



CHAPTER 18

**“Digital Divide”
Between North and South Korea:
Obstacles and Incentives for
IT Sector Cooperation**

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The issue of how to overcome the national division between contending North and South Korean governments has been a preeminent concern of Koreans North and South for over fifty years.¹⁶³ The struggle for national legitimacy under the mantle of Korean reunification has been an overarching source of conflict and division for decades, and only now seems to be dying as the economic gap between the North’s outdated and broken socialist system and the South’s globalizing and economically integrated system continues to grow. In some respects, it seems logical that the ongoing concern with national division might naturally extend to the “digital divide.” Although the term was certainly not coined with Korea’s national division in mind,

¹⁶³ The opinions expressed in this chapter are the views of the author and may not reflect the views of The Asia Foundation. For questions or comments, please contact Scott Snyder at ssnyder@tafko.or.kr, or SnyderSA@aol.com. I would like to thank Eun Jung Cahill Che and Chun Sang Moon of The Asia Foundation’s Korea office for their research assistance in writing this chapter.

it is an apt vehicle for describing and assessing the continuing state of division on the Korean peninsula.

Digital divisions are of course just one more measure of how different the two systems of North and South Korea have become, and of the extent of the challenges that are likely to accompany any rehabilitation of North Korea or reintegration of the North with the South. Given the strategic importance of IT as a source of national power and as a prerequisite for extending the organizational and institutional capacity of the state and its people, an examination of the challenges that must be dealt with in overcoming divisions between the respective IT sectors in North and South Korea might be particularly salient in understanding the broader challenges inherent in inter-Korean reconciliation after decades as each other's "main enemy."

This may be particularly so at this moment, as an examination of the "digital divide" between North and South neatly combines two areas in which the Kim Dae Jung administration has sought to achieve its greatest accomplishments: the Sunshine Policy and making South Korea a leader in the IT sector by promoting the penetration of IT applications to all levels of South Korean society. Kim Dae Jung seems to abhor in equal measure national and digital divisions, and some close advisors even suggest that Kim Dae Jung's next great effort in the post-presidential phase of his career may be to lead a campaign to ameliorate the "digital divide" on a global scale. In this respect, the "digital divide" on the Korean peninsula is as useful a vehicle as any for measuring the overall situation and relationship between the two Koreas, as well as for measuring the prospects and implications for efforts to overcome national division and establish a process for reintegrating the two Koreas.

Other chapters in this book examine IT capacities and their implications for South and North Korea in great technical detail; this chapter's objective is less to focus on technical capacities than to examine the issue of IT and its implications as either a symptom of division or a possible catalyst for inter-Korean reconciliation. This chapter will begin with some observations on the apparent roles and perceptions of IT in North Korea, survey the ways in which IT has been considered by South Koreans as a possible vehicle for overcoming national division thus contributing to peaceful coexistence and eventual national unification, will highlight some known instances of IT cooperation between the two Koreas, and will examine possibilities for cooperation in the IT sector as a vehicle for promoting inter-Korean cooperation and the obstacles to achieving such cooperation.

Observations on Perceptions, Role, and Impact of IT in North Korea

The Asia Foundation has sponsored a number of exchange programs that have provided opportunities to develop impressions of North Korean views of IT based on direct observation of the status, function and uses of IT in North Korea. Below are some personal observations and interpretations of how the North Koreans are thinking of IT and its applications based on The Asia Foundation's experience through its programmatic efforts.

IT as a magic bullet for revitalizing North Korea's economy

Although computer hardware and various types of software had begun to seep into North Korea during the 1990s through off the shelf purchases and donations via *Chosen*

Soren and direct purchases in China, and the establishment of the Pyongyang Information Center in 1996 was evidence of DPRK leadership interest in IT, affirmation of IT as a leadership priority apparently received additional momentum with the announcement in the joint New Year's editorial of 2001, and with Kim Jong Il's endorsement of "new thinking" through the development of science and technology.¹⁶⁴

Less than one month following Kim Jong Il's visit to Shanghai, The Asia Foundation received an urgent request via the Korea Asia Pacific Peace Committee to hold its fourth law seminar with a group of legal specialists in Shanghai. The previous three seminars had taken place annually from 1998 and were led in Beijing by New York University law professor Jerome Cohen, with the cooperation of Beijing University. Due to the urgency of the request and the specific desire of the North Korean specialists to examine the legal infrastructure necessary to establish special economic zones, the seminar was held with the cooperation of a Shanghai-based law firm and included lectures by Chinese legal specialists on all aspects of the management of the special economic zones. During side conversations, one of the program participants admitted that although Kim Jong Il had endorsed "new thinking" earlier that year, no one yet fully understood what "new thinking" meant. In addition, this group requested basic computer equipment to staff their legislative drafting effort, a request that The Asia Foundation could not fulfill

¹⁶⁴ "By-Product of Self-Reliance: A Lagging Information Industry," *Seoul Naewoe Tongsin*, February 26, 1998, pp. E1-E4, in Korean. FBIS translated Document ID: FTS19980417000361. For more on Kim Chong-II's focus on new thinking in early 2001, see "Let Us See and Solve All Problems from a New Viewpoint and a New Height," *Nodong Sinmun* in Korean, January 9, 2001, p. 1, in Korean. FBIS translated Document ID: KPP20010123000045.

due to U.S. export restrictions. Despite discussions in Shanghai with North Korean colleagues about the possibility of holding a follow-up seminar prior to the end of 2001, The Asia Foundation received no response to its invitations to hold another meeting. By fall, the attention of The Asia Foundation's primary interlocutors in North Korea had shifted away from law and economics training and was focused almost exclusively on exchanges in the area of IT. By the summer of 2001, it was clear that "new thinking" had been defined not as legal and economic infrastructure development but as science and technology development, with a special focus on IT.¹⁶⁵

Based on agreement reached in October of 2001, The Asia Foundation hosted a combined delegation from the Grand People's Study House and Kimchaek University of Science and Technology for a two-week study tour to San Francisco, Boston, Washington, D.C., and New York last January to promote exchanges in the area of library and information science. Further evidence of the keen interest in IT exchange possibilities has been the deep interest and willingness of the Kimch'aek University of Science and Technology to initiate a direct ongoing joint research and exchange relationship with Syracuse University, a project

¹⁶⁵ The recent announcement of a newly established special economic zone in Sinuiju suggests that despite lack of follow-up with The Asia Foundation to hold additional seminars and law exchanges, colleagues who participated in the programs in China have been hard at work applying the information and library resources provided during the April 2001 program in Shanghai. A secondary factor which may have stalled the Foundation's law exchange and training programs may have been related to the decline in the influence of the Asia Pacific Peace Committee and reports that its Chairman, Kim Yong-sun, faced internal political difficulties from April of 2001. See "DPRK's Kim Yong-sun Secretary to Workers Party Makes "Comeback," *JoongAng Ilbo*, April 3, 2001 (Internet version as cited by FBIS Document number: KPP20010403000115.

led by Professor Stuart Thorson in cooperation with the New York-based Korea Society.

Intranet vs. Internet: IT as a tool for opening or for reinforcing political control?

During the course of conversations with North Korean partners at the Grand People's Study House and Kimchaek University of Science and Technology, it became clear that while the level and type of computer hardware available within North Korea gradually improved over time, actual access to the Internet remained a distant dream for those institutions. At the same time, press reports suggested that some specialized super-elite individuals and institutions (including the "Dear Leader" himself) already had Internet access and were privileged to surf the net and reach the outside world. Those who actually did have Internet access from North Korea were voyeurs on the world, part of a super-elite class within North Korea for whom the outside world was accessible, but, for North Korean citizens, virtually impervious to North Korean direct participation through which to gain a context for interpreting the flood of media information available via computer and satellite.¹⁶⁶

The level of hardware and internal access to the North Korean Intranet, a form of local area network that extended within Pyongyang to major institutions of government and higher learning, appears to be a useful indicator of where institutions might stand in the relative hierarchy of priority within North Korea. The best and latest Pentium computers with large monitors were at the Children's

¹⁶⁶ The case of Kim Jong Nam in Japan, however, suggests the possibility that North Korean super-elites may even have traveled more than might be fully appreciated on forged passports of other nations. That super-elite has not to our knowledge been involved in any programs sponsored by The Asia Foundation.

Palace by May of 2001, long before such models were to arrive at either Kimchaek University of Science and Technology or the Grand People's Study House. Rather than providing these latest computers to university students or government officials who might effectively use them to their capacity, the versions of the latest, most up-to-date hardware went on display for propaganda purposes without regard to efficiency or capacity of use. Songs about computer education were added to the performance repertoire for mass consumption as a vehicle by which to project a progressive image of a "strong and rich" North Korea that was keeping up with, if not leading, global trends in IT. At the very least, these songs provided a way of projecting an image of improvement in quality of life in North Korea despite the reality that the North was dropping farther behind the standards and capacity of the rest of the world.

During a visit in October of 2001 to Kimchaek University, the Department of Computer Engineering was stocked with Pentiums that were running Japanese versions of Windows 98, probably delivered via *Chosen Soren*. We were shown the home page for the North Korean intranet, a network connecting a few dozen elite institutions that was hobbled in speed by the poor quality and slow speed of phone lines in North Korea. A brief inspection of intranet content showed that Kim Il Sung University had already formatted page after page of sayings of the Great Leader in HTML, a content decision that clearly reinforced and perpetuated the leadership objectives and suggested intranet versus Internet availability as a useful vehicle through which to reinforce propaganda and political education.

It was not until May of this year (following GPSH's participation in our January library sciences study tour in the United States) that we received a tour of GPSH in

which the old card catalog had finally been removed and replaced by a computerized system and dozens of computer terminals available for use by library patrons. The requests of November 2000 for external CD-ROM capacity had faded with the provision of these new computers, and the persistent and even desperate requests for computer hardware, equally persistently deflected by The Asia Foundation in compliance with U.S. laws forbidding such exports, also faded by the end of 2001.¹⁶⁷ Our interlocutors finally ceased to make requests for used laptops on a personal basis. Prior to the beginning of 2002, we were told that it had in fact been official policy to request computer equipment from NGOs such as The Asia Foundation, if for no other reasons than to receive assistance outside U.S. laws and/or to remind American interlocutors of the tight restrictions imposed by the U.S. embargo under the Trading With the Enemy Act and other export control arrangements restricting exports of the latest computers to North Korea without undergoing an arduous licensing process.

DPRK concerns about how to reap benefits of connecting with the Internet without exposing themselves to the downside risks, including the possibility of external interference in the form of hacking or other attacks on the security of North Korea's computer infrastructure, are reflected in the interest that North Korean specialists have shown in computer security and the construction of firewalls. The desire to separate the Internet and intranet

¹⁶⁷ An innocent question to GPSH staff regarding the origin of the newly-installed computer equipment during a May, 2002 visit elicited the familiar refrain, "Thanks to the beneficence of the Dear Leader General Kim Jong Il. ..." We were left with the impression that these computers had been hand-me-downs from branches of the government such as the Ministry of Trade or other branches of the government that had upgraded and replaced their own equipment.

infrastructure suggests that North Korean leaders are very much concerned about how to maintain a digital divide within North Korea and to carefully control who has access to outside information and who does not.¹⁶⁸

Digital divide within North Korea: Internet, intranet, and computer access

It is very clear that computer access is strictly regulated in North Korea as a means of maintaining effective political control and that access to the Internet and to the use of computers themselves is reflective of the existing political hierarchy inside North Korea. As such, it is not surprising that there would be a significant digital divide inside North Korea itself. Clearly, there is a small cadre of well-trusted technical specialists on the Internet who have been given access to the Internet on a professional basis and are obviously well trusted by the top ranks of the leadership. In fact, the financial and technical support for their specialized effort, which is at the vanguard of North Korea's attempt to leap to the forefront of IT would not be possible were it not for the direct interest and support of the leadership itself. These elites appear to be concentrated in the Korea Computer Center, the Pyongyang Information Center, and other specialized organizations created to support the DPRK's efforts to support its efforts to extend its capacities in software development. The status and prospects for such developments are most clearly shown through improved North Korean technical capacity to develop software in selected areas -- reported to include computer animation, voice and fingerprint recognition technology; and the development of Korean language programs, games, and mapping software. Many of these

¹⁶⁸ BBC Monitoring World Media, "Korea (North): North Korea almost ready for the Internet—South paper," *Chosun Ilbo* (in Korean), September 17, 2001.

products were on display at an IT expo featuring North Korean software projects held in early May of 2002 in Beijing.

Many of the Asia Foundation's primary institutional partners do not yet have the capacity for direct access to the Internet. During The Asia Foundation-sponsored library and information sciences study tour held in January of 2002, the subject of Internet-access to up-to-date journals came up on several occasions, including at a presentation of the J-STOR electronic database for professional journals. After months of muddling answers, in the end, the program participants reluctantly admitted that they preferred to receive these journals on CD-ROM due to their lack of access to the Internet.¹⁶⁹

A third class of institutions, including some elite institutions inside Pyongyang, not to mention the vast majority of the North Korean population, still do not have significant penetration of computers, and are not yet a part of the intranet. The Pyongyang University of Foreign Studies, interestingly enough, does not yet have facilities to incorporate computer-based education for its students despite its status as a primary training ground for students of foreign languages and members of the elite. However, some of their teachers have received basic education and computer software training during short-term programs held in Beijing. Governmental research institutions such as the Academy of Agricultural Sciences are seeking to upgrade their computer facilities through purchases and requests for donations from abroad. At least one NGO, the Vancouver-based GAIN, has a project to provide up-to-date computer equipment to parts of the Ministry of Foreign

¹⁶⁹ Kimchaek University is planning to establish Internet access some time in 2003.

Affairs as part of a computer education project that has gone forward in conjunction with normalization of Canada-DPRK relations.

Clearly, access to the Internet and even to computers in Pyongyang remains a function of where those institutions stand in the North Korean political hierarchy and whether or not institutions have the capacity to purchase computer equipment in cash. Absent a technical expertise in computer hardware or software development and/or design or a vocation that specifically requires Internet access for specialized information gathering or other purposes, Internet and even computer access remains restricted among North Korean elites, and the order of the spread of computer access provides an interesting vehicle by which to assess the relative importance of various institutions within the North Korean hierarchy. Although dissemination of computer hardware and access to local area networks and/or the Internet is gradually spreading inside Pyongyang, it remains the province of a relatively closed group of elites. Interestingly enough, The Asia Foundation's partners appear to be relatively weak in their access to the Internet, yet valuable resources for building educational capacity in the DPRK could be made available when Internet access is made more broadly available to those institutions. The relatively limited dissemination of the Internet vs. the intranet appears to reflect the leadership's awareness of the dangers of the Internet as a source of knowledge outside its control, while the leadership appears to have been able to capture intranet and local access networks as a tool for reinforcing propaganda and political education among students at the elite university level in Pyongyang.

South Korean Views of IT as a Vehicle for Promoting Inter-Korean Reconciliation

As the South has placed high priority on the development of the IT sector, it is natural that South Koreans might explore the uses and applications of IT in the context of inter-Korean relations. The ROK government under Kim Young Sam initially viewed dissemination of North Korean propaganda information as a threat, and took measures to block South Korean public access to such materials. With the advent of the Sunshine Policy, another potential application has been the use of IT as a vehicle for bridging the inter-Korean divide by allowing the broadening of filtered contact between the two societies, particularly in the context of considering how to expand contacts among divided families. The development of interest in IT in the North has allowed IT projects to become possible vehicles for joint collaboration in the private sector, either through outsourcing of assembly of components for IT products or through joint collaboration and development of new software.

IT as a vehicle for penetrating and propagandizing South Korean society

Given the changes that have taken place in South Korean perceptions of North Korea under Kim Dae Jung's Sunshine Policy, it seems strange that the Internet was initially viewed in South Korea as a threat and a tool by which the North could make propaganda inroads to influence the South Korean public. In the current context, it seems quaint to consider that in 1996, the ROK government was greatly concerned by North Korea's initial entry onto the Internet through home pages containing North Korean propaganda that were developed and

maintained in Japan. Consider the following editorial from “The JoongAng Ilbo:”

*With the drastic expansion of the Internet, pornography and other harmful information has become a social problem. What is more shocking is the unscreened infiltration of a home page that praises Kim Il Sung, his son and the North Korean regime to ordinary families.*¹⁷⁰

JoongAng Ilbo was particularly concerned that young students might be exposed to this propaganda. The Kim Young Sam government initially took measures to block the viewing of the site from South Korea, raising concerns among freedom of speech advocates about government policies of censorship and the Internet. The government also paid attention to the content of sites put up by radical student groups in South Korea, and detained several students for posting content on South Korean web sites deemed to violate the National Security Law by praising the North Korean regime.¹⁷¹ Even under the Sunshine Policy, the Kim Dae Jung government has shown concerns about the Internet as a vehicle for unauthorized contact between South Korean citizens and North Korea, convening a special committee of the National Security Council to in response to a North Korean website opened on October 10, 1999.¹⁷²

¹⁷⁰ BBC Summary of World Broadcasts, “Seoul Newspaper Reports ‘shocking infiltration’ of North Korean home page on Internet,” from *JoongAng Ilbo* (Korean edition), June 3, 1996, p. 3.

¹⁷¹ BBC Summary of World Broadcasts, “South arrests student for e-mailing information to North,” Yonhap News Agency, May 27, 1999.

¹⁷² “Government to take steps against visiting N.K. homepage,” *The Korea Herald*, Seoul, ROK, October 22, 1999.

IT as a tool for mediating inter-Korean contact and reconciliation

Under President Kim Dae Jung's Sunshine Policy, no stone was left unturned in exploring possible ways of establishing new links between North and South Korea. This included consideration of how the Internet might be used to promote inter-Korean contacts, including the idea that the Internet might be a way of mediating "virtual" reunions among divided families. This idea waxed and waned depending on the progress in achieving actual divided family reunions, but may be considered as a fallback position in light of the continued failure of North Korea to accept proposals for a permanent meeting spot for divided families or the resumption of inter-Korean mail service for divided families.

There are ongoing initiatives to pursue Internet linkages with the North. The ROK's Yonhap News Agency reported in May that a South Korean company, PopcomNet, had agreed with the Baeksan Computer Company in North Korea to establish an Internet video link for divided family reunions. However, equipment has not yet been set up in cooperation with the respective Red Cross organizations, and users would have to pay a fee to find their relatives and arrange a video meeting. Apart from potential political obstacles, it remains to be seen whether the North Korean telecommunications infrastructure would be sufficient to support such video linkages.¹⁷³ There is also hope that the establishment of e-

¹⁷³ BBC Monitoring Asia Pacific—Political, "North, South Korean firms to arrange family reunions via Internet video link," Yonhap News Agency, Seoul, May 9, 2002.

mail services for North Koreans¹⁷⁴ might stimulate progress in inter-Korean exchange and help to overcome communication difficulties that currently beset many joint non-governmental efforts in the fields of humanitarian and technical assistance.

This type of initiative derives on the South Korean side from the perception of the Internet as a vehicle by which North Korean authorities might be willing to allow mediated (or virtual) contact with North Korean people that would both allow for a measure of control and would be safer than direct person-to-person contact as a means by which to limit South Korean direct contacts with North Koreans that might erode support in North Korea for the political regime.

Another idea that derives from the same assumptions had involved the setting up of an e-mail infrastructure through which Korean-Americans from various fields might provide technical assistance to the North in various areas in the form of a type of on-line consulting or bulletin board service in specialized areas. However, such a project would be enormously complex and it is not clear that such an approach would necessarily allay core North Korean political concerns. In fact, the complexity of the idea might serve only to arouse additional suspicions among North Korean authorities that such links could be used for subversive purposes.

¹⁷⁴ BBC Monitoring Asia Pacific—Political, “North Korea allows limited e-mail exchanges with foreigners,” Yonhap News Agency, Seoul, December 3, 2001.

IT as an opportunity for promoting private sector cooperation

The inter-Korean summit—in combination with the intensified DPRK leadership interest in IT—has opened up a variety of opportunities for potential IT cooperation in the business sector. Areas of perceived opportunity have included outsourcing of parts assembly for IT infrastructure components to North Korean companies, joint collaboration on development of Korean language software applications, and exchange and training opportunities for South Korean specialists to share their knowledge and expertise with North Korean experts. Cooperation has proceeded sufficiently in some of these areas that inter-Korean cooperation in the IT sector may be regarded as a current bright spot for inter-Korean reconciliation.

IT subcomponent outsourcing and manufacturing projects include a joint venture processing-on-commission operation between Hanaro Telecom and the North Korean Samcholli General Corporation to produce splitters and micro-filters for ADSL service. Hanaro has also signed a contract to sell software products developed in North Korea online. South Korean firms have also shown an eagerness to provide communications equipment and infrastructure to Pyongyang and Mount Kumgang in connection with Hyundai's ventures in those locations.¹⁷⁵ South Korean IT entrepreneurs have sought cooperation with North Korean

¹⁷⁵ BBC Monitoring Asia Pacific—Economic, “Koreas: North, South firms launch joint venture to produce Internet parts,” Yonhap News Agency, Seoul, August 27, 2001, “South Korean IT firms getting ready for North gold rush,” Yonhap News Agency, Seoul, February 25, 2001, “South’s Hanaro Telecom to cooperate with North in software sector,” Yonhap News Agency, Seoul, August 3, 2000.

specialists on projects in the areas of animation, on-line gaming, and other Internet software applications, and formed an association to promote e-commerce with the North.¹⁷⁶

There are also a number of relatively unpublicized efforts through which North and South Korean firms are cooperating in exchange and training ventures. Two South Korean professors from Hanyang University were involved in two-month training programs for 60 students at Kimchaek University of Science and Technology this summer in one of the first direct educational exchanges involving South Korean professors in Pyongyang.¹⁷⁷ In addition, there is a project to train dozens of North Korean IT professionals from the Pyongyang Computer Center in computer language programming and software development underway in Dandong, PRC, involving cooperation with South Korean IT specialists.

Obstacles to Closing the IT Divide Between North and South Korea

The previous sections have attempted to explain the perceptions and motivations of North and South Korea, respectively, in pursuing IT cooperation that might assist in eliminating the digital divide between the two Koreas and promote inter-Korean reconciliation. It is a mixed picture, with the trend toward specific areas where limited but

¹⁷⁶ BBC Monitoring Asia Pacific—Economic, “Inter-Korean IT complex to be launched in Pyongyang,” Yonhap News Agency, Seoul, August 7, 2001, “South Korean IT firms to visit North,” Yonhap News Agency, Seoul, April 19, 2001, “South Korean venture firms to form association for e-business with North,” Yonhap News Agency, July 11, 2000.

¹⁷⁷ “Hanyang University Plans to Build Engineering Hall in North Korea,” *The Korea Herald*, July 12, 2002.

potentially significant opportunities for cooperation are being pursued. We will now turn to an examination of some of the obstacles that must be overcome for inter-Korean IT cooperation to develop effectively.

Clearly, the major limiting factors in allowing greater Internet and telecommunications cooperation between North and South Korea are a result of a combination of infrastructure drawbacks in North Korea and political concerns that these new tools could either undermine the political control of the leadership in North Korea's closed system on the one hand or provide a new vehicle for extending the regime's political control on the other.¹⁷⁸ As suggested above, the solution of choice within North Korea appears to be to seek to develop and deepen a digital divide between North Korean super-elites who would gradually be allowed to have greater access to e-mail and the Internet -- interestingly enough, on the basis of the commercial consideration of their ability to pay for Internet access less than on the basis of political concerns. Thus, there is an opportunity to close a digital divide between North Korean super-elites and South Korean counterparts as they seek opportunities to "normalize" their own participation in the world beyond North Korea's borders. However, the line between super-elite opportunities for access to the Internet, with accompanying exposure to the outside world, and firm control over the content of the North Korean intranet, designed to reinforce the political messages and propaganda that will perpetuate regime control, is likely to remain stark and absolute. It remains to be seen whether South Korean strategies for extending Internet cooperation

¹⁷⁸ "DPRK's IT Industry Is Aimed At Stimulating Planned Economy," Chosun Ilbo (Internet Version—WWW) in Korean, April 22, 2002, as translated by FBIS, "DPRK IT Industry Development Reportedly Aimed at Promoting Planned Economy," FBIS Document Number: KPP20020422000098.

with North Korea have given serious consideration or effort to close North Korea's internal digital divide.

Infrastructure obstacles to inter-Korean IT cooperation

Inter-Korean cooperation in information technology carries with it opportunities for the North to address internal infrastructure needs by requesting assistance from South Korea, but the North still faces some complex choices and limits to its ability to improve its infrastructure sufficiently to support greater interaction with South Korea. For instance, the telephone penetration rate in North Korea is reported to have been 4.9 percent in 1998, according to research by Rho Sung-joon of the Japan-based Global Communications Research Institute, and most of the 700 exchanges for providing local long distance phone service were still manually operated at the end of 1997.¹⁷⁹

These obstacles are also broadly reflective of some major political obstacles that stand in the way of progress towards greater economic integration between the two Koreas. The first obstacle is related to the North's limited economic capacity or access to investment capital that can help to address its infrastructure needs. South Korean investment represents a major new opportunity to address some of these needs, but continuing restrictions on North Korean access to loans and grants from international financial institutions constitutes a significant limiting factor in the absence of broader changes in the North's political and security situation and in its relationship to South Korea and the international community. In addition, the North must find ways to improve its own investment environment, upgrade the skills of its labor force, solve its legal and

¹⁷⁹ Kim Hoo-ran, "Telecom service in North Korea much like that of the South in the mid-1970s," *The Korea Herald*, Seoul, ROK, June 24, 2000.

transportation infrastructure problems and most importantly, prove to outsiders that it is actually possible to make money through North Korea-based investments if external cooperation in any area including the IT sector is to truly make serious progress.¹⁸⁰

The North may also harbor concerns about the extent to which it really wants to integrate with South Korea (especially if that integration threatens North Korea's internal digital divide), and it currently faces an interesting choice in this regard as it considers how it wants to develop its telecommunications infrastructure. The North has examined the possibility of developing a mobile phone network infrastructure and has had a relationship with the Bangkok-based Loxley Group, which has built a telecommunications center in the Rajin-Sonbong region. However, the Loxley Group is ready to install the European GSM standard and has reportedly built four base stations in Pyongyang to test cellular phone service there on a pilot basis, while South Korean telecommunications companies have recently begun to lobby the North Korean authorities to adopt the CDMA standard that is used in South Korea. This choice has obvious implications for the future integration of the two Koreas since it will determine whether a unified mobile phone standard exists on the Korean peninsula or whether differing mobile standards will contribute an additional new obstacle to integration between the two Koreas.¹⁸¹

¹⁸⁰ Ko Su-sok, "Establishment of 'Regulation on Introducing Foreign Corporations' Newest Technology," *JoongAng Ilbo* (Internet Version- WWW), in Korean, July 17, 2002, as translated by FBIS, "DPRK 'Heating Up' Its Lure of 'State-of-the-Art' Technology From Overseas," FBIS Document Number: KPP20020717000049.

¹⁸¹ Nam Mun-hui, "'Acquire Contracts for North Korean Cellular Phone Project'—Foreign Companies Take on North Korean Mobile Phone Market . . . ROK Companies Seek to Reverse This Through Communications Ministers Talks," *Seoul Sisa Journal* in Korean July

Political obstacles to inter-Korean IT cooperation and US policy toward North Korea

North Korea's pursuit of a mobile phone network also carries with it by implication a policy choice for the United States that may directly affect the inter-Korean digital divide. This is because the South Korean push for North Korea to adopt the CDMA standard that has been adopted in the South would not be able to go forward without approval from the U.S. Department of Treasury, which oversees the enforcement of controls on exports to North Korea and other hostile countries under the provisions of the Wassenaar Arrangement. Although CDMA technology has already been adopted in China and Vietnam, there is no question that the adoption of a mobile phone system inside North Korea would provide an improvement in communications capacity inside North Korea that would inevitably also be applied in ways that could strengthen the DPRK's ability and response time in any military operations that it might carry out in the future, including across the DMZ.

Likewise, Wassenaar restrictions and the U.S. Trading With the Enemy Act continue to prohibit transfer of Pentium-level computer technology to the DPRK. However, this restriction is clearly being challenged on a practical basis in two respects. First, the North Koreans are clearly already procuring computer technology through

4, 2002, pp. 60-62, as translated by FBIS, "ROK Efforts to Win DPRK Cellular Phone Project Viewed," FBIS Document Number: KPP2002070800042, and "Reason for North Korea Wanting to 'Increase the Use of Information Technology'; this Country of 'Closed Information' Builds a Cellular Phone Net," Tokyo *AERA* in Japanese, June 24, 2002, pp. 37-39, as translated by FBIS, "Article Discusses Progress in DPRK's Info Systems," FBIS Document Number: JPP20020621000002.

purchases and or gifts from Japan and China in violation of those export control regulations, a restriction which, as the level of off-the-shelf computer technology continues to expand, becomes unenforceable. Imagine the North Korean specialist who downloads the latest version of Microsoft Windows onto his computer when he reads the user agreement that informs him that he should cease the installation of the software in accordance with U.S. law! Second, export control arrangements have clearly posed a dilemma for the ROK government and South Korean NGOs who want to promote inter-Korean cooperation. South Korean citizens and businesses are replacing old computers every day that must go to the garbage dump—or could be given to North Korea in the same manner that one might provide hand-me-down clothing to a homeless person, yet these restrictions are standing in the way of cooperation that might alleviate the inter-Korean digital divide. One aspect of U.S. policy toward North Korea that requires careful consideration and review is whether and under what circumstances must the United States maintain a firm wall of restrictions against the DPRK in accordance with its current policy line and in which cases might such a line be counterproductive insofar as it is perceived as part of a U.S. policy to maintain North-South division in all areas, including digital divisions between the two Koreas.

Conclusion

The “digital divide” between North and South Korea is growing. The factors behind this division are a faithful reflection of the economic and political factors that more broadly affect inter-Korean division. It is clear that North Korea thoroughly understands the control issues involved in managing the installation of IT and modern telecommunications applications. The best direct evidence of this understanding is applied at the Sunan airport, when

North Korea confiscates all potential means of telecommunication independent of the North Korean system, guarding mobile phones even without a communications network through which they might be used for communication with the outside world. The DPRK government has increasingly emphasized the development of IT capacity as a potential “magic bullet” for leapfrogging its economy into the twenty-first century, while paying close attention to the potential impact on North Korea’s highly stratified society. The effect has been to create a “digital divide” inside North Korea that is much more dramatic and difficult to overcome than the division between the North Korean elite “voyeurs” on global affairs and the rest of the world. In the South, North Korea’s interest in IT was initially perceived as a threat, through which the North could openly spread its own propaganda to South Korean citizens, but is increasingly seen as an opportunity and an important vehicle for promoting inter-Korean reconciliation by using newer, more effective tools for overcoming political problems and by creating areas through which the North is willing to cooperate directly with its counterparts in the South. The major obstacles to more effectively addressing the inter-Korean “digital divide” faithfully reflect the fundamental infrastructure and political obstacles to inter-Korean reconciliation and North Korea’s integration with the outside world. The task of effectively overcoming inter-Korean divisions through North Korea’s economic integration and political transformation remains the overarching challenge that must be dealt with comprehensively in all aspects of policy formation toward the Korean peninsula.

