

A Study on Introducing Universal Service into the Broadcasting Industry: Lessons from Korea

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In Korea, the challenges in broadcasting industry such as convergence with telecommunications, digitalization and commercialization, raise strong concerns about the validity of universal access to basic broadcasting services. Providing internet services via cable networks is quite common and transmitting multimedia images through telecommunications networks, namely IPTV (Internet Protocol TV), is now emerging in Korea. As a result, some authors have already argued that it needs to extend and apply the concept and appropriate policy regime of universal service in telecommunications sector to broadcasting sector. This paper investigates the way to apply universal access policy in telecommunications industry to broadcasting industry based on policy debates in Korea. To this end, it mainly focuses on the relevant policy issues about universal access: defining the concept and scope of the service, selecting eligible universal service operators and establishing compensation and funding mechanism like existing universal service fund and so on. Based on this analysis, this paper provides some generalized policy implications: First, extending universal service concept to basic broadcasting service should take into consideration the level of the convergence in broadcasting and telecommunication, digital divide, digitalization of broadcasting etc. Second, to achieve economic efficiency, terrestrial TV and cable TV could be provided for the universal service. On the other hand, it would be efficient if satellite broadcasting and digital broadcasting are excluded. Third, the designation of USO operator should be determined taking into account of the efficient provision and quality of universal service, the operator's technical capacity and coverage. Especially, universal service obligations on an operator should be neutral in order not to influence on market competition. Fourth, universal service funding mechanism should be determined taking into considerations of operator's financial performance, competitive environment of broadcasting market and the type of universal fund. Korea's

experiences may serve as important lessons for other countries or operators who try to introduce the universal service in the broadcasting industry.

Keywords: Universal Service, Digital Divide, Broadcasting Right, Network Externalities, Public Utilities, Digitalization of Broadcasting.

1. Research Background

In general the public interests of broadcasting comprehend very extensive concept that broadcasting, which is a public goods, should seek the interest of the public not for profit. For such reason, the functions of broadcasting should satisfy general and objective domains, playing the role to deliver users information and fulfill users knowledge right. Another function of broadcasting is that it is supposed to put priority on the right emotional cultivation for all users and accumulation of valuable creative knowledge than on the regulations broadcasting company or the preference of producer or program. Thus, broadcasting should not give way to seek commercial interest for the fulfillment of users or viewers desire, but should prioritize public interest due to the reverberating effects that far exceed those of other media.

On the other hand, universal service used in communication means that citizens of a nation are guaranteed with minimum using right for essential public goods required to realize humanly life. Such concept of universal service is not fixed but applied in diverse manners depending on changes in communication environment, and it can be said that the discussion of introduction of universal service is largely due to the conceptual dynamic and comprehensive nature of such universal services. To quote some from the past, the concept of universal service burgeoned in late 19th century in transportation section, but as the time merged into the 20th century it began to be used in public interest industries gradually particularly in communication section.

In such a circumstances, fusions of broadcasting and communication are accelerating, and with various new media emerging, 'public interests of broadcasting' which represents the nature of broadcasting as public goods and 'universal service', the concept of minimum communication using right are rising as new issue among scholastic community and researchers (Kim Dae-Ho, 2000; Ryu Chun-Yeol, Bae Jin-Han, 2000; Choi Yang-Su, 2001; Lee Su-Young, Park Eun-Hee, 2002; Bang Seok-Ho 2004; Yun Seok-Min 2005; Seong Sook-Hee 2006; Jeong Yong-Jun 2006). To rephrase, it means that broadcasting and communication have been maintained on separate regulation systems and policy through unique regulation base in separate domains in the past, however various attempts are being introduced to interpret

existing phenomena in new viewpoints of regulations or policy while the environments are witnessing blended services set apart with IPTV and VoIP, etc, and in the same context a new theory is rising such that the public interests of broadcasting can be realized through institutionalization of universal service in viewpoints of communication policy. In particular, the trend that broadcasting service multiplies channels and charges fees works as a factor that restricts the viewing rights of users actually, and thus in fact there is a rising theory that it is necessary to institutionalize universal service in communication than to practically guarantee the broadcasting using rights of users only with the concept of 'the public interests of broadcasting'.

This research examines the logical bases of supporting and opposing arguments by studying the literatures on theoretic oppositions of broadcasting universal service introduction, and arranges and proposes issues that can appear in the institutionalizing process of broadcasting universal services. In addition, the research also analyzes to see if there are any on-going similar arguments in other major countries in classes of overall trend of changes and universal services adoption cases, etc. Last but not least, the research deduces suggestions and considerations for future prospects and institutionalization for universal service introduction of broadcasting by summarizing this discussion.

2. Literature Review

Diverse opinions exist on introduction of broadcasting universal services. While some maintain that the concept of universal service can hardly be adopted to broadcasting as the concept of public interests of broadcasting and that of universal service of communication do not get along, others argue that it is also necessary to seek universal service in communication as a way to practically guarantee broadcasting using rights in an environment broadcasting and communication are merged together. Such argument means that changes are needed in broadcasting users welfare concept as well which used to be based on public interests in environment where broadcasting and communication are merged and indicates that it is important for broadcasting to practically guarantee the using rights of users by

simultaneously considering the concept of universal service rather than by imposing public service obligations based on the public interests. So far, the circumstance is faced by two opposing perspectives: the perspective that the concept of public interests should be re-established in connection with communication rather than be understood within existing broadcasting domain by considering the reality where the border between broadcasting and communication is growing more ambiguous, and the other perspective that broadcasting, a unique cultural domain, should be established differently from other economic domain.

A. Re-establishment of Public Interests of Broadcasting and Institutionalization of Universal Service

'User welfare concept' of broadcasting started out from the viewpoint of public interests based on the characteristics of broadcasting: 'rarity and social influence of channel(radio wave)'. Therefore, in case the logic of channel rarity is phased out due to emergence of new broadcasting media, one may argue that there is no reason to set apart the policy approach to broadcasting from those to other media fields. In other words, the public interests as viewer rights are determined by the public at large as consumers because the interest focus gradually moved toward the efficiency of broadcasting industry itself as changes in broadcasting environment reflect the trends of the era such as free competition, de-regulations and free functions of market.

In this accord, while broadcasting field is also gradually prevailed by market principles, there is a growing emphasis on policy approaches to comprehensively accept market principles and to rely on autonomous regulation and economic incentives going beyond the regulation oriented approaches. In such context, there seems to be an underlying limitation to the ideology of public interests that is in intrinsic conflict with market principle and sometimes works as obstacle factor in stabilizing new broadcasting business.

As such, in the midst of the trend evolving toward transactional service in market principles, classes of social disadvantages like low income class, the disabled,

minorities, etc are left as key subjects to be protected by policy. Accordingly, an argument is being raised that it is necessary to introduce universal service in communication as a way of policy ideology and institutionalization to guarantee broadcast using rights that practically comply with users public interests while minimizing the concept of public interests applied to all users. The followings are the arguments most of papers propose as theoretic bases to introduce universal service of broadcasting.

1) Merging Trends of Broadcasting and Communication

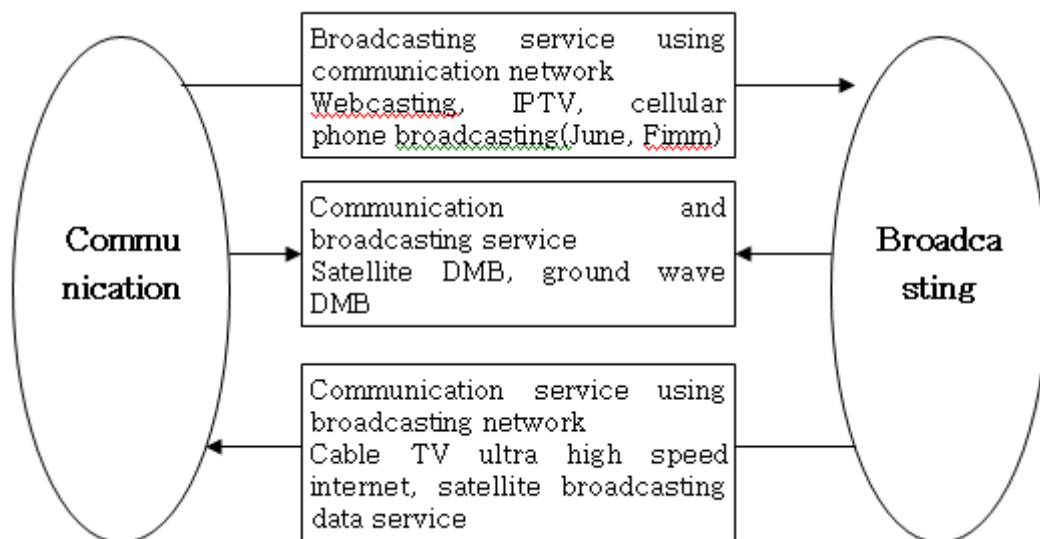
Traditionally, the understanding has been that communications are sent and received mostly via bilateral voice service between service users by establishing bilateral communication network, and broadcasting unilaterally delivers broadcasting programs including voice and video toward unspecific multitude of people through established networks using electric communication equipments. Technical features of such broadcasting and communication brought forth differences in approaches to regulation systems in each fields. Specifically, while communication field, as physical tools that deliver seamless communication among individuals of social members, has been strongly influenced by regulations on physical aspects, broadcasting field regulations have been characterized on contents aspects due to social influence of the delivered contents(Ryu Chun-Yeol, Bae Jin-Han, 2000; Choi Yang-Su, 2001).

At the same time, due to such differences, the concept of 'universal service', which may be the social obligation imposed on information communication service as public belonging, cannot but be defined differently. While communication business, a subject that leases out facility, has been defined as universal service that maintains reliability and consistency of transmission measures, broadcasting service has been defined as universal service with focus on 'public interests'(Lee Sang-Hun, 1998, pp70~71).

However, the phenomena of merger of broadcasting and communication are making it difficult to distinguish among such universal service system principles. Here, the merger of broadcasting and communication can be understood as the phenomenon

that existing border between communication and border demolishes due to development of information communication, alleviation of regulation and activation of competition, etc, or the phenomenon that industrial structure and system, which used to be separate, are continuously integrated as classification of network and service turns unclear due to technology development and diversification of industrial and service structures. Such merger of broadcasting and communication indicates that not only the universal service system regulation principles that have been industrially applied to broadcasting service but also the regulation principles applied to communication businesses have to be applied. In particular, as more and more broadcasting services are delivered bilaterally due to digitalization and contents are supplied on charge as a trend, expansion of estranged classes for broadcasting services is viewed as potential social concern, so emphasis is being made on the necessity to introduce universal service system of communication section, 'guaranty of practical accessibility' let alone 'broadcasting contents universality', the regulation principle of existing broadcasting section.

<Fig 1> Merger Phenomena of Broadcasting and Communication



Source: Lee Dong-Su(2005), 'Domestic and Overseas Countermeasure Trend by Communication and Broadcasting Merger', pp4

2) Digital Divide

Various information from digitalized broadcasting and communication merged services are expected to improve diversity in the supply and use of media under the condition that all people may access services based on equal opportunity. However, in practice, it is undeniable that usable services may be differentiated among classes depending on economic capability(Lee Sang-Hun, 1998, pp43). In the midst of all that, those who can afford to access as much information as they need can enjoy the improved convenience by accepting new media, but to those who cannot afford, emergence of new media can cause structural inequality due to information gap.

The theoretic approaches related to such information gap problems can be broadly classified in two. One of the approaches is the view that information gap will expand rather than mitigate as informationization progresses in the standpoint of information gap hypothesis. This theory proposes to utilize universal service as a way to resolve information gap in the analysis that possession of information becomes the source of new inequality as new media like internet, digital TV, etc rapidly expand. In this regard, Schiller(1996) argues that information gap will further expand due to deregulation, privatization, etc that are in progress throughout the entire areas of cultural industry, and Castells(1999) maintains that introduction of information communication technology further deteriorated income and information gaps. Therefore, information gap hypothesis emphasizes that to resolve information gap, efforts need be enforced not only for support to help low income residents afford information communication devices and use the services but also resolution of aggravated wealth inequality from introduction of market competition principles and information communication technology. The other approach, an expansion theory, is that the social problems by information gap, only temporary phenomena, will be resolved along with the progress of informationization. Scholars maintaining such standpoint include Negroponte(1995) who see that new society will emerge by introducing information technology, Naisbitt(1982) who emphasizes that this era is an era of economy based on generation and supply of information, Alvin Toffler(1990) who emphasizes that tremendous changes are occurring to existing power relations depending on accessibility to information and Wurman(1989) who asserts that the

problem is the information anxiety, a psychological anxiety created by floods of information rather than by scarcity of information.

Recently, focuses are being directed to the interest in discussions on specific policies to resolve information gap in realistic standpoint. This approach, the standpoint assumed by most of administrative bodies including advanced countries, presumes that though the severity of information gap is admitted, it is not unresolvable but can be resolved by interference by government policy. In such viewpoint, it is being admitted little by little as granted that broadcasting services be supplied in 'user payment principle' as various new media emerge such as internet access service using cable broadcasting and satellite broadcasting, etc in broadcasting section as well. As a result, to access broadcasting contents, considerable amount of costs are demanded for purchase of broadcasting receivers and use of broadcasting services, and as mentioned above, such phenomena may expand information gap by socio-economic gap, and can further aggravate socio-economic inequality structure.

<Table 1> Various Types of Information Gap

Class		Information Gap Types
Information Subjects	Gap	between genders, between classes, between generations, between regions, between private sector and public sector, between the disabled and non-disabled, between countries
Information Objects	Gap	Analog and digital information gap, daily life gap and operation related gap
Information Severity Degree	Gap	Information scarcity, information shortage, information classification, information segregation
Information Mechanism	Gap	Information access gap, information utilization gap, information production gap

3) Network Externality

Network externality means the phenomena where value of the network increases for no expense of cost as added subscriber gains access. There used to be various existing researches rationalizing universal service or arguing expansion of the range with such network externality as theoretic basis. Taylor(1994) maintained that in case network externality exists, the socially desirable scale of networks can be

greater than the scale determined only by market function, and also to reach the number of subscribers of socially desirable level, payments of subsidy are demanded, and such subsidy should be procured internally from among existing subscribers. Noam(1992) also proved similar theory using virtual model. According to his argument, in the case of network externality, external factors are necessary for network scale to expand beyond private optimum and reach social optimum level. In addition, Jacques Cremer(2000) analyzed network externality of internet service supply centered around mail transfer, and reached the conclusion that supply of universal service(subsidy) for internet service on network externality restriction condition will increase social welfare.

In the meantime such major papers maintain that introduction of universal services are necessary based on network externality, it is analyzed that network externality, the introduction argument of major universal service system of communication sector, can be applied to broadcasting as well, since broadcasting service which established receiving network that uses electric communication equipments and has been unilaterally delivering broadcast programs including voice and video for unspecific multitude of people is supplied by establishing bilateral broadcasting network just as communication service. This means that since utilization may increase by increase in subscribers number also through broadcasting network, existing subscribers are willing to pay subsidy within the range they gain some profit, so it is proper to seek network expansion by restoring subsidy from existing subscribers.

4) Trend of Charging Fees on Broadcasting Services

As broadcasting transitions from public goods that are available to anybody to payable goods which are consumed selectively only by specific people, the authenticity maintained by government broadcasting regulations based on public interested is gradually losing the foundation. Of course analogue type ground wave broadcastings evaluated as representative public interests broadcasting are still provided free, however in the case of paid broadcastings like general cable

broadcasting, relay cable broadcasting, etc, they are operated as paid broadcasting, and the business sections are growing diversified. Also, with the on-set of Skyclife, a satellite broadcasting in March, 2002, paid broadcastings changed from cable broadcasting monopoly era to competition structure where fierce competitions between both broadcasting businesses are demanded for subscribers inducement are demanded. The trend of changes for charging for broadcast services are anticipated to further accelerate along with digitalization of ground wave broadcasting, and recently, ground wave broadcasting businesses also are pursuing profit models through advertisement, contents re-sale or paid contents service, e-Commerce, etc by charging for use of homepage of each company.

Consequently, such trend of charging for broadcasting means that broadcasting as public service should consider accessibility to low cost fee just like communication service, charged service. In such context, switching to charge of broadcasting service requires review on the problem of universal supply of public service that cannot be solved only through commercial market function, and it means that no restriction should be placed to access to basic broadcasting service due to economic stringency or local disadvantage(Ryu Chun-Yeol, Bae Jin-Han, 2000, pp153~ 154).

B. Consistency of Public Interests of Broadcasting in Merged Environment

In spite of so many arguments speaking out universal service introduction possibility of broadcasting, a considerable number of broadcasting scholars seem to maintain the standpoint that intrinsic differences between broadcasting and communication should be recognized. In other words, the intrinsic difference between communication which is a bilateral sending and receiving behavior and broadcasting that unilaterally delivers broadcasting programs containing voice and video to unspecified multitude of people will not disappear even at the advent of fusion.

On such basis, an argument is being raised that with broadcasting and communication assumed to be based on different type of communication, broadcasting will be noted for its social influence as it will remain one to multitude

communication method even if fusion of broadcasting and communication accelerates, but communication can only remain in the domain of individual usages as it is one to one communication type. Consequently, the standpoint in summary is that while broadcasting is noted for software as contents -- the delivered contents of broadcasting, communication will hardly be able to replace public interests of broadcasting since it is a concept of universal service that guarantees the possibility for simple usage, being organized with hardware, network.

Therefore, broadcasting media which is of the nature of public interests cannot be measures of private interests even in merged environment and the public interests of broadcasting will not easily change, which is supposed to serve the interests of the public at large and the interests of the entire society. The reason broadcasting emphasizes public interest as such is to solve problem of finite scarcity of radio wave that distributes multi-faceted values existing in overall society, that is, diversity of social value, and limited nature of broadcasting radio wave. In particular, they argue that in case broadcasting ends up as measures for simple pursuit of interests or tool for power going beyond the scope of public interests when the social influence of broadcasting is growing ever, contemporary democratism which is based on diversity of opinions and the convergence cannot but be fundamentally intimidated. However, in spite of arguments that users' broadcasting using rights should be guaranteed under the concept of broadcasting public interests, there are still opinions that it is necessary to evolve or partially complement the concept of public interests of broadcasting to suit digitalized environment than to accept the concept of broadcasting in analog broadcasting era.

C. Discussion

So far, we compared and analyzed theoretic researches on introduction of universal service of broadcasting. As mentioned above, the introduction method of universal service of broadcasting service has been given theoretic support by changes in regulation principles by fusion phenomenon of broadcasting and communication, resolution of information gap by admission of new media, network externality effects by securement of bilaterality of broadcasting service expansion of paid broadcasting

and guaranty of access right of users. On the other hand, the standpoint that the public interests of broadcasting is unchangeable maintains that since the intrinsic nature of broadcasting is maintained in spite of changes like fusion phenomenon, etc of broadcasting and communication, introduction of universal service to broadcasting field should be cautious, but rather conversion of public interests of broadcasting in a way suitable in digital era and applying the obligation of public service are appropriate in guaranteeing users' using right of broadcasting and secure public interests of broadcasting.

To sum up, law institution improvement directions to maintain public interests under fusion of broadcasting and communication can be broadly into two, and the first direction may be the method to transform traditional trusteeship model executed on the basis of public interests concept of broadcasting. Such approach is the method to enforce that public interests programs can be sustainably provided by transforming traditional regulation paradigm. In specific, possible models include 'pay or play' proposed by digital advisory committee, 'mixed model' that partially guarantees access on payment of frequency usage and 'public interests domain model', etc in which restored partial frequencies are used only for the purpose of public interests.

In the next, broadcasting sector also will be able to consider method to guarantee public interests of broadcasting by institutionalize universal service that guarantees broadcasting using rights of users and by expanding media access rights. In fact, the concept of universal service is embedded as important policy objective in broadcasting policy as well as in communication regulation because it pursues to alleviate social inequality structure by guaranteeing political minority class, economic poverty class and socio-culturally estranged class minimum information access opportunities that they should deserve as member of society and by keeping the information, convenience and interests provided by media not biased toward the privileged class. In practice, universal service problem is bound to be given more importance in fusion environment where users cannot but be differentiated depending on economic approach capability. Access right to media proposed in

broadcasting, which means guaranteeing all citizens uniform opportunity to use media, also can be interpreted in the same category.

3. Issue of Institutionalization of Broadcasting Universal Service

Though there are on-going attempts to seek institutionalization of universal services of communication field in broadcasting field as well under fusion environment of broadcasting and communication, opposing arguments are also strongly raised maintaining that that can be implemented through complementation of existing trusteeship model as mentioned. In such situation, it is impractical to quantify the amount of social benefits of broadcasting in fusion environment by certain institutional improvement, so it is difficult to determine short term broadcasting universal service introduction.

However, in spite of such considerable disputes and theoretic difference on universal service of broadcasting, there were also quite some disputes while introducing universal service to public domains that were privatized in the past, and in the long run there is a growing interest in institutionalization of universal service of broadcasting in new media environment under the premise that contents will be influenced more by selection by consuming users than by broadcasting recognition or communication recognition in fusion environment called All-IP. The recent continued expansion of issues and arguments on universal service of broadcasting may be understood in similar context. Thus, this chapter intends to identify specific issues being raised regarding universal service of broadcasting and briefly arrange the applicable arguments so far.

A. Obtaining Contents Neutrality and Universality in Broadcasting

As for introduction of universal service of broadcasting, the argued point is that it is suitable for new media fusion environment and market oriented competitive environment in preparation for broadcasting charging but guaranty of socio-cultural function, etc like public broadcasting, etc is difficult. The point of such argument indicates that broadcasting should be oriented toward the entire group of nationals

rather than grant simple access using right. In other words, in the case of broadcasting, it should be able to be accessed by all people for supply of nationwide news, current events program and sports games, the interest by all nationals while delivering diverse programs with no estranged class in broadcasting by abstaining from programs satisfying only the tastes of particular class(Choi Yang-Su, 2001, pp51~52).

For such reason, in case universal service of broadcasting is introduced, the issue of whether the provided program contents neutrality or universality may be guaranteed is being raised. In other words, traditionally the universal service of communication did not raise issue to the appropriateness and universality or media neutrality of the contents being delivered through media. That is because communication is a private sector between both parties, and restriction of transferred contents may be restriction of communication itself. However, since the introduction of internet, the reality is that communication sector is also given restriction through ethical screening for unethical contents and programs in breach of social customs and it analyzed that continued complementation and reinforcement will be made for contents screening method, etc.

However because the in-laid question raised in broadcasting field emphasizes the contents neutrality and universality in media aspect that complies with the intrinsic function of broadcasting than at screening level such as transferred contents through internet, very discrete approach is needed how to complement and satisfy such aspects when universal service is introduced in practice. In this regard, current broadcasting law stipulates that universal service of broadcasting shall maintain universality in setting up broadcasting schedule simultaneously while providing ground wave broadcasting for free to ground wave broadcasting businesses(KBS1 and EBS), the public broadcaster, and shall finance the fund by collecting fees of quasi taxation nature.

Consequently, discussion of universal service institutionalization appears to require further verification, and in particular as for contents neutrality and universality, which are the socio-cultural regulations related to basic principles and concept of universal service, wide range of social agreements need be preceded. In other words, even

when the broadcasting market sees a trend where the ratio of paid service continue to expand, there need be agreements by majority of members of the society on methods to guarantee that they broadcast nationwide news or current events and literature programs, sports of strong nature as national event, high quality arts or science, literature programs, etc on contents neutrality and universality.

B. Conversion to Digitalization and Maintenance of Ground Wave Broadcasting

The entity that is given the sharpest edge of argument related to institutionalization of universal service of broadcasting is ground wave broadcasting, and in particular, there have been wide range of arguments on how to maintain digital broadcasting through free public service or universal service even later on in connection with the time for conversion to digitalization. As is noted, the situation is that ground wave broadcasting is converting from analog to digital from October, 2001, however still the supply rate of digital TV is not that high. In 2001, digitalization execution committee decided to stop analog broadcasting in 2010 on the condition of digital receiver household supply rate 95%, however due to insufficient supply rate, broadcasting committee once reviewed extension to 2012 through a service report in 2005. In the midst of all that, the government is preparing countermeasures by setting up digital TV through important policy projects like IT839, etc, but no legal system is prepared yet, and since the quality of program over the price of HDTV terminal and receiver are not differentiated from analog, it is still difficult in practice to solve through market function by voluntary inducement of consumers.

<Fig. 2> Status of Digitalization Conversion of Domestic and Overseas Ground Wave Broadcasting

Class	DTV Broadcasting Start	ATV Completion Schedule	Ground Wave Receiver Supplied Units Q'ty	All Households No.	Coverage	Ground Wave Channels No.	Multi- channel Approval	Major Source
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Korea	Oct., 2001	2010	990,000	17,500,000	86%	5 free	X	Samsung Electronics as of late 2005
U.K.	Nov., 1998	2012	6,500,000	25,000,000	73%	30 free, 100 paid	O	Screen Digest (2006)
France	May, 2005	2010	1,100,000	22,300,000	35%	13 free, 70 paid	O	
Germany	Jan., 2003	2008	1,640,000	38,400,000	57%	By the area, 24 free	O	
Italy	Feb., 2004	2006	3,300,000	21,200,000	70%	25 free or paid	O	
Sweden	Sept., 1999	2008	520,000	3,980,000	90%	31 free or paid	O	
Finland	Oct., 2002	2007	600,000	2,130,000	94%	15 free	O	Helsinginsa Nomat(2005)
U.S.	Nov., 1998	2009	6,800,000	106,600,000	99%	By the area – 30 channels USDTV – 40 paid	O	CEA(2005)
Japan	Dec., 2003	2011	5,570,000	38,200,000	60%	By the area – 8 free	O	NHK(2006)
Australia	Jan., 2001	Before 2009	920,000	7,600,000	90%	By the area – 5 free	O	DBA(2005)

Source: KBS(2006.11), Media Fusion Era Ground Wave TV Business Strategy, pp25

In such a situation, recently KBS is attempting 'TV reception fee actualization' to prepare fund for fund structure publicization and digital conversion, however since national assembly etc are raising criticism that public broadcasting system principles are undermined and also users are viewing via paid broadcasting like cable TV and satellite broadcasting, there is no visible sign willing to pay reception fee. In practice, for KBS to raise reception fee, the stipulation is that the issue need be resolved by KBS board of directors and be passed the national assembly by way of broadcasting committee review. In the meantime, the argument KBS maintains is that funds are necessary to keep up and expand higher quality free universal service to viewers, solve information gap and convert to digital broadcasting. In practice, the standpoint of KBS that recognizes it difficult to provide free universal service in a circumstance where digital conversion of ground wave broadcasting does not lead to a success is in some way understandable in regard to policy. That is because that can very probably restrict the rights of users to view digital broadcasting since digital broadcasting production conditions are poor and terminal price is high, due to high price of terminal due to insufficient resources in reality.

However, such argument about reception fee is in a trend to gradually spread to disputes on whether it is reasonable to maintain existing paradigm to guarantee public interests of broadcasting in new media environment recently. In other words, this argument is causing underlying disputes that new methods need be sought for that guarantees public interests of broadcasting in full scale competition condition with various new media in the future where most of viewers view ground wave broadcasting through paid broadcasting. What is important here is that they agree that public interests of broadcasting should be maintained, but the problem is whether guaranty of public interests of broadcasting through financial approach like reception fee, radio wave using fee and advertisement revenue, etc is appropriate or not. Furthermore, it can also work as important argument to what extent free the contents be provided as universal service in case digital broadcasting is provided for public interests. For instance, it is also recognized as a problem whether the level of broadcasting that provides only analog broadcasting in high quality when digital broadcasting is evaluated as new media capable of various additional services. In this regard, Yun Seok-Min(2005) maintains that a method to contribute to public

interests of broadcasting in overall sense is to contribute in a way that faithfully fulfills the duty of publicly operated broadcasting within existing ground wave broadcasting service domain yet improves business potential for new services.

Therefore, when facing the conversion to digital broadcasting, the government and broadcasting businesses need to have in-depth deliberation on providing and roles of ground wave broadcasting and financial structure in fusion environment of broadcasting and communication, and academic community also is raising various arguments. In this context, Jeong Yong-Jin(2006) recently divided broadcasting domains into three stages, and proposed differentiated regulation such that ground wave broadcasting maintain public interests regulations like mandatory supply of publicly operated broadcasting in public interests dimension; new media broadcasting keep public interests and universalism in parallel; and fusion type new media service be operated. This proposal analyzes that KBS is eligible for TV reception fee and support by national government since it is carrying out the duty as public interests operator such as KBS1 channel advertisement abolition, international broadcasting execution, etc while receiving various benefits like digital frequency allotment and possession limitation exception, etc, and MB, which is also a public broadcasting company operated with advertisement fund, can also be imposed with similar duties as publicly operated broadcaster though they have some difference from KBS/EBS. There are also arguments which maintain to give inducement for competition in all sectors of broadcasting unlike the above, improve efficiency and provide only part of ground wave broadcasting(KBS1/EBS) as public interests nature for free, yet guarantee broadcasting using rights for estranged classes.

In summary, to institutionalize broadcasting field universal service, it appears necessary to conduct in advance clear policy determination and social agreement in the least whether to rely ground wave broadcasting on public fund of public broadcasting base just as existing ones, or whether competition elements will be introduced. It is analyzed that such discussion will spread rapidly in the process of preparing public fund as digital broadcaster, and in particular, it is also anticipated that considerable amount of arguments are necessary for equality with policy considerations of digital conversion of cable broadcasting business. That means it

can lead to fundamental question what is the basis that ground wave broadcasting digital conversion makes greater contribution to social public interests than digital conversion of cable broadcasting.

C. Protection of Estranged Classes by Paid Broadcasting

The point where greatest consensus is formed regarding the introduction of universal service of broadcasting along with expansion paid broadcasting is that paid broadcasting needs to protect estranged classes. Communication field has been operating a system that guarantees minimum communication using rights by giving indispensable communication service for free or giving discount to socially disadvantaged or estranged classes such as the disabled, the aged or national veterans, etc by setting up supply range, so called welfare communication in universal service domain.

<Table 2> Communication Sector Welfare Communication Supply Subjects and Discount Contents

Discount (Reduction) Subjects	Discount Rate
<ul style="list-style-type: none"> ◦ The disabled, disabled welfare facility and disabled welfare organization by the disabled welfare law ◦ Special schools by elementary and secondary school education law ◦ Children welfare facility by children welfare law ◦ Beneficiary by national minimum life guarantee law ◦ Republic of Korea injured veteran association and 4.19 revolution injured association by national veterans, etc group establishment law ◦ War wounded veterans, public operation wounded veterans, 4.19 revolution injured, public operation government employee and national social development special contribution wounded and anti- 	<ul style="list-style-type: none"> ◦ Intra city phone service: monthly phone bill 50% reduction ◦ Extra city phone service : 50% reduction within 30,000 won liit of monthly phone bill ◦ Mobile phone service, personal portable communication service: Sign-up fee exemption and 30% reduction from standard bill plan or the base fee subscriber selected ◦ Wireless paging service: 30% reduction from base using fee ◦ Number guide service : 114 guide fee exemption

communism defection wounded among national men of merit by national men of merit, etc treatment and support law.	
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However, unlike communication, broadcasting has been recognized as universal service provided for free, so there is not discount system for estranged classes. In such circumstances, new media of fusion environment is emerging diversely, and various paid broadcasting services like cable broadcasting and satellite broadcasting, etc are available, and thus the conditions where estranged classes can take advantage of minimum broadcasting services are being narrowed down in reality. In this accord, there is a rising arguments that it is necessary to operate universal service to guarantee broadcasting using rights for estranged classes or similar public interests system. Such approach is recognized as policy measure to solve information gap (digital divide) among users while improving social equality. However, it is estimated that there need be discussions on extent of the services, discount level and subject range, etc.

D. Issues on Execution of Institutionalization

Institutionalization of universal service in broadcasting not merely gives a meaning as declarative regulation, universal service, but requires in-depth analysis for various issues for practical legalization. Such analysis issue can be diversely suggested depending on researchers, but in general key issues may be supply range, supply business selection, cost preservation system and fund organizing, etc. In specific, the supply range of universal service means the range of broadcasting service that should be provided mandatorily upon request by user according to universal service system. In the next, designation of supply business is to specify business appropriate to provide universal service and impose universal service supply duty. Theoretically, there are two methods of designating supply business: the specification method in which government unilaterally designates business and auction bidding method in which business participates voluntarily. Cost preservation system means the system that calculates costs that are generated as supply business supplies mandatorily, and preserves the cost. Lastly, procurement of fund

means procurement method that can compensate at proper level for the cost of supply business generated due to supply of universal service.

1) Supply Range

As the concept of universal service expands, there are active progress of discussions on the basic services that should be included in supply range of universal service. Such discussions are active in communication sector where universal service systems are already introduced and in operation, the basic services included in the universal service of communication sector are reviewed in the scope of public interests objective accomplishment in limitation to cases of indispensable goods in daily life and cases where the service is a goods indispensable for specific socially estranged class though not a goods needed for all people. This means that the supply range of universal service is not something confirmed institutionally, but a dynamic concept that changes in consideration of universality and public interests. For instance, recently the term 'universality of ultra high speed internet service' indicates the intention to expand ultra high speed internet service to the supply duty of universal service as the recognition that internet is indispensable to life due to internet development and expansion. Regarding this, Electric Communication Business Law Article 3 Paragraph 2(universal duty) Item 3 proposes judgement criteria specifically that should be considered when introducing universal service, and the supply range of universal service is stipulated to be specified by considering information communication technology development degree, electric communication duty supplied degree, public interests and safety, social welfare improvement and informationization promotion. It is determined that the experience of communication sector on such supply range selection criteria can be utilized in discussion of broadcasting sector as well in that it shares the concept that universal service guarantees minimum broadcasting(communication) using rights of the nationals.

Therefore, cautious approaches are required to determine whether or not certain field is important to guarantee minimum broadcasting using right in diverse broadcasting services like ground wave broadcasting, cable broadcasting(general cable broadcasting, relay cable broadcasting), satellite broadcasting, etc when

institutionalizing universal service of broadcasting. In current broadcasting law, ground wave broadcasting is defined as 'broadcasting performed using radio station on the ground with the purpose of broadcasting' in current broadcasting law, cable broadcasting as 'multi channel broadcasting performed using wired network rather than wireless one', satellite broadcasting as 'broadcasting that artificial satellite performs using wireless station'. Regarding broadcasting, considerable number of scholars judge that ground wave broadcasting and cable broadcasting need be discussed in supply range of universal service, however satellite broadcasting, DMB or digital broadcasting, etc are not at stage to mention universal service yet considering the supply degree or technology development apart from the matter of public interests(Yun Seok-Min, 2005).

2) Supply Business Designation

For universal service to be performed, they need to select supply business that can faithfully perform the universal service after being assigned with universal service supply service supply duty. Supply business selection should be done from among those that can provide universal service supply range the most efficiently, and should be made in a competition neutral way that it shall not affect competition among businesses, not causing excessive cost or preference by imposing supply duty. In general, supply business selection methods include the method that regulation organization directly designates business appropriate to accomplish policy goal and the method that selects by way of competition style. The former, which is the method to designate as appropriate business all the businesses that provide universal service or part of businesses that meet certain criteria, has the long point that it does not distort current competition structure much. However in case express or specific detailed criteria are not prepared, it is difficult to determine business selection course transparency, objectivity and economic efficiency, and cannot rule out possibility of arbitrary judgment. The latter, which selects single business that can provide service for minimum cost through business right auction in areas where competition is possible, is known to be the most efficient in economic standpoint. However it come with a limitation that there could be no applying business in case supply capability or competitiveness is insufficient.

3) Cost Subsidy System

Cost subsidy system indicates the discussion whether loss preservation is necessary in case universal service supply duty business provides the broadcasting service corresponding to the supply range, how loss preservation money is calculated and what type of cost subsidy will be chosen. In other words, cost subsidy system is the system that calculates the size of practically needed fund for loss preservation based on supply range, supply method and preservation ratio, etc and specifies procedure to supplement it.

In this context, analog ground wave broadcasting is regarded not in need of universal service fund resource, and in practice, also as for cost preservation method, it is very probable to increase broadcasting development fund, reception fee and subsidy money of national/provincial organization. In the case of cable broadcasting, it is very probable that approach be made in a way to directly subsidize by selecting socio-economically estranged class, and in such case, it would be necessary to consider the method to support by directly subsidizing the estranged class in a way similar to welfare communication.

4) Funding

There need be funding method that can compensate for the loss(cost) of supply business at proper level due to supply of universal service. Since such funding may inevitably cause economic distortion similar to taxation, there should be reasonable funding method considering minimization of economic distortion due to the funding, equality, long term stability of the system, administrative cost efficiency, etc. The funding method of existing universal service system can be broadly classified into the method that support with the government's general budget and the method the business takes the burden, however in most of national policy cases, businesses take the burden of the cost and they restore the cost from users mostly.

Also regarding broadcasting universal service institutionalization, practically required funding size may differ depending on the broadcasting service range and support subjects, etc included in the universal service, and in case universal service support

range expands or there are social agreements on the cost sharing of the business through universal service fund, separate funds may also be set up. In such case, they may consider the method in which all broadcasting businesses share universal service cost based on the fact that they benefit by utilizing the frequencies, the national required public goods.

4. Overseas Cases

A. Universal Service Supply Range Expansion Trend

Each country of the world is in the trend to expand and deepen the existing concept of universal service in response to rapid environmental changes such as heightening of information communication, fusion of broadcasting and communication and alleviation of regulation, etc. At the same time, they are seeking policies to prepare competition neutral and permanent universal service support system. In other words, they are in the trend of expanding universal service in comprehensive and positive direction including almost all fields of information and communication in narrow domain of telephone service.

The communication law of the U.S. revised in 1996 stipulates universal service "at evolving level which FCC will periodically set up communication service by considering electric communication technology, information technology and service development", and they are providing free internet service to public organizations like schools, libraries and rural area medical organization, etc in an approach to expand universal service which used to be limited to existing voice phone service to high end services. Also in the case of EU, with the supply established to a considerable extent like phones, internet access has been stabilized as indispensable service, and is defined as a universal service in the sense that it is a social stability network. In the same context, several countries along with the U.K. have sought expansion of internet service universal service supply range, however they are still at stages of discussion yet.

B. Universal Approach of Broadcasting

As the concept of universal service expands, there are growing active discussions on what basic services should be included in universal services, however so far the range is only limited to domains like communication service and postal service, etc in reality. In broadcasting domain, no discussions are in progress regarding institutionalization of universal service, however at the level of public interests, there are diverse on-going discussions on universality. In this context, European Broadcasting Union(EBU) is proposing the values digital era broadcasting businesses shall seek in 5 dimensions like 'improvement of contents universality', 'improvement of service approach universality', 'independence of editing right', 'supply of high quality services' and 'responsibility for service contents', etc(EBU, 2002). Also, OECD(2004) is limiting the universal supply of broadcasting in policy projects of communication field to free basic broadcasting, and as for policy measure types, EBU is expressing obligatory nature of service supply according to collection of reception fee.

Additional overseas consideration is that the universal access right of broadcasting is guaranteed. In the case of Europe, the universal access rights for sports and nationally important events are guaranteed, and specifically, in U.K., the U.K. Broadcasting Act revised in 1996 stipulates that new media like satellite broadcasting shall not possess monopolistic relay rights of nationally important event. Such provisions, since events like the King's inauguration ceremony or Wimbledon Tennis Tournament draw tremendous attentions of the nationals, intends to rule out situations where classes of economic disadvantage cannot see the events by granting exclusive relay right to paid broadcasting.

C. Implementation of Broadcasting Contents Neutrality and Universality

In fusion environment of broadcasting and communication, each country is in a trend further emphasizing the role of public broadcasting or ground wave broadcasting in the standpoint of realization of contents neutrality and universality. Germany is imposing public broadcasting with the duty of basic supply(Grundversorgung) which is equivalent to universal service. Particularly, German Constitutional Court recognized the speciality of public broadcasting, expressing that public broadcasting

is associated with characteristics like geographic universality, interest in national identity and culture, independence from the national government and commercial interests, impartiality(independence from political pressure) of program, range and acceptability of program, universal cost imposition on users, etc. Furthermore, U.K. government is also focusing the universal service policy of broadcasting so that all people may receive free public broadcasting service just as now even after digital conversion. Japan is imposing universal service duty on NHK, the public broadcaster according to Broadcasting Act provisions so that the reception shall be even throughout Japan and domestic broadcasting shall be done with affluent and good programs. Lastly, the U.S. also stipulates that frequencies will be assigned freely to ground wave broadcasting companies even in digital broadcasting era as well, and this is to show the stand that it is important for ground wave television services be universally used among American citizens.

5. Future Prospect

So far, we analyzed through various literature survey existing methods through public duty and methods that induce competition factors by introducing universal service as system to guarantee the public interests of broadcasting under broadcasting and communication fusion environment. The analysis results showed that since various new media are at early introductory stage and practical fusion phenomena of broadcasting and communication have not yet proceeded in full scale, the opinion that asserts the type of providing public service through public broadcasting is grasped to be majority opinion. Furthermore, in most of overseas cases analysis, the situation is that they are maintaining policy directions that keep up public interests of broadcasting under existing methods than institutionalize universal service.

In practice, the discussions in progress among domestic researchers seem most advanced regarding universal service of broadcasting, and this is analyzed not irrelevant to domestic broadcasting and communication technology development speed. In such a viewpoint, a number of scholars(Kim Dae-Ho, 2000; Ryu Chun-Yeol, Bae Jin-Han, 2000; Choi Yang-Su, 2001; Lee Su-Young, Park Eun-Hee, 2002;

Baang Seok-Ho 2004, Yun Seok-Min 2005, Seong Sook-Hee 2006; Jeong Yong-Jun 2006) in the nation are proposing the necessity of broadcasting universal service in part or as a whole with arguments like bilaterality by broadcasting and communication fusion, expansion of information gap, trend of charging for broadcasting and network externality, etc. In this accord, the discussion of universal service institutionalization of broadcasting and the relevant discussions are anticipated to expand and be strengthened in tune with the trend of fusion phenomena, expansion of new media, charging for broadcasting and personalization.

For conclusion, the results of discussions so far will be able to propose the following suggestions. First off, as alternative that guarantees approach to basic broadcasting service, institutionalization of universal service will need be sufficiently reviewed. This is due to the point that it is practically difficult to guarantee universal service, 'guaranty of minimum broadcasting using rights of the nationals' due to the changes in regulation paradigm and charging for broadcasting to keep abreast of technology advancements like broadcasting and communication fusion phenomena and digitalization of broadcasting service, etc. In particular, since generation of socio-economically estranged classes is very probable by expansion of new media and changes in broadcasting environment, preparation of systems similar to welfare communication at least are analyzed immediately needed.

Secondly, for the universal service of communication to be applied to broadcasting as well, contents neutrality and universality, the intrinsic characteristics of broadcasting need be complemented. In other words, to institutionalize universal service in broadcasting field, it is important to determine how to complement contents regulations in socio-cultural perspective as concept of contents broadcasting using right, which means that compromise needs be made in contents aspect as well as accessibility to media transfer measure.

Thirdly, as prerequisite for institutionalization of universal service of broadcasting, there need be clear determination of policy and social agreement on whether ground wave broadcasting shall be relied on public broadcasting based public resources the same as existing method, or whether competition factors will be introduced. Such

discussions are analyzed to rapidly expand in the course of preparing public resources for digital broadcasting, and in particular, considerable discussions will be required for equality with policy considerations of digital conversion of cable broadcasting business.

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