한국의 보편적 서비스정책과 남북한 통일: 정책분석[*]

South Korean Universal Service and Korean Reunification: A Policy Analysis

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초 록

이 연구의 목적은 보편적 서비스의 개념과 범위를 재정립하고 남북한 통일과정에서 한국의 보편적 서비스정책 개발을 통해 통일과정에서 남북한의 정보격차를 줄이는 데 있다. 연구의 기본 전제는 잘 발달된 보편적 서비스정책이 통일과정에서 남북한 주민들의 정보자원에 대한 평등한 접근을 가능하게 함으로써 궁극적으로 한반도의 내적(사회문화적) 통합에 기여할 것이라는 점이다. 이 연구를 위한 개념적 틀은 사회자본(Social Capital) 이론과 혁신 확산(Diffusion of Innovations) 이론이다. 이 연구는 정책분석(Policy Analysis) 기법, 특히 질적 정책분석방법을 사용하고 있으며, 분석의 신뢰성을 높이기 위해 트라이앵귤레이션을 사용하고 있다. 정책분석을 위한 데이터는 정보화 관련 법령, 정책문건, 및 남북한간의 주요 합의문 등이다. 본 연구는 한국의 보편적 서비스의 내용 및 주요 특징을 규명하고 남북한 사이의 정보통신 정책과 정보통신 기반구축을 위한 협력에서 상당한 가능성을 보여주고 있으며, 다섯 가지 영역에서 정책 제언을 하고 있다: 1) 보편적 서비스범위의 재정립, 2) 남북한의 통합된 정보통신 기반구축, 3) 정책도구의 개발, 4) 정부 조직의 재구성, 5) 남북한 통일을 위한 참여적 보편적 서비스 모델의 창출

ABSTRACT

The purpose of this study is to redefine the concept and scope of universal service and to develop universal service policy of South Korea for Korean reunification. The basic assumption of this study is that well developed universal service may contribute to the eventual reunification by ensuring equal access to information resources for the two peoples. The theoretical foundation of this study includes social capital and diffusion of innovations theory. This study uses policy analysis as both data collection and data analysis, more specifically qualitative policy analysis with triangulation for improving credibility. Data for the analysis were collected through legislation, other policy documents, and major agreements between North and South Korea related to informatization and unification. This study, identified the major characteristics of universal service and explored the current universal service in South Korea by analyzing major policy instruments of South Korea. In addition, this study presented a great possibility of cooperating in telecommunication policy and telecommunication infrastructure. Consequently, this study proposed policy recommendations in five areas: 1) redefining the scope of universal service, 2) developing a unified telecommunication infrastructure, 3) developing policy instruments, 4) restructuring government organizations, and 5) creating a participatory universal service model for Korean reunification.

키워드: 보편적 서비스, 남북한 통일, 디지털 디바이드, 정보격차, 정보불평등, 평등한 정보접근
　　　　 Universal Service, Korean Reunification, Digital Divide, Information Gap, Information Inequity, Equal Access

CHAPTER 1. INTRODUCTION

Rapid technological development has required the expansion of universal service[1] beyond the traditional "bare essentials,"[2] to the point of redefining these essentials. This study defines universal service as basic telecommunications services which ensure equal access to information resources through both physical connections to networks and human infrastructure.[3] While the recent proliferation of telecommunication services has provided far easier access to information resources, it has widened the information access gap between the service "haves" and "have nots," and this information inequity may increase social inequity[4] by limiting political and economic participation in society. Universal service is one of the most debated concepts in telecommunications policy.

While many studies have considered universal service a rational good and an ideal policy objective to be pursued, they have not provided a rationale to justify it. In addition, most research has focused on the physical connection for universal service, such as equipment and networks to connect telecommunication infrastructure, but has given little consideration to such aspects of universal service as the service itself and access to information resources through human infrastructure required for such a service, which are crucial elements to ensuring information equity. On the other hand, while many studies of Korean reunification have focused on political and economic perspectives, few have examined a primarily social perspective such as social equity. In addition, few studies of universal service in South Korea have focused on the development of universal service for Korean reunification, much less universal service as it relates to North Korea.[5] This study, therefore, aims to fill this gap by exploring the conceptual framework of universal service and by redefining the scope of universal service in the context of Korean reunification.

The purpose of the study is to redefine the concept and scope of universal service and

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1) This study understands universal service as very dynamic concept which reflects each society's social, political, economic, and technological conditions.
2) This study defines the bare essential those telecommunication services without which people cannot function effectively in an information driven society.
3) This study defines "human infrastructure" as human resources with intellectual assets which include knowledge, skill, and experience. These may be developed by education and training.
4) Social inequity is defined as unfair distribution of political, economic, and social benefits.
5) For the sake of convenience and clarity, this study uses "North Korea" for the Democratic People's Republic of Korea and "South Korea" for the Republic of Korea.

to develop universal service in South Korea for Korean reunification. This study identifies the major characteristics and policy concerns of universal service in South Korea by analyzing major policy instruments of that nation. In addition, this study compares the major characteristics between North and South Korean telecommunication infrastructure and explores a universal service model for social integration between North and South Korea. The ultimate goal of this study is to suggest recommendations for a universal service model that will support Korean reunification. These recommendations emerged from an analysis of major policy instruments such as laws and important research studies. The primary period for the review of universal service is from the early 1990s to 2003.

CHAPTER 2. CONCEPTUAL FRAMEWORKS

This chapter explored a conceptual framework for understanding universal service and applied two conceptual frameworks, social capital theory and diffusion of innovations theory, in order to better understand and redefine universal service.

1. Applying Social Capital Theory to Universal Service

According to Coleman (1990), social capital is an intangible public good created by individuals, a useful byproduct of rounds of trusting and trustworthy interactions among people. It includes relations of authority, trust, and norms. Putnam (1993) defines social capital as "features of social organization, such as trust, norms, and networks that can improve the efficiency of society by facilitating coordinated actions" (p. 167). Putnam (1993) offers empirical evidence for the importance of "civic community" in developing successful institutions in his book *Making Democracy Work*. Putnam explores the relationship between civic community and institutional performance and how this relationship contributes to making good government. He tries to identify what variables can better account for institutional performance and shows that "social context and history profoundly condition the effectiveness of institutions" (p. 182).

In a highly developed network society, fully realized universal service is fundamental to ensure social equity for marginalized people and eventual participative democratization:

"Without access, one cannot be a part of the telecommunicating community" (Jacobson, 1989, p. 59). Well-developed telecommunications networks promote active engagement in the civic community. High-speed Internet connections provide people with more opportunities to access and share information with their community. However, the enormous information gap between North and South may provide another tension even if both governments have made much progress in their relationship. Broad service on a universal basis for both peoples, therefore, would contribute to creating plentiful information resources and eventually developing trust and fostering mutual understanding between the two Korean communities by providing the two peoples with more opportunities to access and share each other's information resources.

Consequently, a universal service policy for Korean reunification should be developed based on these three perspectives: a top-down, government-led establishment of universal service policy, a bottom-up promotion of civic participation, and third perspective by industries in implementing those policies to ensure effective and full-fledged universal service diffusion. Universal service policy developed this type of civic participation may promote more possibility than only by the government to access to information resources than would a policy developed solely by the government. In order to encourage civic participation, we need to develop universal service because in an information society, access to information resources enables people to participate in the policymaking process by additional means. Due to the totally different political systems of the two Koreas, government led policies may have limitations. In the process of Korean reunification, more exchange and cooperation among civic groups may provide more possibilities for cooperation than strictly governmental engagement.

2. Diffusion of Innovations Theory as a Framework for the Diffusion of Universal Service

Innovations diffusion theory was originally developed by Everett Rogers (1983) and is often used to examine adoption of technological innovations. Rogers (1995) defines diffusion as "the process by which an innovation spreads. The diffusion process is the spread of a new idea from its source of invention or creation to its ultimate users or adopters" (p. 35). Rogers defines "diffusion" to include both "the planned and the spontaneous spread of new ideas" (p. 7). He conceptualizes the diffusion process at the most elementary form as: "(1) an innovation, (2) an individual or other unit of adoption

that has knowledge of the innovation or experience with using it, (3) another individual or other unit that does not yet have experience with the innovation, and (4) a communication channel connecting the two units" (p. 8). According to diffusion theory, the adoption of technological innovations is a function of innovativeness, or willingness to try new products. Rogers claims that an important factor affecting the adoption rate of an innovation is the cultural value of the potential adopters. Cultural values influence the innovation   decision process.

Rogers classifies the adopters of innovations into five categories based on how long a period of time they take to adopt an innovation: innovators, early adopters, the early majority, the late majority, and laggards:

- Innovators (Venturesome): These are the risk   takers who are the first to use the innovation. Venturesomeness is almost an obsession with innovators. The major value of the innovator is being venturesome.
- Early adopters (Respected): Early adopters are a more integrated part of the local social system than are innovators. This group tends to be influential because others look to them for opinion leadership.
- Early majority (Deliberate): The early majority adopt new ideas just before the average member of a social system. They may deliberate for some time before completely adopting a new idea. While not in positions of leadership, these individuals show a deliberate willingness to change.
- Late majority (Skeptical): The late majority adopt new ideas just after the average member of a social system. Adoption may be both an economic necessity and the result of increasing network pressures from peers.
- Laggards (Traditional): These people resist change. Laggards are the last to adopt an innovation. While they are often viewed negatively, examination of their reasons for resistance may reveal problems that if not corrected may eventually cause the change to fail. (pp. 263-266)

As noted above, these adopter categories are based on the distribution of inventiveness across a social system. Rogers therefore claims that all new technologies diffuse unevenly; some individuals adopt them early while others will lag after the majority. Rogers makes distinctions among categories of adopters based on their time of adoption

within their social systems. Rogers, however, points out, "There are no profound 'breaks' in the innovativeness continuum among each of the five categories" (p. 168). Rogers emphasizes that innovation diffusion should be understood in the social context.

Innovation diffusion theory is very useful as a conceptual framework for universal service for Korean reunification. South Korea has a comparatively well-developed telecommunications infrastructure for universal service while North Korea has fallen behind; at the present time, the Internet has reached the critical mass threshold in South Korea to assure that its adoption rate will become self-sustaining. The possibility is high that the robust universal service model of South Korea will eventually be applied to North Korea during the process of reunification. Application of the South Korean model to North Korea, however, may encounter several obstacles because the two countries have maintained totally different political, economic, and social systems for more than fifty years. These differences have impeded mutual exchange and cooperation between the two countries in many areas. Lack of contact has made the experiences of the two countries drastically different in many respects. More specifically, the lack of telecommunication networks and human infrastructure for using the networks in North Korea may make it difficult for North Koreans to adjust themselves to the advanced technology and more open social structure of South Korea before or during the reunification process.

A universal service policy based on diffusion theories may help South Korea to diffuse its universal service policies to North Korea by diffusing the service from an early adopter (South Korea) to the laggards (North Korea). This universal service diffusion will be beneficial for the two Koreas not only to prepare and to cooperate on universal service policy before reunification, but also to prevent disorder in the post-reunification information environment. The success of the eventual Korean reunification, which needs to include cultural harmonization as well as state reunification, is to some extent dependent upon ensuring equal information access through universal service diffusion. In short, innovation diffusion theory and policy diffusion theory are well-suited to a technology-related study, and especially to one that concerns implementing universal service between and within the two Koreas.

CHAPTER 3. RESEARCH METHODOLOGY

This chapter describes overview of the research methodology and the characteristics of universal service research as both information policy and telecommunication policy. In addition, this chapter explains data collection and data analysis, especially focusing on policy analysis. Finally, this chapter describes the trustworthiness of the data of this study.

This study uses policy analysis to identify the major characteristics of universal service and to analyze major debates of universal service in South Korea. Policy analysis will also be very useful in proposing policy recommendations for universal service in the process of Korean reunification. Policy analysis may provide "rigorous, effective, and holistic research" about universal service policies and increase the credibility as well as the quality of the study both by providing insight into existing policy trends and by complementing the review of existing literature.

Policy analysis is the method used in this study and includes review of government documents (including white papers), laws, agreements between North and South Korea, and other sources. Majchrzak (1984) defines policy research as "the process of conducting research on, or analysis of, a fundamental social problem in order to provide policymakers with programmatic, action oriented recommendations for alleviating the problem"(p. 12).

The scope of this study is limited to the period from the early 1990s to the end of 2003. From the perspective of the relationship between North and South Korea, the Agreement on Reconciliation, Nonaggression, and Exchange and Cooperation between South and North Korea (Basic Agreement)[6] was reached in 1991. It allowed the two Koreas to promote exchange and cooperation in earnest. In addition, the fundamental foundation for informaization and universal service in South Korea was established in 1995 by the Framework Act on Informatization Promotion.[7]

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6) The purpose of the Basic Agreement is to improve the relationship between the two Korea by promoting multilateral exchanges and cooperation.

7) The purpose of the act is "to improve the quality of life for the nation and to contribute to the development of the national economy, thereby promoting informatization and laying the foundation for the information and communications industry and achieving advanced information and communications industry infrastructure" (Article 1).

CHAPTER 4. CURRENT UNIVERSAL SERVICE AND MAJOR POLICY DEBATES IN SOUTH KOREA

Although South Korea began telecommunications service more than a century ago, it was only in the 1980s that the Korean public started receiving modern and full-scale telephone service (Kim & Lee, 1991). According to Kim and Lee, during the 1980s, the South Korean government made efforts to provide universal telephone service with two policy initiatives: the Immediate Telephone Installation System (ITIS) and Widening and Automation (WA), both of which aimed to expand the numbers of subscription networks and to improve network quality. In the 1990s, the South Korean government started a new type of universal service policy designed to increase telephone use, the National Unified Telephone Rating System (NUTRS), which, as an eventual extension of the WA, had a rate plan in which all calls were treated as local calls regardless of the calls' origins and where they terminated. (Kim & Lee, 1991, p. 31)

The South Korean government intends to expand universal service into more than wired service by requiring reflecting technological development by the law. Considering the rapid technological development in South Korea, there is a great possibility to include broadband Internet service in the scope of universal service in the near future. The advanced telecommunication infrastructure will allow the South Korean government to develop universal service for trying to ensure equal access especially for the poor, disabled, and other marginalized groups.

The rapid change of telecommunication technology and the privatization of the telecommunications market have caused much debate about universal service. Universal service is one of the most debated issues in telecommunication. The advancement of telecommunications services has forced the government to reconsider the scope of universal service, especially the inclusion of Internet access. In addition, due to the privatization of KT, the selection of universal service providers is one of the most debated topics related to universal service in South Korea. Finally, the other major concern of South Korea is how to establish the universal service fund. Before the KT privatization, KT was a major universal service provider, and the funding for universal service still depends on KT. The privatization of KT accelerated the debates about the universal service fund. This financing of universal service is one of major concerns in this study regarding universal service in South Korea.

Consequently, despite the high level of informatization, South Korea faces some obstacles in developing universal service. The privatization and deregulation in telecommunication market have caused funding problems. Lack of consensus caused by top-down approach has impeded the development of fully-realized universal service and created an unbalance in social equity. In addition, conflicting interests between the government and private sectors are one of the major obstacles in providing universal service. Finally, no strong authority of the MIC has made it difficult to compete with other nations in the competitive telecommunication market without a consistent policy and power on national level.

Although South Korea has succeeded in developing physical telecommunication infrastructure through the strong government driven policy, a bottom up approach focused on civic engagement will promote wide use of the infrastructure through well developed human infrastructure. The diversified universal service providers resulting from the KT privatization requires private sectors' and civic participation as well as the strong government leadership. Ultimately, this dual approach (top-down plus bottom-up) derived from social capital theory can be used to overcome the information gap between North and South Korea and to improve the relationship of the two Koreas by using consensus and strong cohesiveness of it.

CHAPTER 5. POLICY ANALYSIS OF SOUTH KOREAN UNIVERSAL SERVICE

This chapter analyzed the major policy instruments on telecommunications and universal service and explored the characteristics and major concerns of South Korean telecommunications and universal service policy from the perspective of Korean reunification. The White Paper, E-Korea, Annual Plan, and FAIP were examined in order to explore general principles of South Korean informatization policy. The FAT and the TBA provide a general understanding of telecommunications in South Korea. Finally, NUIP Act, MKIR Act, and the Digital Divide Act were reviewed in order to identify a policy direction for promoting information use.

Table 1. shows how each policy instrument contributed to the analysis of infor-matization and universal service in South Korea.

Table 1. Summary table of the informatization policy analysis

Policy Instrument	How it contributes to the analysis of universal service and reunification?
White Paper	Provides justification for comprehensive national informatization
E-Korea Vision 2006	Contributes to emphasis on human infrastructure by focusing on qualitative as well as quantitative informatization
Annual Plan	Contributes to realizing the goal of national informatization through specific action plans
FAIP	Provides basic foundation for national informatization and universal service
FAT	Provides basic understanding of telecommunication by defining major terms and provisions of telecommunication
TBA	Contributes to understanding major concepts of and direction for universal service
NUIP Act	Stresses the importance of the utilization of information and communications networks
MKIR Act	Provides the importance of the management of knowledge and information resources for providing universal service
Digital Divide Act	Provides a rationale for ensuring universal service for the socially marginalized

In South Korea, the policy instruments on informatization were enacted and developed in response to each policy's goals and ultimately focused on informatization of the South Korean people. In general, most of the policy instruments are consistent because the Ministry of Information and Communication has provided them. However, although most of the laws and documents were made by the Ministry of Information and Communication, they are not systemized and organized. Some provisions overlap, and no provisions discuss equal access for the people of both North and South Korea to promote successful eventual reunification.

In conclusion, South Korea has developed an advanced telecommunications infrastructure through deregulation and liberalization of the telecommunication market. A few laws prescribe universal service directly or indirectly, while most laws and documents are conducted to support national informatization or telecommunication services. Universal service related laws in South Korea have vague and controversial provisions in many aspects, especially as regards the funding for and supervision of universal service, and the selection of universal service providers. Furthermore, most of policy instrument of informatization and telecommunication in South Korea do not consider universal service from the perspective of Korean unification. Providing universal service requires substantial amount of money and time for establishing a telecommunication

infrastructure and even more for human infrastructure. Despite liberalization and deregulation in telecommunication, universal service still needs governmental intervention. South Korea should provide more specific and clear legislative provisions of universal service in response to current technological developments and to the social, economic, and political situation of South and North Korea as they progress toward eventual reunification.

CHAPTER 6. POLICY ANALYSIS OF SOUTH KOREAN REUNIFICATION POLICY

In order to explore unification policy in South Korea, three types of policy instruments were examined: 1) Statements of general principles and directions for unification policy, 2) Major agreements to develop the relationship between North and South Korea, and 3) Subsequent laws and policy documents by the South Korean government to realize the agreements between North and South Korea. Table 2. shows how each policy instrument contributes to the analysis of universal service and Korean reunification.

Table 2. Summary table of the unification policy analysis

Name of policy instruments	How it contribute to the analysis of universal service and reunification?
Peace and Prosperity Policy	Provides basic direction for the improvement of the relationship between North and South Korea
White Paper on Korean Reunification	Provides comprehensive information on reunification
Annual Plan of the Ministry of Unification	Contributes to realizing the basic goal of Korean reunification through specific action plans
Joint Declaration	Enables promotion of the relationship between North and South
Basic Agreement	Provides a general agreement for exchange and cooperation
Implementation Protocol	Focuses on exchange and cooperation of science, technology, and environment
Investment Protection	Promotes economic transactions between North and South
Gaeseong Telecommunication Agreement	Provides postal and telecommunication services to Gaesong Industrial Complex
KEDO Communications Protocol	Provides communication services for KEDO staff at the LWR area
Inter-Korean Exchange and Cooperation Act	Contributes to promoting the relationship by providing guidelines and procedures for exchange and cooperation between North and South
Inter-Korean Cooperation Fund Act	Supports and promotes exchange and cooperation between the Koreas through subsidizing South Korean investment financially

The ultimate goal of the laws and policy documents about unification is to improve the relationship between North and South Korea. The South Korea policy instruments and the agreements on unification were enacted or reached in response to each country's needs and ultimately focusing on the improvement of the relationship between North and South Korea. Most of unification policy instruments have their own foci and consistency because they were created by the Ministry of Unification. Thus, for the most part they are systemized and well organized. Compared to policy instruments of informatization, these instruments have relatively few problems of overlap or inconsistency.

However, because of the unpredictable relationship between North and South Korea these instruments cannot provide a "big picture" for future direction. In general, while the policy documents of general direction for Korean unification are systematically intertwined with each other, the agreements between North and South are not systematically related to existing laws and policy documents. Each agreement was reached in order to meet the demands of a specific situation between North and South. Only the *Joint Declaration* and the *Basic Agreement* provide the basic direction for exchange and cooperation between the two Koreas. Furthermore, none of the unification policy instruments include discussion of universal service or equal access between North and South Korean people for social unification. Thus, the future agreements between North and South should be made in a more comprehensive and systemized way so that both countries can realize the goals of the agreements. The unsystematic nature of the agreements makes it difficult to apply them to the improvement of the relationship between the two Koreas.

Consequently, despite the strong desire for unification from the government, South Korea faces with some obstacles in developing unification policy. As mentioned before, the unpredictability of the relationship between North and South Korea had made it difficult to maintain consistent policy. Lack of consensus caused by top-down approach has also impeded the wide civic involvement in the unification policy making process. In addition, the arbitrary use of IFC fund is one of the most debated concerns of unification policy. Finally, no strong authority of the Ministry of Unification has made it difficult to coordinate other ministries and to implement a consistent and uniform policy on national level.

CHAPTER 7. A COMPARATIVE ANALYSIS OF THE TELECOMMUNICATION INFRASTRUCTURES OF NORTH AND SOUTH KOREA

The economic gap between North and South Korea has created parallel gap in telecommunication infrastructures between the two countries. While the rapid economic development of South Korea has allowed it to deploy an advanced telecommunications infrastructure, the serious economic challenges faced by the North have impeded such development there. The lack of a well developed telecommunications infrastructure in the North may be an obstacle to social reunification because it will result in an increasing information gap between North and South Koreans. This information gap may further contribute to both political and economic inequities in North Korea, since access to information is crucial for participation in political and economic life. Therefore, an analysis of the major characteristics of the telecommunications infrastructure and policy of both Koreas will provide insight into how to better develop the two countries' telecommunication infrastructures and services with the goal of eventual unification into a single universal service system.

Table 3. Comparison of Telecommunication Policy between North and South Korea

Elements	North Korea	South Korea
Purpose	Develop the underdeveloped telecommunication infrastructure	Ensure equal access Promote public welfare
Ultimate goal	Develop its economy Promote public welfare by strengthening the regime	Develop the economy Promote public welfare
Basic idea	National monopolism	Deregulation after (virtual) national monopolism Liberalization
Policy implementation	Conflicting policies: - develop telecommunication industry - limit citizens' informatization	More integrated policy: - develop telecommunication industry - promote citizens' informatization Lack of reponse to citizen's demand-side concerns
Major institutional stakeholders	Ministry of Postal Services and Communications Korean Workers Party	Multilevel Stakeholders - Informatization Promotion Committee - Ministry of Information and Communication - Korea Telecom
Regulation	Regulation by the central government	Dual Policy: - regulation by the central government - deregulation and liberalization

Table 4. Comparison of Telecommunication Infrastructure between North and South

Elements	North Korea	South Korea
General	Lack of basic telecommunication infrastructure	Advanced telecommunication infrastructure
Telephone lines	4.82/100 people	43.27/100 people
Wireless (mobile phone)	Limited areas - Rajin-Sunbong Economic Free Trade Zone, Pyongyang, and Geumgangsan Tourism Zone Limited users - military authorities and intelligence agencies Service mode: GSM	33 million mobile phone users Mobile phone subscribers outnumber fixed-line customers Service mode: CDMA
Internet	Intranet No Internet connection to the public - extremely limited to the top level of officials	11 million high-speed Internet users 95% of all households will have high-speed Internet connection by 2005
Networks	Separate industrial networks from governmental networks	Integrated network systems

Based on the statistics of the MIC Web site (As of October 2003).

Both North and South Korea have developed their telecommunications infrastructures under strong government leadership, but they have implemented telecommunication policy very differently. In North Korea, telecommunication policy is mainly controlled and implemented by the central government. However, in South Korea, although the central government still influences telecommunication policy, the private telecommunication sector has enjoyed increasing freedom in determining how policy is implemented. In addition, South Korea has policy agencies that work on multiple levels, from top level strategic meetings, down to the level of research institutes. South Korea expects that telecommunication policy will be developed and implemented through discussions by these multiple levels of government agencies.

In both countries, an open policy provides open access to computer networks, and while it might bring about improvement of the people's lives through economic development based on the telecommunication infrastructure, it might also promote the collapse of the political system. South Korea's telecommunication privatization makes the implementation of integrated policy more difficult, while North Korea's centralized control by the government simplifies such implementation. Therefore, each country needs to improve its strengths and to supplement its weakness. In South Korea fixed

lines are widespread, and supply and demand appears to be in approximate balance. North Korea lacks even fixed telephone lines, with fewer than five lines per one hundred people. The gaps between North and South in mobile service and Internet connection are even greater. Table 4 compares the telecommunication infrastructure between North and South. Owing to various policy initiatives for the improvement of telecommunication infrastructure, most South Korean people have a private telephone connection. As a result of the government's initiatives for national informatization, South Korea is one of the most advanced countries in the world in terms of the use of telecommunication infrastructure and telecommunication services.

However, both economic difficulties and political ideology have made it difficult to develop telecommunication infrastructure in North Korea. However, North and South Korea have attempted to develop a relationship of telecommunication cooperation.

CHAPTER 8. POLICY RECOMMENDATIONS

Based on the analysis study of presented there in the previous chapters, this chapter presents policy recommendations in five areas: 1) redefining the scope of universal service, 2) developing a unified telecommunication infrastructure, 3) developing policy instruments: ensuring universal service through legislation and other policy documents, 4) restructuring government organizations, and 5) creating a participatory universal service model for Korean reunification.

Although South Korea is in a more favorable condition in many aspects than is North Korea, South Korea, too, has faced some obstacles in developing universal service for Korean reunification. On the one hand, despite the high level of informatization, the privatization and deregulation in telecommunication market in South Korea have caused funding problems. Lack of consensus caused by a top-down approach to building social capital has impeded the development of fully-realized universal service. In addition, conflicting interests between the government and private sectors are one of the major obstacles in providing universal service. Finally, authority relations between competing government agencies have made it difficult to compete with other nations in the competitive telecommunication market.

On the other hand, despite the strong desire for unification from both governments,

as mentioned before, the unpredictable relationship between North and South Korea has made it difficult to maintain consistent policy. A lack of consensus caused by top down approach of both governments has impeded wide civic involvement in the unification policy making process. In addition, the arbitrary use of IFC fund is one of the most debated concerns of unification policy. Finally, the fact that the Ministry of Unification has no strong authority has made it difficult to coordinate other ministries and to implement a consistent and uniform policy on national level.

Even though there is no consensus that providing access to telecommunication infrastructure will bridge the information gap between the haves and have-nots, many studies have identified equal access to information and telecommunication services as a solution. The present study also assumes that, given the current rapid technological development, universal service is the most feasible approach to address the information gap by expanding access to telecommunications services. The basic assumption of the present recommendations is that the development of North Korea's telecommunication infrastructure and the development of universal service are essential to bridging the information gap between North and South and thereby helping to achieve Korean reunification. Both social capital theory and diffusion of innovations will help suggest policy recommendations for universal service and Korean unification.

Future Research

While this study has focused on government policy instruments for analyzing universal service and unification, future research needs to be focused on analyzing popular media to identify the general public's perspectives on those topics. Both universal service and unification rarely succeed in their goals without understanding public's point of view. While social equity within South Korea has often been addressed, there has been little discussion about social equity between the two Koreas, much less about equity in North Korea. Future studies need to explore how to ensure social equity between the two countries by expanding universal service and ultimately by applying a cooperative model for Korean reunification. The cooperative universal service model needs to be studied in the context of a national information infrastructure of Korean reunification by examining the German model which accomplished the reunification of East and West Germany in 1990.

While this study focuses on telecommunication infrastructure for a cooperative

universal service model, future research should explore a specific cooperative universal service model for Korean reunification. To do this, future studies need to analyze the policy instruments of North Korea, whereas the current study was limited to South Korean policy instruments. In addition, further exploration of North Korea's telecommunication policy and universal service is necessary make more specific recommendations for North Korea. Due to the lack of information about North Korea, this study did not explore specific areas of the North's telecommunication infrastructure. Future study needs to explore a universal service model based on particular insight into the specific areas of North Korea's telecommunication and political systems. Future study may explore how information equity contribute to social integration between North and South. Finally, further study is required to explore a cooperative universal service model in the context of national information infrastructure of Korean reunification.

Conclusion

Table 5 presents how this study addressed the research questions in each chapter and proposed recommendations based on the policy analysis.

Table 5. Research map

Research Questions	Policy Recommendations	Related Chapters
1. What is universal service?	1. Redefining universal service	Chapter 1, 2 and 8
2. South Korean universal service	2. Developing telecommunication infrastructure 3. Developing policy instruments 4. Restructuring government organizations	Chapter 4, 5 and 8
3. North Korean telecommunication policy and infrastructure	2. Developing telecommunication infrastructure 4. Restructuring government organizations 5. Creating a participatory universal service model for Korean reunification	Chapter 7, 8
4. Universal service model for Korean reunification	1. Redefining universal service 2. Developing telecommunication infrastructure 3. Developing policy instruments 4. Restructuring government organizations 5. Creating a participatory universal service model for Korean reunification	Chapter 2, 4, 5, 6, 7, 8,

Despite the limited access to North Korean resources, this study contributed to developing a theoretical model of universal service for Korean reunification. This study expanded the concept and scope of universal service beyond physical infrastructure to human infrastructure, which may ensure access to information resources and their successful creation and use. Such an expanded approach to universal service may allow people throughout the reunified Korea to participate effectively in public life and society by ensuring more equal access to information resources. This study developed a plan for a unified telecommunication infrastructure by identifying the present infrastructure of each of the countries. The comprehensive analysis of policy instruments regarding universal service and reunification provides insights recommendations for specific policy instruments that need to be developed to ensure universal service in the context of Korean reunification. This study also explored how to restructure government organizations, and, finally, this study concluded that these suggestions should be based on wide range civic participation through the use of social capitals and policy diffusion.

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