

2007 KDI International Conference

Competition Policy in Regulated Sectors:  
Focusing on the Institutional Design of the Relationship between  
Competition Authority and Sectoral Regulators

규제산업의 경쟁정책:  
각 산업의 감독당국과 경쟁당국 간 관계에 대한 제도 설계를 중심으로

July 10~11, 2007

Main Conference Hall  
Korea Development Institute

# **Effective Competition, Price Regulation and Collusion in the Telecommunications Sector**

Sangin Park

and

Hong-Suk Bok

Graduate School of Public Administration

Seoul National University

Email: [sanpark@snu.ac.kr](mailto:sanpark@snu.ac.kr)

June 2007

Ex ante regulation in regulated sectors typically aims to promote effective competition. The regulatory authority of the telecommunications sector in Korea has regulated pricing structure of the dominant firm as a means of effective competition. However, this regulation of pricing structure may facilitate collusion between the dominant firm and emerging competitors. In the paper, we critically reviewed so-called effective competition policy of Ministry of Information and Communications (the regulatory authority of the telecommunications sector) through the KFTC case of KT and Hanaro Telecomm in the fixed line telecommunications service market. Our analysis indicates that empirical evidence does not support concerns which motivated the price regulation. Instead the effective competition policy of MIC turned out to facilitate collusion between the dominant firm and fledging competitor. We suggest an alternative pro-competitive policy in which ex ante regulation provides the level playing field to fledging competitors, and ex post regulation focuses on predatory pricing and collusion.

Keywords: effective competition, price regulation, collusion, predation, level playing field, telecommunications sector.

## **I. Introduction**

A main policy goal of the Korean regulatory authority in the telecommunications sector (that is Ministry of Information and Communications) has been to promote effective competition. At the same time, the Ministry of Information and Communications (MIC) preferred facility-based competition to service-based competition since MIC believed facility investments could have spillover effects on other related industries. Hence for the promotion of effective competition, MIC allowed companies with facilities to enter the relevant market and then regulated the pricing structure of the dominant firm. The price regulation for the dominant firm was mainly to set a price floor of the dominant firm since MIC was concerned about the possibility that the dominant firm might wage aggressive price competition and eventually drive out the fledging competitors.

However, as recognized in the literature of Industrial Organization, this regulation of pricing structure may facilitate collusion between the dominant firm and emerging competitors. Recently, Korea Fair Trade Commission (KFTC) ruled that KT (the dominant firm in the fixed line telephone service) and Hanaro Telecom (the fledging competitor) colluded to set Hanaro Telecom's prices within a certain range of

KT's prices which are regulated by MIC.

We will review this collusion case of the fixed line telecommunications service in section II. Then in section III, we will analyze and argue that this price regulation to promote effective competition is indeed a managed market policy, which is likely to protect competitors rather than competition itself, ending up with a collusive market. We will proceed further to suggest an alternative pro-competitive policy which focuses on a level playing field. We will also argue that the possibility of predatory pricing of the dominant firm can be dealt in the context of competition law if two conditions of level playing field are met. We will conclude and discuss our implications to competition policy issues in regulated sectors in section IV.

## **II. The KT-Hanaro Telecomm Case**

In order to diminish the local call rates gap between the two companies, on June 23, 2003, KT and Hanaro Telecomm ("Hanaro") mainly agreed upon the following: In exchange for KT's transfer of 1.2% market share to Hanaro every year until 2007, KT would maintain its rates and Hanaro would either increase or adjust its rates. On this agreement between these firms, the KFTC found that although local fixed line telephone

service rates should be determined by individual firms and derived from each firm's particular circumstances and the market condition, the two firms coordinated to adjust their rates and market shares in response to the enforcement of LNP (Local Number Portability). Therefore, KFTC, on August 18, 2005, ruled their actions as unfair coordination (i.e., collusion) and fined KT to pay 113,048 million Korean Won (KRW) and Hanaro to pay 2,155 million KRW.

KT responded as follows. Hanaro was in a deteriorated situation which might result in its exit from the fixed line telecommunications service market. In order to rescue Hanaro and promote effective competition, MIC concretely guided KT and Hanaro between October 2002 and November 2002. The agreement on June 23, 2003 was unavoidably reached while they were complying with the administrative guidance of MIC. Hence, their action was "lawful and fairly justified" by Monopoly Regulation and Fair Trade Act, and if not, it at least fell into the category of reduction of or exemption from liability. In other words, KT argued that this particular action was irrelevant to unfair actions that KFTC tries to restrict, and it rather complied with the purpose of Monopoly Regulation and Fair Trade Act because aforementioned action saved Hanaro, a company that was in financial trouble, from exiting the market. Thus, it promoted effective competition and increased consumer welfare.

KFTC did not accept KT's arguments and offered the following rationales. First, KT's assertions that it had an agreement with MIC from October and November of 2002 and that MIC requests were met were irrelevant to KFTC conclusion. Indeed, KT voluntarily and actively pursued its goal which was prevention of loss and maximization of profit. Second, the MIC's requests and its agreement with KT not only had no binding power over KT, but also did not offer any valid or continuous management or guidance afterwards. Third, in order to qualify as the "lawfully fair act" as it is stated in the article 58 of Monopoly Regulation and Fair Trade Act, there should be a legal aspect that specifically accepts an exception from open competition or it should be considered as the necessary minimum act. However, this agreement does not comply with Telecommunication Business Act that promotes effective competition. Lastly, even if we might restrict free competition for the sake of effective competition, the tactics, such as artificial price agreement and transfer of market share among competitors, could not coincide with the goals of Monopoly Regulation and Fair Trade Act.

It seems to be unreasonable to deny that the agreement between KT and Hanaro was collusive. However, what is critical to the lawfulness of this agreement seems to depend on whether the agreement was made by complying with unavoidable

administrative guidance by MIC. In the paper, we have no intention to make any judgment on lawfulness of this agreement. Instead we use information available from the KT-Hanaro case to provide our analysis of the effective competition policy of MIC.

### **III. Competition Policy in the Telecommunications Sector in Korea**

#### *1. Effective competition policy of MIC*

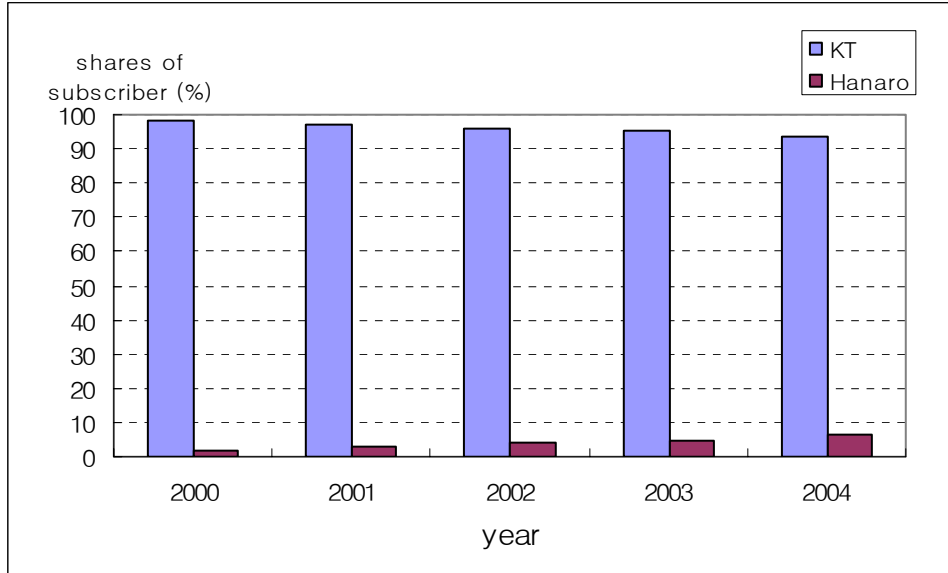
The price regulation on the dominant firm by MIC reflects two-folded concerns. First, MIC is concerned with the possibility that the dominant firm sets a monopoly price which results in welfare losses. Second, MIC is worried about the possibility that the dominant firm engages in aggressive pricing and thus drives out the fledging competitors. With these two concerns in mind, MIC pursues the price regulation as a means of effective competition. Specifically by imposing the price regulation on the dominant firm only, MIC aims to reduce the discrepancy of market shares between the dominant firm and fledging competitors, a smaller discrepancy of which MIC believes indicates a sufficient condition for effective competition.

The first concern of MIC assumes that the fledging competitors may not be

competitive enough to constrain the dominant firm's wielding of monopoly power, while the second concern presumes that the fledging competitors may constrain the monopoly power of the dominant firm but may not be (cost) efficient enough to survive severe price competition waged by the dominant firm. The idea of price regulation and effective competition of MIC is indeed a policy of 'managed market' since these two concerns are based on the perceptions that the market does not provide a level playing field to fledging competitors and thus the regulator has to manage to keep the competition (actually competitors instead of competition itself) alive. In what follows, we will conduct a reality check to see if these concerns are valid in the case of fixed line telecommunications service market.

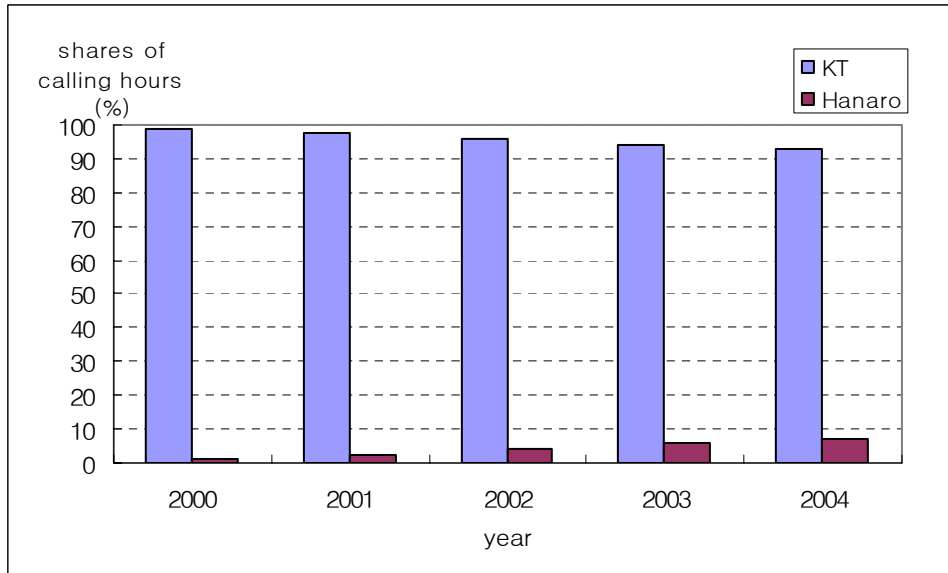
First, we will check whether the fledging competitors could constrain the monopoly power of KT (the dominant firm in the fixed line telecommunications service market). As indicated in figures 1 – 3, the market share of KT steadily declined in terms of subscribers, calling hours, and revenues, while the fledging competitor, Hanaro, continued to gain its share in these three categories. We do not have sufficient information to infer whether these changes in market shares reflect the competitiveness of Hanaro or the result of MIC's so-called effective competition policy.

<Figure 1> Market Share in the Number of Subscribers



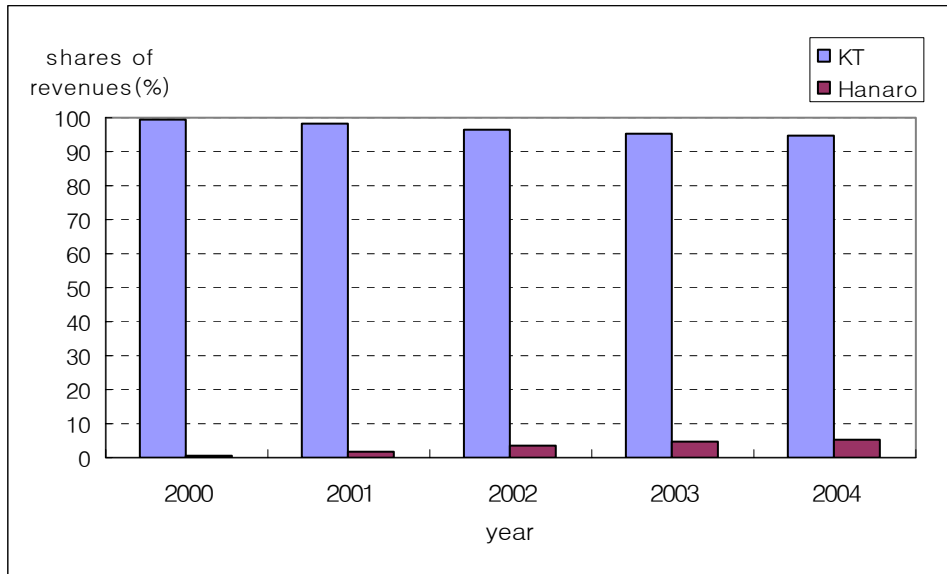
Sources: KFTC

<Figure 2> Market Share in the Calling Hours



Sources: KFTC

<Figure 3> Market Share in Revenues

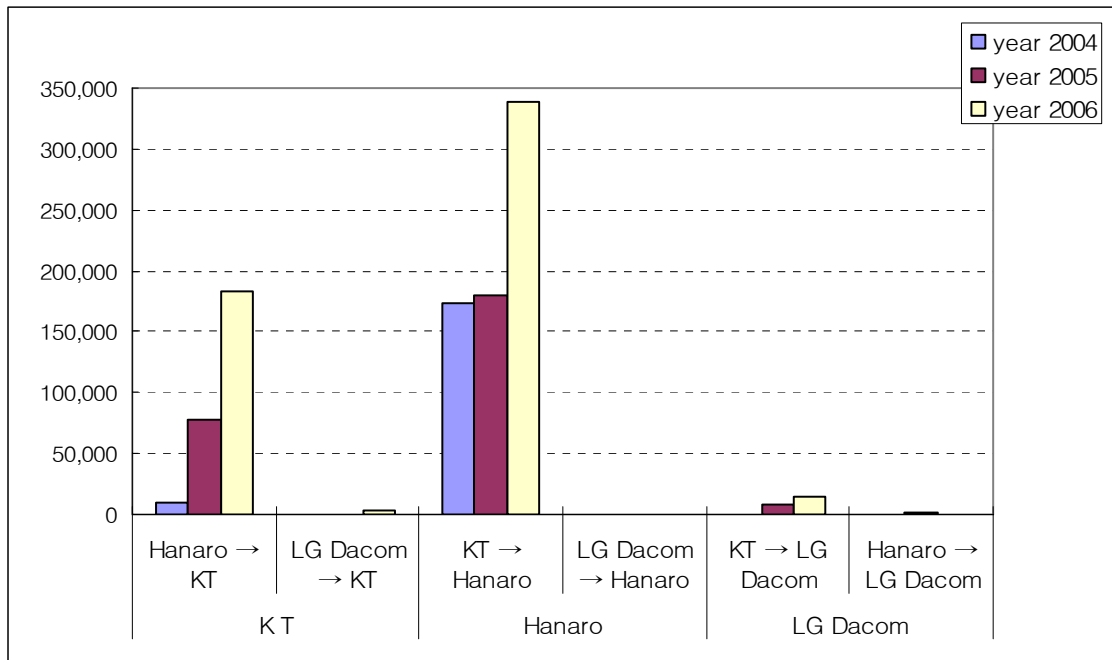


Sources: KFTC

However, a couple of institutional changes in the industry indicate that KT might not any more enjoy barriers to entry or consumers' lock in due to switching cost. First, MIC introduced the policy of Local Loop Unbundling in 2003 and thus facilitated the service-based competition in the fixed line telecommunications service market. Second, Local Number Portability was introduced in 2003. As shown in figure 4, the number of consumers who switched between competing carriers of fixed line telecommunications service has increased year after year although the number of total subscribers has remained almost unchanged. In 2004, 183,267 consumers switched between carriers while in 2006, 593,324 consumers switched. Figure 4 also indicates

that more consumers switched from KT to Hanaro.

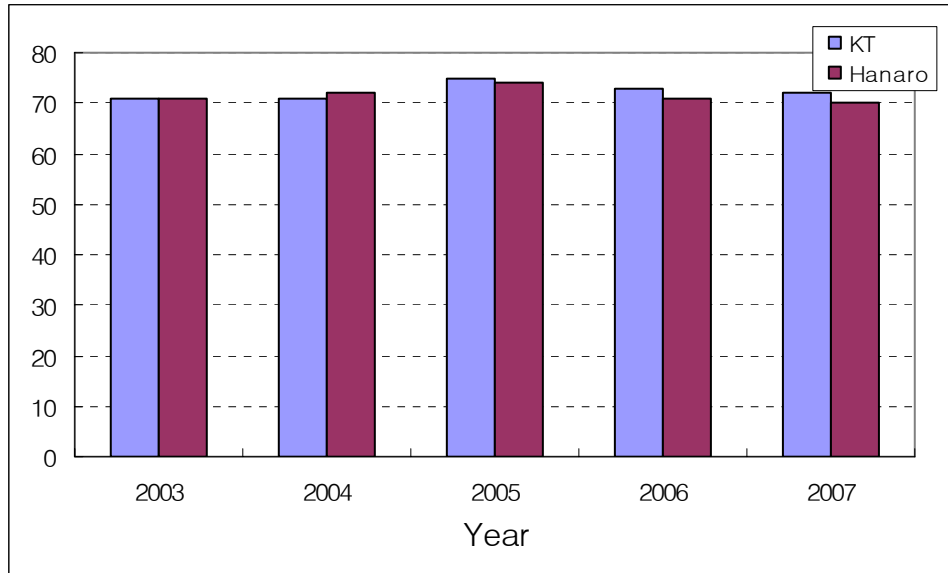
<Figure 4> Users of Local Number Portability



Sources: MIC

In addition, the fledging competitors have expanded their facilities and improved the quality of their services. As a result, Hanaro and LG DACOM (another fledging competitor) began to provide a nationwide service from May 2007, and consumers perceived no significant difference in the quality of services between KT and Hanaro. As shown in figure 5, KT and Hanaro have score similar points in the National Consumer Satisfaction Index (NCSI) reported by Korea Productivity Center.

<Figures 5> National Consumer Satisfaction Index (NCSI)



Sources: Korea Productivity Center

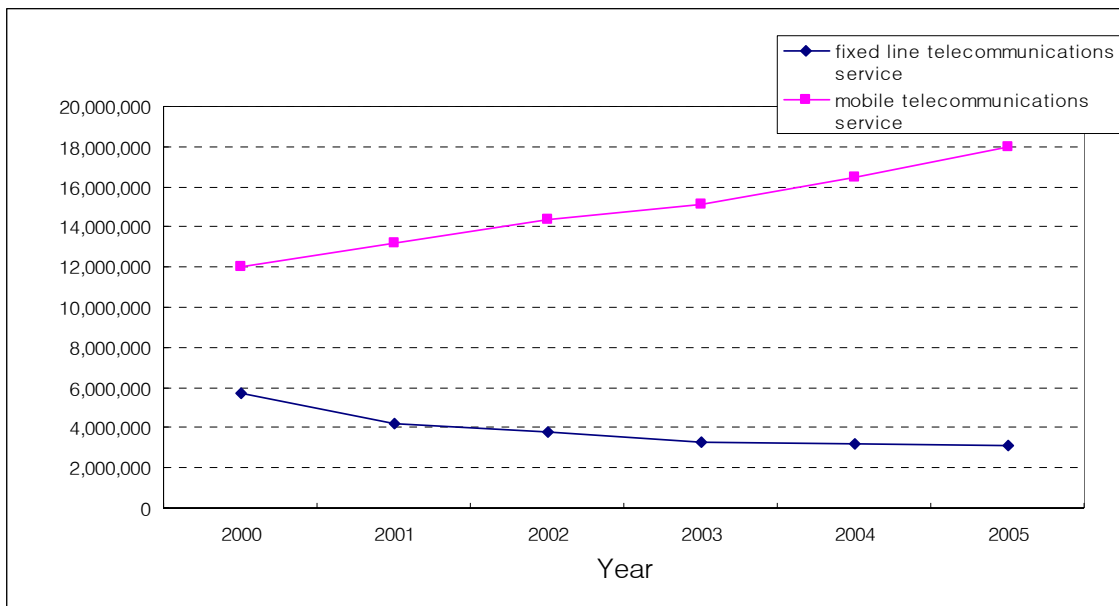
The competition form mobile communications services and the potential competition from VoIP might also constrain the KT's monopoly power in the fixed line telecommunications service market. Figure 6 illustrates the revenues of the mobile communications service increased from 2000 while the revenue of the fixed line telecommunications service decreased. Several studies<sup>1</sup> indicate increasing and significant substitutability between mobile telecommunications calls and fixed line telecommunications calls. On the other hand, from the second half of 2007, the VoIP

---

<sup>1</sup> Refer to Byun et al. (2003).

signifier '070' will be eliminated and number portability will be introduced. Hence VoIP service is expected to reach resident telephony service market in Korea.

<Figures 6> Revenues (unit: Million KRW)



Sources: [www.itstat.go.kr](http://www.itstat.go.kr)

The foregoing evidence indicates that the first concern of MIC may have no ground. Indeed MIC seems to be more concerned about the possibility of aggressive price competition which might result in the exit of fledging competitors in the fixed line telecommunications service market. However, in what follows, as we will discuss that this second concern has no ground either.

First, the dominant firm (KT) did not wage the price war in the market and we

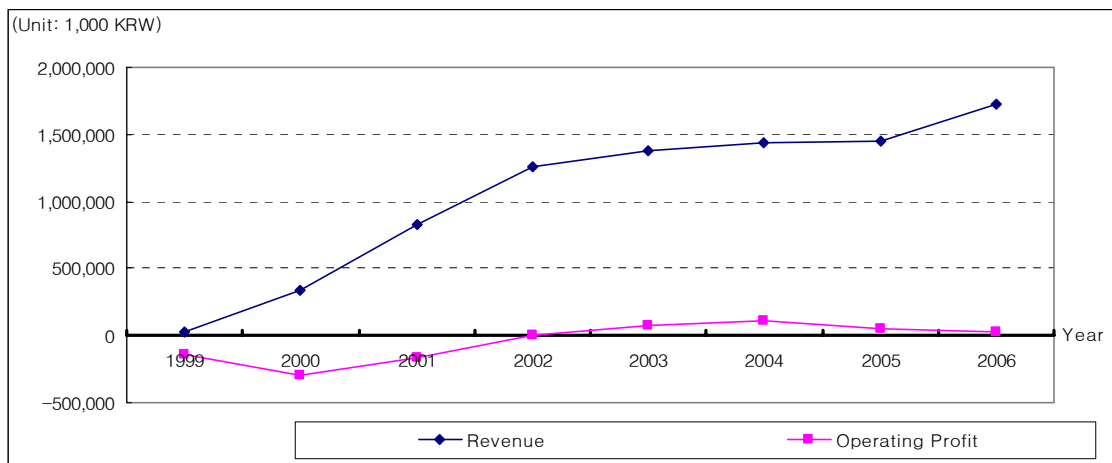
have no evidence to believe it would in the future. As of June 2003 prior to the collusive agreement between the two firms, it was Hanaro that engaged in more aggressive pricing. As shown in table 1, Hanaro charged lower or at least the same fees and call rates in every category. Indeed it is a dominant firm which would suffer from more losses of revenues from severe price competition because it has higher sales.

<Table 1> Pricing Structure of KT and Hanaro as of June 2003

		Pricing Structure	
		KT	Hanaro
<b>Subscription fee</b>		60,000 KRW	None
<b>Basic fee</b>		5,200 KRW	Basic Service: 3,500 KRW
			Bundled Service: 1,000KRW
<b>Rate</b>	<b>Basic</b>	39 KRW per 3 minutes	39 KRW per 3 minutes
	<b>Discounted</b>	None	Available
<b>Caller ID</b>		2,500 KRW	1,000 KRW
<b>LM usage fee</b> (per 10 seconds)		Regular - 15.63 KRW Discounted - 14.81 KRW Special - 13.99 KRW	Regular - 15.00 KRW Night - 14.00 KRW Late Night - 13.00 KRW

Second, Hanaro's financial status was improving as of 2003. As shown in figure 7, Hanaro's revenue continued to increase and its operating profit became positive from 2002. Table 1 and figure 7 are combined to suggest no evidence that Hanaro might suffer from aggressive pricing of KT (the dominant firm).

<Figure 7> Revenue and Operating Profit of Hanaro (Unit: 1,000 KRW)



Sources: Financial Supervisory Service.

## 2. A suggestion for pro-competitive policy

The idea of price regulation and effective competition of MIC is indeed a policy of 'managed competition' rather than a true 'effective competition'. In this subsection, we will suggest an alternative policy for effective competition in the

telecommunications sector, which provides the level playing field for fledging competitors.

As discussed in the above subsection, the effective competition policy of MIC is based on the concern that the fledging competitors may not be competitive enough to constrain the dominant firm's wielding of monopoly power or to survive severe price competition waged by the dominant firm.<sup>2</sup> With these concerns in mind, MIC pursues the price regulation as a means of effective competition. Specifically by imposing the price regulation on the dominant firm only, MIC aims to reduce the discrepancy of market shares between the dominant firm and fledging competitors. However, as illustrated in the KT-Hanaro case, this price regulation may facilitate collusion between the dominant firm and fledging competitors. Indeed, the price regulation may lead to a typical umbrella pricing scheme.

It is needless to re-emphasize the harms which collusion inflicts to society. To promote competition, the regulatory authority should aim to protect competition itself, not competitors. To promote competition, the regulatory authority may choose a policy to create the level playing field to fledging competitors. In the context of telecommunications service, we propose two conditions for the level playing field:

---

<sup>2</sup> Note that the evidence from the KT-Hanaro case does not support this concern.

equal (cost-adjusted) quality of service and commercially viable size.

The equal (cost-adjusted) quality of service means that the dominant firm and fledging competitors can provide the same quality of service with the same cost, or quality difference can be justified by cost difference. The commercially viable size means the minimum scale of production necessary to benefit from the economy of scale enjoyed by the dominant firm. To assure the commercially viable size of the fledging competitor, the regulatory authority may order either sales of dominant firm's some facility or Local Loop Unbundling for effective service-based competition.

With the level playing field, the regulatory authority does not have to worry about the competitiveness of fledging competitors. With the level playing field, the dominant firm cannot drive out the fledging competitor by waging aggressive pricing, which may indeed inflict more sales loss to the dominant firm. In order to drive out the fledging competitor, the dominant firm must engage in predatory pricing, which is illegal. Predatory pricing will inflict more harm to the dominant firm until it succeeds. Moreover, it is more likely to be detected by the regulatory authority in the regulated industry. In addition, the lowered barrier to entry may deprive the dominant firm of the incentive for predatory pricing.

The regulatory authority which provides the level playing field to the entrants

may have to pay more attentions to possible collusion in the industry. As predicted in the theoretic studies, the level playing field may lead to similar market shares of the incumbent and the entrants in the end,<sup>3</sup> and the firms to produce same quality of service may be relatively easier to collude.<sup>4</sup>

#### **IV. Conclusion**

In the paper, we critically reviewed so-called effective competition policy of MIC through the case of the collusion between KT and Hanaro Telecomm in the fixed line telecommunications service market. Our analysis indicates that empirical evidence does not support concerns which motivated the price regulation. Instead the effective competition policy of MIC turned out to facilitate collusion between the dominant firm and fledging competitor. Hence we suggest an alternative pro-competitive policy which provides the level playing field to fledging competitors. Once the level playing field is provided to entering firms, the competition policy of the regulatory authority may have to focus on the possibility of predatory pricing and collusion.

---

<sup>3</sup> Refer to Nayyar (2001).

<sup>4</sup> Refer to Balra (2000).

## References

- Armstrong, M.(1998), "Network Interconnection in Telecommunications,"  
*The Economic Journal*, 108 (448), 545-564.
- Averchy, H. and Johnson, L. L. (1962), "Behavior of the Firm under Regulatory  
Constraint," *American Economic Review*, 52 (5), 1052-1069.
- Baranes E. and Bourreau M. (2005), "An Economist's Guide to Local Loop  
Unbundling," *Communications & Strategies*, 57 (1), 13-31.
- Barla, P. (2000), "Firm size inequality and market power," *International Journal of  
Industrial Organization* 18 (5), 693-722.
- Baumol, W. and Sidak G. (1994), *Toward Competition in Local Telephony*,  
The MIT press.
- Baumol, W. and Willig, R.(1981), "Fixed Costs, Sunk Costs, Entry Barriers, and  
Sustainability of Monopoly," *Quarterly Journal of Economics* 96 (3), 405-431.
- Bourreau, M. and Doğan, P. (2004), "Service-based vs. facility-based competition in  
local access networks," *Information Economics and Policy*, 16 (2), 287-306.
- Brennan, T. (1995), "Is the Theory behind US v. AT&T Applicable Today ?"  
*Antitrust Bulletin*, 40, 455-482.
- Farrell, J. and Shapiro, C. (1988), "Dynamic Competition With Switching Costs,"  
*Rand Journal of Economics*, 19 (1), 123-137.
- Hausman, J. A. and Sidak, G. (2005), "Did mandatory unbundling achieve its purpose?  
Empirical evidence from five countries," *Journal of Competition Law and  
Economics*, 1 (1), 173-245.
- Huber, Kellog and Thorne (1999), *Federal Telecommunications and Law*,

Aspen Law & Business.

Laffont, J. and Tirole, J. (2000), *Competition in Telecommunications*, The MIT Press.

Laffont, J. and Tirole, J. (1996), “Creating Competition Through Interconnection: Theory and Practice,” *Journal of Regulatory Economics*, 10 (3), 227-256.

Milgrom, P. and Robert, J. (1982), “Predation, Reputation and Entry Deterrence,” *Journal of Economic Theory*, 27 (2), 280- 312.

Nayyar, A. (2004), “Entry In a Dynamic Model With Equilibrium Price Dispersion With An Application to The Market for Long-Distance Telephone Service,” *Journal of Public Economic Theory*, 6 (4), 577–592.

Noll, R. (1995), “The Roll of Antitrust in Telecommunications,” *Antitrust Bulletin*, 40, 501-528.

Huber, P. W., Kellog, M. K, and Thorne, J. (1993), *The Geodesic Network II*, U.S. Department of Justice, Antitrust Division.

Weiss, J. R and Stern, M. L. (1998) “Serving Two Masters: The Dual Jurisdiction of the FCC and the Justice Department over Telecommunications Transactions,” *CommLaw Conspectus*, 6, 195-212.

Witteloostuijn, A. and Maks, J. A. H. (1998), “Workable Competition and the Barrier Market, ” *European Journal of Political Economy*, 4 (1), 117-135.

공정거래위원회(2005), “2 개 시내전화사업자의 부당한 공동행위에 대한 건”,  
공정거래위원회 전원회의 의결 제 2005-130 호.

공정거래위원회(2005), “4 개 시외전화사업자의 부당한 공동행위에 대한 건”,  
공정거래위원회 전원회의 의결 제 2005-331 호.

- 변정욱 외(2003), “유무선전화의 대체성에 관한 계량적 연구,” 연구보고서 03  
15, 정보통신정책연구원.
- 성낙일 외(2000), “우리나라 이동전화 시장이 유선전화 가입 수요에 미친  
영향,” 한국통신경영연구소 Working Paper.
- 이문지(2001), “미국의 경제규제와 반트러스트법의 적용제외 : 통신산업의  
경우를 중심으로,” 『상사법연구』 제 20 권, 제 1 호, 693-722.
- 이봉호(1999), “시내전화서비스시장에서의 경쟁과 요금규제,”  
『정보통신정책연구』, 제 6 권, 제 2 호, 157-184.
- 전영서(2000), “유·무선 전화서비스간의 수요대체에 관한 연구,”  
『국제경제연구』, 제 6 권, 제 2 호, 175-193.
- 전영서(1995), “전기통신사업에서의 자연독점에 관한 실증연구,”  
『정보통신정책연구』, 제 2 권, 제 1 호, 115-148.
- 최선규(2004), “유무선융합과 통신시장 비대칭규제 : 공정경쟁인가 관리경쟁  
인가?”, 『정보통신정책연구』, 제 11 권, 제 1 호, 1-22.