



Mobile Network Neutrality in Smart Phone Era

1st Asia-Pacific Regional Conference of
the International Telecommunications Society
August 28, 2010

Joon Young Kim¹, Jin Kyung Park² and Bong Gyou Lee²

¹SK Research Institute, ²Yonsei University

Seoul, Korea



Contents

- ❑ **Introduction**
- ❑ **Literature Review**
- ❑ **The technical differences between
Wireline and Wireless Internet Environment**
- ❑ **Potential Negative Impact of the Network Neutrality**
- ❑ **Conclusion**





1. Introduction

□ Network Neutrality

- Initial concept: how to regulate network providers design, manage, and price the use of their network
- Shares the fundamental concept of the internet's openness: **No data traffic should be discriminated for its characteristics, contents, or the size**
 - The main debate has been between large internet contents providers and the internet service providers with network on imposing certain limitation or differentiated price

□ Wireless Internet is..

- Started as a closed walled garden system charging **by the packet**
- The traffic discrimination in wireless internet is rather natural compare to wireline's open internet environment
- The most important difference is perhaps **the spectrum bandwidth**
 - This capacity constraint makes it difficult to implement the Net neutrality principle in wireless market

□ Now... the wave of Smartphone

End user's Right of the Access
vs. net neutrality affects negatively in investment incentive





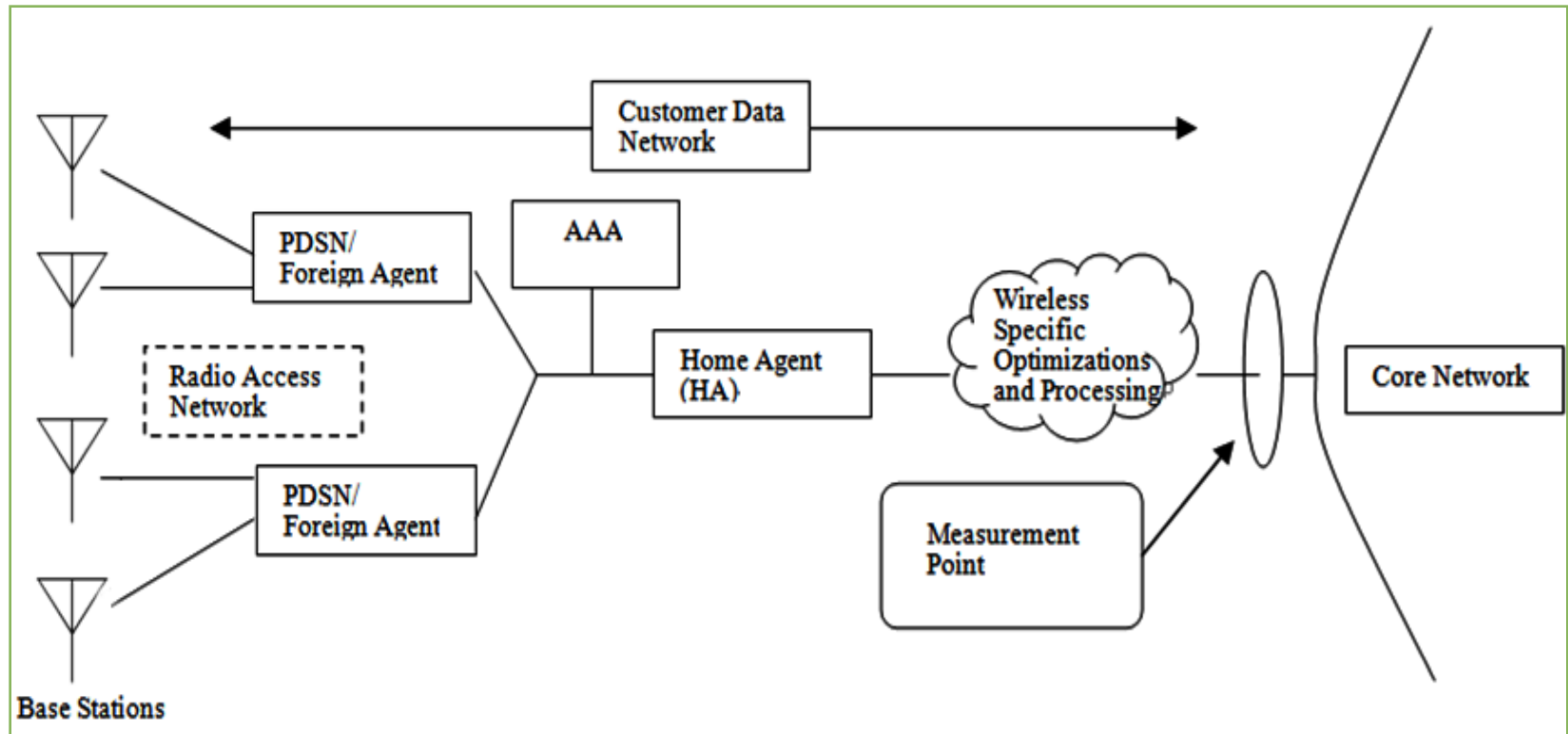
2. Literature Review

- Jonathan Zittrain: the Internet needs to be treated as **a type of commons**. "**must carry**" pipeline that doesn't favor some content at the expense of other. Not to discriminate the streaming speed of Youtube.
- Timothy Karr: actively argues that how net neutrality is beneficial for the end users and network carriers are against it to protect their legacy business model. He is also right about protecting consumers' choice and the free flow of information online. He also said network neutrality has to be enforced regardless of the platform and FCC has opportunity to right the wrong.
- David Farber, Gerald Faulhaber(2010), argued that the internet needs a makeover. They also pointed out that the FCC should not waste its time with pointless, costly regulation; it should facilitate competition so that customers can choose for themselves if and how much network neutrality they want.
- Hart(2007) also said in his book prioritization of bandwidth is necessary for future innovation on the Internet.
- Stephen Pociask(2007) argued in his study that despite proponents' best intentions, net neutrality proposals would be a twofold problem for consumers. Innovations that require a guaranteed level of service won't come to market, and consumers would have to pay more for the services they receive.



3. The technical differences between Wireline and Wireless Internet Environment

❖ Fig 1. Wireless and Measurement Architecture

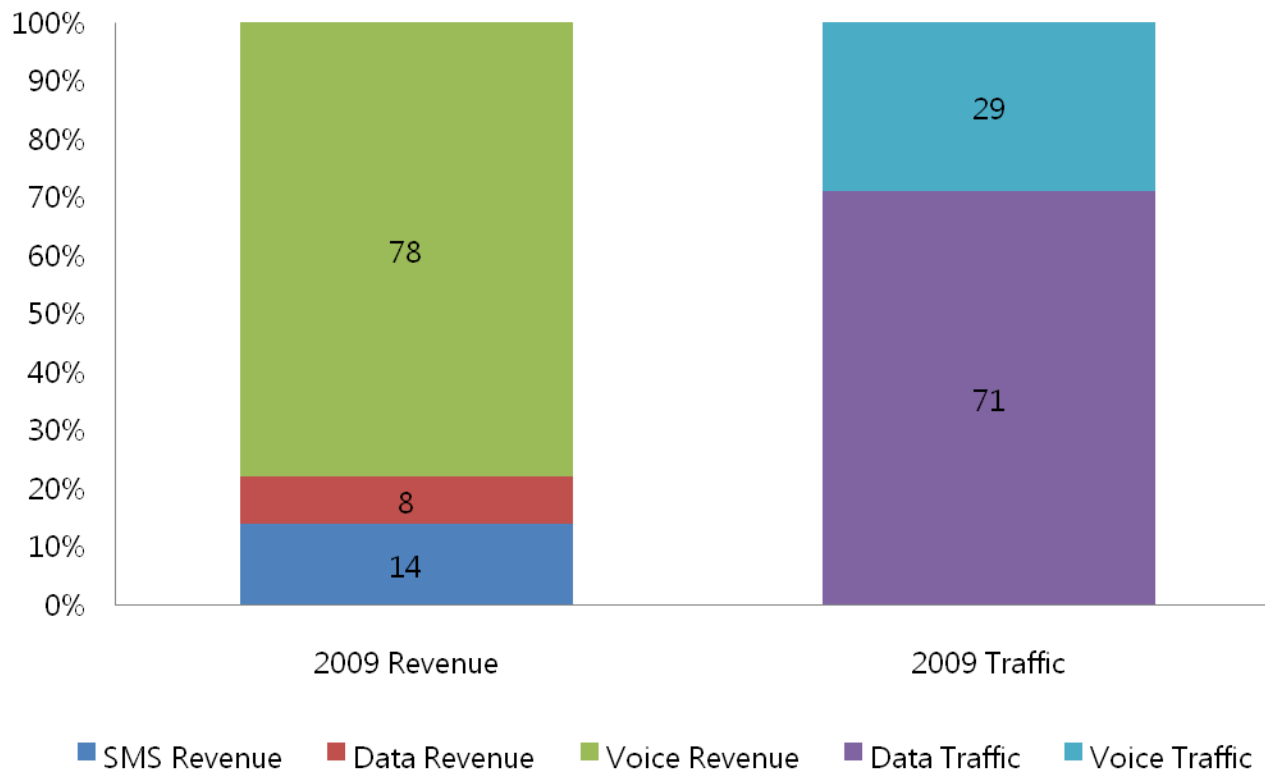


- the flow arrival process has a significant structure that must be taken into consideration
 - transmitting data traffic must have orders and priorities in order to avoid congestions or delays

4. Potential Negative Impact of the Net Neutrality (con't)

- Net Neutrality like.. Pay the Toll **by Color** of the Car

❖ Fig 2. Data Traffic v. Revenue (US Market, %)





4. Potential Negative Impact of the Net Neutrality(con't)

- Network operators are suddenly worrying about the network capacity
 - transmitting packets are no longer simple text, e-mail or photo
 - streaming videos w/ high definition quality(Youtube, Hulu...)
- The problem is not just the size of the contents
 - the handset manufacturer is blocking the content application

→ **Net Neutrality becomes Policy Issue**
- FCC's principles to preserve net neutrality have some ambiguity especially with the term 'lawful'
 - If telecommunications operators in general are to be considered as common carriers and network properties are considered as public utility..
 - Why would anyone be willing to spend billions of dollars to develop and innovate the network in the first place?





4. Potential Negative Impact of the Net Neutrality

- Net neutrality proponents
 - people have a right to 'neutral' provision of information over the Internet
 - the public has some sort of right over the private property of the companies that provide the access to that information
 - they want to use regulation to engender competition and innovation, but their remedies would have the opposite effect. They tend to underestimate the amount of competition that already exists in the market for high-speed internet services. There are multiple companies providing the services using multiple technology platforms.

- Network operators are
 - not saying that they are censoring the contents
 - prioritize the packets and control the traffic to maintain QoS and congestion problem of the network
 - It is especially important for wireless network to control the packets and applications transmitting through handsets.
 - Failure to do so may jam the network and your smartphone can't even make a simple phone call let alone surfing the internet download some contents.





5. Conclusion

□ it is all about pricing of the service

- It is not contents issue, but it is all about return on investments for the network operators' point of view as well as internet portals or contents providers' as well.
- But if FCC is not going to touch the price of the services, then the best mechanism known today is 'market'.

□ Wireline & Wirelessline

- Different: network in terms of transmitting logic and pricing the packets
- There are many evidences that innovations are in every value chain of the wireless industry. There's no dominant monopolist who can control the market at his will. No market failure is to be seen.

▪ The operators are to be creative and responsive in their services' pricing and traffic management. Otherwise they may have to face the politically appealing restrictions called 'Net Neutrality', which will be neither in their interests nor in those of the customers.





References

- ACI (2009), "The Consequences of Net Neutrality Regulations on Broadband Investment and Consumer Welfare: A Collection of Essays", The American Consumer Institute, Center for Citizen Research
- Davidson, Charles & Swanson, Bret (2010), "Net Neutrality, Investment & Jobs: Assessing the Potential Impacts of the FCC's Proposed Net Neutrality Rules on the Broadband Ecosystem", Advanced Communications Law and Policy Institute, New York Law School
- Hart, Jonathan (2007), Internet Law, BNA Books
- Economides, Nicholas (2007). "Net Neutrality, non-discrimination and digital distribution of content through the Internet", NYU School of Law, Law and Economics Working Paper #92. Available at <http://lsr.nellco.org/nyu/lewp/papers/92>
- Faulhaber, Gerald (2009). "A Broadband National Plan for Our Future: A Customer-Centric Framework", International Journal of Communication, 3, 742-780.
- Federal Communications Commission. (2009). Notice of Proposed Rulemaking (NPRM) in GN 09-191 Preserving the Open Internet. FCC 09-93. Available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-09-93A1.pdf
- Federal Communications Commission. (2008). Formal Complaint of Free Press and Public Knowledge Against Comcast Corporation for Secretly Degrading Peer-to-Peer Applications; Broadband Industry Practice; Petition of Free Press et al. for Declaratory Ruling that Degrading an Internet Application Violates the FCC's Internet Policy Statement and Does Not Meet an Exception for "Reasonable Network Management." File No. EB-08-IH-1518, WC Docket No. 07-52, Memorandum Opinion and Order, 23 FCC Rcd 13028.
- Genachowski, Julius (2010). Mobile Broadband: A 21st Century Plan for U.S. Competitiveness, Innovation and Job Creation. Remarks at the New America Foundation, Feb. 24. Available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-296490A1.pdf
- Lee, R., & Wu, Timothy (2009). "Subsidizing Creativity Through Network Design: Zero-Pricing and Net Neutrality", Journal of Economic Perspectives, 23(3), 61-76.
- Pociask, Stephen (2007), "Does Net Neutrality Help or Hurt Consumers?", The American Consumer Institute Study.
- Ridoux, J., Nucci, A., & Veitch, D. (2006), "Seeing the Difference in IP Traffic: Wireless v. Wireline", 25th IEEE International Conference on Computer Seminal Paper, Spain.
- Wisner, Phil, (2003), "Modularity, Vertical Integration, and Open Access Policies: Towards a Convergence of Antitrust and Regulation in the Internet Age", Harvard Journal of Law and Technology, Vol. 17, No. 1, Fall 2003
- Wu, Timothy, (2007), "Wireless Carterphone", International Journal of Communication, 1, 410.
- Wu, Timothy, (2003), "Network Neutrality, Broadband Discrimination", Journal of Telecommunications and High Technology Law, Vol. 2, P. 141
- Yoo, Christopher, (2005), "Beyond Network Neutrality", Harvard Journal of Law and Technology, 19, Fall, 22-23.
- Zittrain, Jonathan, (2008), The Future of the Internet and How to Stop It, Yale University Press





Thank you !

JINKYUNG PARK

E-Mail: parkjinkyung@yonsei.ac.kr

TEL: 82-10-8862-2899

