period of post-famine information opening dispelled a number of theories about the potential effects of information exposure on North Korean citizens. For instance, it became clear that the notion that knowledge of a free and economically prosperous South Korea, in which North Koreans immediately became citizens on arrival, would induce North Koreans to "vote with their feet" was too simplistic. Were the theory sound, a mass exodus would have long ago occurred, as most of the North Korean population is at this point aware of South Korea's economic prosperity. The risks associated with fleeing, coupled with the difficulty of leaving behind everything one has ever known to set off for somewhere wholly foreign, constitute massive barriers to change and prevent the vast majority of North Koreans from acting in such a drastic way on what they learn through outside media exposure.

That said, below the level of such life-altering action, it is possible to robustly demonstrate that exposure to outside information has an appreciable effect on the beliefs and attitudes of North Korean citizens. In quantitative comparisons, North Koreans who were more exposed to outside information had significantly more favorable views of South Korea and the United States, and were more likely to engage in discussion on sensitive topics.[18] Research limitations prevent establishing causality, but correlative evidence is strong that influence is not only possible but also

A man speaks on his mobile phone near the April 25 House of Culture, a theatre and arts venue in Pyongyang. (Photo by Damir Sagolj/Reuters)

highly likely if North Koreans are able to consume a diverse array of information. And though it should come as no surprise that North Koreans' beliefs, like those of most people, are highly shaped by the information they consume, it is equally important to dispel the myth that they are simply brainwashed or that domestic propaganda is so potent that North Koreans are incapable of evolving their understanding of the world.

In regard to whether public opinion can meaningfully influence the direction of high-level policy, the answer is somewhat more complicated. Pyongyang has traditionally been less concerned with reacting to public opinion than even most other highly authoritarian states, in large part because no competing power centers or organizational schema operated outside those controlled by the state. Rather than trying to manage public opinion once it had solidified, North Korean authorities engineered a system in which it was very difficult for shared public sentiment, other than that licensed by official media and directives, to form in the first place. In an earlier era, a North Korean with heterodox views would have not been able to safely share those views with others (except perhaps a few close friends and family) without fear of detection and punishment, and no institutions outside of the party state, such as the church or civil society organizations, offered public critiques of the government position. However, the trade-off—allowing

citizens to connect with one another and moving away from a social control strategy of individual isolation—suggests that public opinion may be a greater management challenge for the regime than it was when the system was designed to preempt it from forming in the first place. More shared awareness coupled with modern communications technologies mean that constituencies can more easily form around salient issues and, if the constituencies are large enough and their demands sufficiently apolitical, advocate for change.

An important factor in each of these cases, however, is that these dynamics have significant gestation periods. Most North Koreans encounter a significant cognitive dissonance on a daily basis in the mismatch between the way in which official media presents the system they live in as functioning and the reality of how it functions in practice. It should therefore come as no surprise that North Koreans who are exposed to outside information are often able to compartmentalize conflicting narratives. It is commonly only over a significant period of exposure that beliefs and attitudes change.[19] Similarly, although changes in the nature of the economy and information controls are opening up the potential for greater state-society negotiation relative to the command economy, a greater popular influence on North Korean policymaking is likely to be a long, slow process.

Need for a Coherent US Strategy

In the wake of the second Trump-Kim summit, in Hanoi in February 2019, the future of diplomatic efforts is again uncertain. Chinese and other third-party cooperation in the maximum-pressure campaign weakened after North Korea paused weapons testing and reengaged with the international community, and military options remain solutions of last resort that are sure to have devastating consequences.[20] That is, no good US policy solutions to dealing with North Korea are standalone. From an information perspective, factual outside information and US messaging are not reaching enough of the North Korean population. Further, the ways in which outside information is delivered to North Korean audiences has not evolved. Last, little preparation in response to North Korea's evolving efforts to control information flows is apparent.

A serious, coordinated assessment of how information might help advance US long-term interests vis-à-vis North Korea, in light of what we are learning about North Korea's new information control strategy, is long overdue. Furthermore, a US strategy that focuses solely on directly pressuring or courting high-level government decision makers and does not factor in the agency of the North Korean people misses a vital piece of the puzzle. Beyond the specific aims that a well-conceived information strategy might be pursuing at any given time, opportunities to catalyze the evolving ways in which information in North Korea flows between citizens and the types of media content available to them are numerous and could point the way to empowering citizens to take on an active, informed, and coordinated role in shaping their country's future. In assessing how the United States and its allies might revamp an information strategy, considering both the why and the how is essential.

Several reasons to think that strategic investment in information operations might be worthwhile at this point are compelling. Although by no means a silver bullet or a quick fix, alternative, nonstate endorsed information does have an appreciable effect on North Koreans who are

exposed to it, leading them to look favorably on the United States and South Korea and inspiring them to consider alternative models of social organization and government effectiveness. In combination with North Korean citizens' increasing ability to connect with one another by phone, effective information operations could help catalyze the social and economic changes already underway and encourage the formation of a proto-civil society. Realizing a more broadly informed, less ideologically narrow, and better coordinated North Korean citizenry could also set the groundwork for efforts to engage citizens directly, which could be vital in scenarios ranging from diplomatic progress to military contingencies to humanitarian assistance. Other reasons to consider a greater focus on information strategy in North Korea are also important:

> North Korea remains an outlier for its population's lack of access to basic facts about the outside world and their own country. US policy commitment to freedom of information is core to the conceptualization of US values into action and an important component of US soft power.

It complicates life for the North Korean leadership by forcing greater domestic accountability. Government control over the population is incredibly high, but so are its resource constraints. North Korea is attempting to establish the credibility of its nuclear deterrent and promote the normalization of its nuclear status while engaging in a diplomatic outreach campaign. At the same time, it is guiding the domestic economy through significant changes and establishing new systems of social and information control. The more time and resource consuming it is for the authorities to manage the stability, mood, and ultimately loyalty of its population, the more complicated the overall calculus becomes.

It is consistent with fundamental US values. North Korea is only one, albeit very egregious, example of a country in which a new class of draconian information controls is on the rise. Rather than globally connected citizens exchanging information freely, we see instead an increasing balkanization of global networks. This phenomenon is perhaps best illustrated in China, where most young people have little concept of what the internet outside the firewall looks like.[21] Yet North Korea remains an outlier for its population's lack of access to basic facts about the outside world and their own country and their near lack of access to even a censored internet. US policy commitment to freedom of information is core to the conceptualization of US values into action and an important component of US soft power that should not be downplayed.

Periods of flux provide unique opportunities. As discussed, it generally takes time for information strategies to bear fruit, so looking ahead is vital. The imminent threat will always take precedence. Yet, if history is any guide, the challenges North Korea presents are not likely to be resolved overnight. As many long-held truths about North Korea are being questioned, opportunities exist to establish new norms and status quos in regard to what North Korea sees as provocative or an action that merits a response. Although Pyongyang bristles when loudspeakers along the DMZ are turned on, it rarely takes special umbrage at US radio broadcasts such as VOA and RFA, even though these undoubtedly have a greater effect by providing information that helps North Koreans conceptualize alternative political and social realities and presenting comparisons with the rest of the world that counter domestic propaganda narratives. Because international radio broadcasts targeting North Korea are largely an accepted part of the status

quo, they are able to operate year in and year out cultivating audiences. Using periods of flux to establish new norms can lay the groundwork for long-term information exposure effects and help overcome the imminent threats priority. If the United States were able, for instance, to begin broadcasting targeted TV content into North Korea, it is entirely possible that the practice could continue even after a stable status quo is established, and the effects of TV broadcasts—that is, an informed populace more inclined to taking an active and coordinated civic role—could then be realized over years of routine broadcasting.

Elements of a US Strategy

Even if the motivations for a revamped US information strategy to North Korea are clear, as the technical sophistication and strategic soundness of North Korea's emerging digital information control strategy suggests, finding ways to reach North Korean audiences with information is no small task. By leveraging legacy and emerging technologies and focusing on information as a policy tool, the United States would help citizens avoid the most pernicious elements of state censorship and surveillance on their networked devices, opening up those technologies to a far greater range of uses not sanctioned by the authorities, and simultaneously exploring avenues to increase the availability of targeted, objective content via broadcast and person-to-person channels. In combination, this would provide access to a range of unsanctioned content as well as more modern methods to share and discuss it.

To implement such an ambitious information strategy, the United States will need to work on several fronts, leveraging cutting-edge and legacy technologies, enlisting the diplomatic support and understanding of international partners, and finding ways to foster the technical skills among North Koreans themselves that will enable them to circumvent the digital restrictions placed on them:

Understand how to undermine digital information controls. The outlines of North Korea's digital information control strategy are becoming increasingly clear. Yet we still have only a rudimentary understanding of how these technologies are actually being designed. Ongoing, nuanced analyses of technical implementations of software- and hardware-based information controls are the prerequisite to designing both technical solutions and awareness and advocacy efforts. A more systematic study of how North Korea is realizing its information control strategy is vital to almost any conceivable effort to combat Pyongyang's increasingly sophisticated control implementations. The goal of such investigations is ultimately to discover ways that censorship and surveillance features can be undermined or avoided by those subject to them.

Continue to leverage the potential of legacy technologies. As North Korean authorities attempt to substitute more modern networked technologies (which offer far greater remote control), older legacy broadcast technologies (radio and TV) and non-networked digital technologies (DVD players and USB drives) remain in wide use and are more difficult for the government to control. Although it is unrealistic to attempt to turn back the clock on the advance of new technologies, the United States can ensure that legacy technologies provide the greatest possible impact, whether by prioritizing physical distribution of targeted evergreen content (on, for

Foreign reporters and their government guides follow the address by North Korean leader Kim Jong Un to the Workers' Party of Korea congress, at a hotel in central Pyongyang on May 8, 2016. (Photo by Damir Sagolj/Reuters)

example, USB or SD cards), continuing to improve the quality of international radio broadcasts, tailoring content and strategies for different segments of the population, or seriously exploring television distribution channels.[22]

Insist in multilateral forums that access to information is a fundamental human right. Concerted efforts to highlight human rights abuses in high-level multilateral settings—most notably the United Nations Commission of Inquiry Report—have prompted some response from North Korean authorities. Spotlights on abuses and principled criticism are unlikely to meaningfully unwind digital information control. International scrutiny, however, can limit some of the most egregious visible abuses in North Korea's efforts to deny accusations or create a counternarrative. This also dovetails nicely with broader US support for freedom of expression.[23]

Emphasize to South Korea that US information strategy is an important complement to South Korea's diplomatic strategy. A combined forces command between the US and the South Korean military helps to ensure well-coordinated military action should the need arise. However, close US–South Korea cooperation on the information front is far less evident. Although the administration of President Moon Jae-in is understandably worried about factors that could scuttle its current efforts at diplomacy, South Korean cooperation in US information

strategy could facilitate a wider range of content delivery options and ultimately support rather than confound South Korean diplomatic efforts. It is a missed opportunity if South Korea does not attempt to inform the North Korean citizens of its intentions and perspectives and thereby completely cedes message control to the North Korean government.

Encourage and leverage human exchanges and interactions. North Korea's information control strategy relies on the state's monopoly over computer science skills and the closed nature of its digital ecosystem. Absent access to the internet, North Koreans not trained in the state system effectively have no way to learn the basic skills that would allow them to understand and circumvent digital information controls. Finding ways to teach such skills outside state lines of control is key to seeding a nascent hacker culture inside the country that would allow citizens to challenge some of the technological restrictions put in place by their government.[24] Moreover, the North Korean digital ecosystem is not meant to interface with the outside world. Assuming greater engagement, in which humanitarian aid workers and those with potential business interests coordinate with North Korean counterparts, opportunities are numerous to leverage the need for communication and access between parties to help introduce greater flexibility into some of the automated censorship and surveillance features.

Finally, research indicates that, far beyond viewing media content, the form of exposure with the most impact is travel and personal interaction. Creating responsibly structured opportunities for more North Koreans to directly experience other societies and political arrangements remains an underleveraged vector for change.

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12. Carlin, "Kim Jong Un's New Strategic Line."

13. In the aftermath of the famine, the human surveillance system was degraded as both security officers and private citizens had greater incentives to take bribes rather than report infractions.

14. Nat Kretchun, Seamus Tuohy, and Catherine Lee, "*Compromising Connectivity: Information Dynamics between the State and Society in a Digitizing North Korea* (Washington, DC: InterMedia, March 2017), www.intermedia.org/wp-content/uploads/2017/02/Compromising-Connectivity-Final-Report_Soft-Copy.pdf.

15. Florian Grunow, Niklaus Schiess, and Manuel Lubetzki first publicly revealed the existence of the Traceviewer function in a talk at the hacker collective Chaos Computer Club on December 27, 2016. See "Woolim—Lifting the Fog on DPRK's Latest Tablet PC," https://media.ccc.de/v/33c3-8143-woolim_lifting_the_fog_on_dprk_s_latest_tablet_pc.

16. A former Korea Computer Center employee described the complex process of approvals necessary for downloading materials from the internet as a software developer for the state, as well as the extremely robust human surveillance they faced when online for work.

17. See, for instance, this proposed amendment to the 2004 North Korea Human Rights Act (www.govtrack.us/congress/bills/114/hr4501/text).

18. Kretchun and Kim, *A Quiet Opening*.

19. Qualitative interviews conducted by the author with North Korean defectors support the finding implied in *A Quiet Opening* that not only does the depth of exposure to outside information matter but also the length of the period of exposure.

20. David Brunnstrom, "China Appears to Relax North Korea Sanctions: Report to U.S. Congress," Reuters, November 14, 2018, www.reuters.com/article/us-northkorea-usa-congress/china-appears-to-relax-north-korea-sanctions-report-to-u-s-congress-idUSKCN1NJ387.

21. Bang Xiao, "'I Don't Know Facebook or Twitter': China's Great Firewall Generation Z Cut off from the West," ABC, November 10,

2018, https://mobile.abc.net.au/news/2018-11-10/chinas-great-firewall-generation-who-dont-know-facebook/10479098.

22. As new North Korean information controls restrict the overall amount and forms of outside information getting in, it is imperative that the information that does get in is high quality and both accessible and relevant to audiences inside the country. Furthermore, while it is possible to broadcast terrestrial television into North Korea, the only transmitters within range are Chinese (on which there is no chance for placement of anything except government-sanctioned content) and South Korean (which do not broadcast any content produced with North Korean audiences in mind).

23. Interestingly, some move in this direction seems to have begun. As of December 2018, the US Department of the Treasury's Office of Foreign Assets Control added both individuals and groups to the North Korean sanctions list for systematic denial of access to information. See US Department of the Treasury, "Treasury Sanctions North Korean Officials and Entities in Response to the Regime's Serious Human Rights Abuses and Censorship," press release, December 10, 2018, https://home.treasury.gov/news/press-releases/sm568.

24. North Koreans have a long history of undermining more rudimentary state information controls. There is ample reason to believe that with the necessary skills North Korean citizens would do the same for newer digital information controls.

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