

Network Neutrality: Insights Gained by Juxtaposing the U.S. and Korea

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Outline of Presentation

1. Study background
2. Research questions
3. Methods
4. Findings
5. Discussion
6. Conclusion

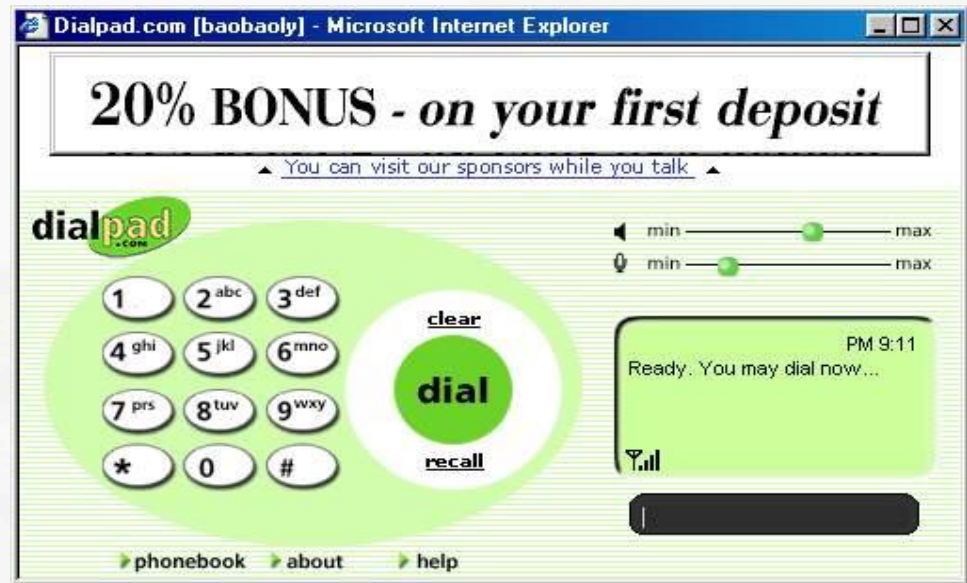
Network Neutrality

- Has been a hot topic for the last decade.
- Every content and every service over the Internet and network should be treated without discrimination.
- The principle advocates no restrictions by the Internet service provider or government on content, sites, platforms, the kinds of equipment that may be attached, and the modes of communication used.

Network Neutrality & Korea

- NN has also become a hot topic in Korea.
- While Korea is frequently held aloft as a broadband utopia, the country is struggling with the NN debate.
 - KT vs. Samsung SmartTV
 - Kakao Talk vs. network providers
 - Carriers' unlimited data plan LTE vs ISP's contents

Dialpad



- Korean version of Skype
- Came in 2000 , flourished.
- Disappeared in 2004 due to the oppositions from network providers.

Research Goal

- Compare and contrast the U.S. and Korea in the context of network neutrality, focusing on debates among stakeholders and regulatory approaches.

Research Questions

- RQ1: How do national-level policy initiatives address the development of NN?
- RQ2: How did the different goals and objectives of different countries contribute to patterns of development in industry and society?
- RQ3: How do people perceive NN in different countries, and what are the implications of these differences for users and for the future of the Internet?

Theoretical Framework

- Ecological perspective: Examines the dynamic relationships between stakeholders and includes multiple levels of social environment perspectives.
- A stakeholder analysis: Investigates various relationships among stakeholders, which provide essential insight into the way net neutrality has been discussed, prepared, and implemented.

Why Comparative?

- Contextual Juxtaposing
 - Ecological perspective
- Provide essential insights into the ways that NN has been perceived, discussed, framed, and implemented

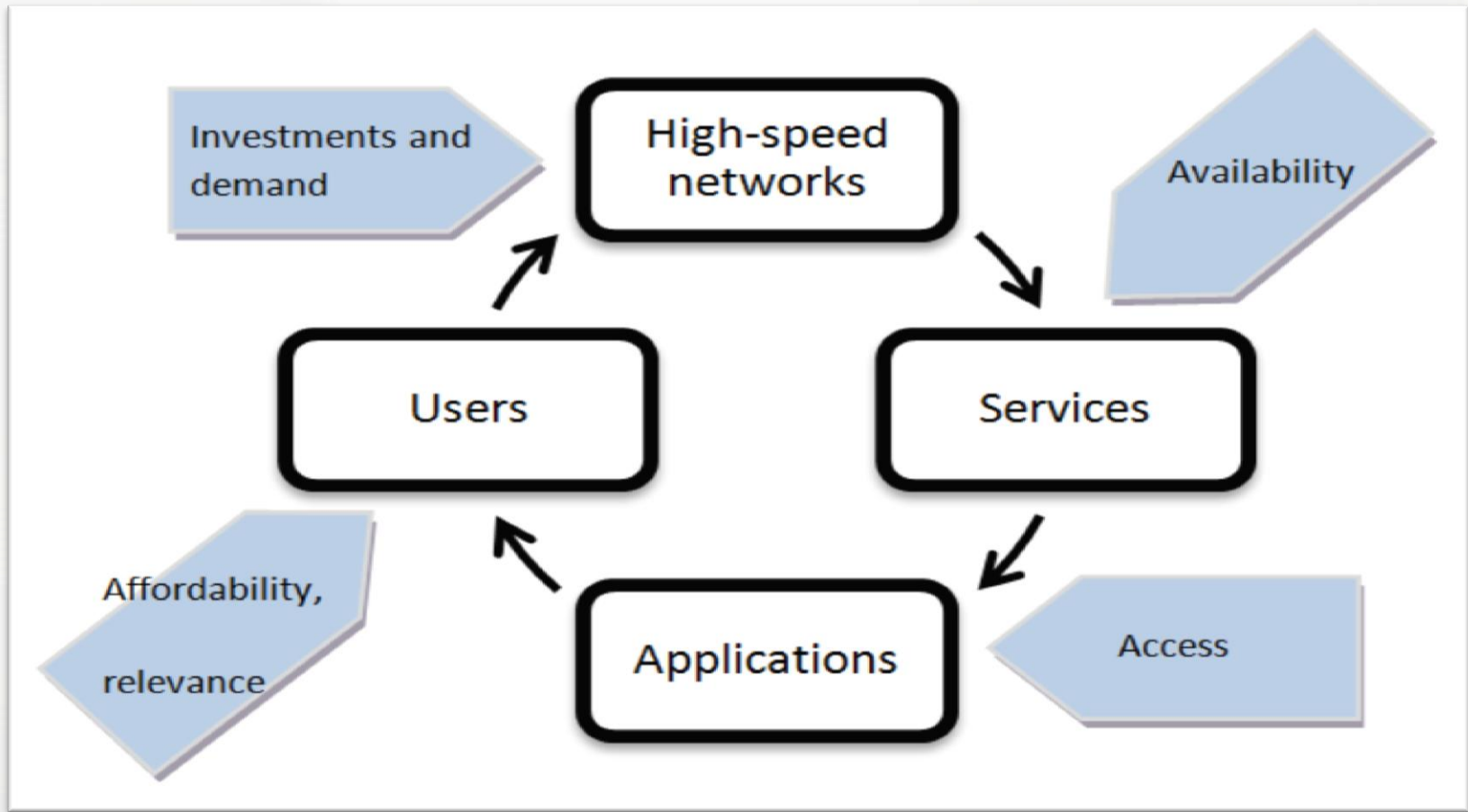
In this study, we seek to



Identify a reasonable

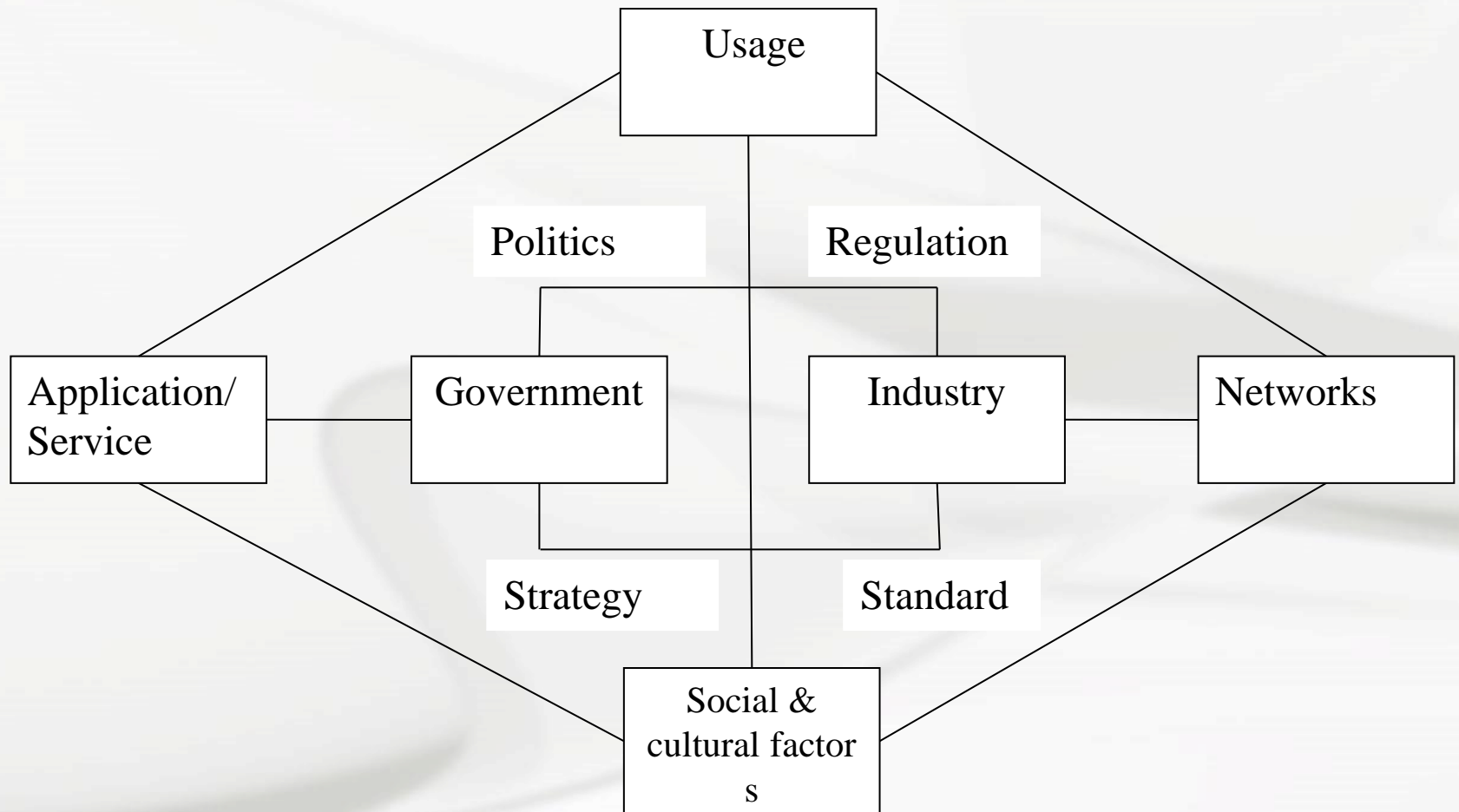
And sustainable balance between regulatory
And market-based means for allowing the Internet
to evolve as an open platform of economic,
political, and societal development in the future.

Network Ecosystem



(Kim et al., 2010)

NN Ecology Model



Stakeholder Analysis (1)

- The impact of reform on political and social forces, illuminates the divergent viewpoints toward proposed reforms and the potential power struggles among groups and individuals, and helps identify potential strategies for negotiating with opposing stakeholders.
- Stakeholder analysis has been applied to broadband diffusion and net neutrality.

Stakeholder Analysis (2)

- 1) Identify stakeholders,
- 2) Determine stakeholders' claims,
- 3) Determine resources provided by stakeholders and stakeholders' influence,
- 4) Analyze stakeholder attributes of power, legitimacy, and interests, and
- 5) Classify stakeholders as pro, con, or neutral to net neutrality.

Methodology

- A multi-method analysis to facilitate a contextual understanding
- Archival materials, such as the industry report, government publications, & technical reports.
- Informal supplementary data were collected through phone calls, emails, casual talks, and faxes to clarify and follow-up.
- A total of 239 events from 2000 through 2013 were collected.
- Survey: Perception of NN

Data Analysis

- A thematic analysis

The interpretation of events, perspectives, and phenomena and avoids a rigid interpretation of research results.

- Strover (2010) shows the validity of thematic analysis on net neutrality: it allows a reliable comparison of the effects intended by the policy mandate to the effects suggested by the research.

Quantitative Data Analysis

- A survey method for quantitative analysis.
- Identify people's views on the net neutrality.
- The variables in the survey were drawn from literature review (e.g., Crocioni, 2011) and expert suggestion.
- Respondents were also asked to express their opinions about the government's role in net neutrality.

Analyzing Different Views

Positions of respondents regarding NN

	The U.S.	Korea	Total
Pro	99	124	223
Con	81	86	167
Neutral	60	30	90
Total	240	240	480

Perceived factors of net neutrality

- Competition
- Bandwidth availability
- Investment and innovation
- Equality
- Freedom
- Control of data
- Quality of service

Chi-square test results

	Value	df	Asymp Sig.
Pearson chi-square	17.246	3	0.000
Likelihood ratio	18.531	3	0.000
Linear-by-linear association	10.515	1	0.000

One-way ANOVA of group differences

Factors		SS	df	MS	F	Sig.
Non-discrimination (Equality)	Between groups	1.339	9	0.232	9.125	0.002
	Within groups	41.923	235	0.199		
Freedom	Between groups	0.152	9	0.074	0.113	0.000
	Within groups	13.144	235	0.245		
Competition and unbundling	Between groups	0.293	9	0.073	0.022	0.003
	Within groups	16.291	235	0.112		
Control of data	Between groups	1.355	9	0.317	5.332	0.004
	Within groups	21.344	235	0.142		
Quality of service	Between groups	1.353	9	0.324	0.113	0.297
	Within groups	42.851	235	0.281		
End-to-end principle	Between groups	0.389	9	0.154	0.110	0.235
	Within groups	25.482	235	0.168		
Investment and innovation	Between groups	0.345	9	0.157	0.103	0.005
	Within groups	23.515	235	0.159		
Bandwidth availability	Between groups	2.161	9	0.530	5.232	0.090
	Within groups	12.612	235	0.248		
Opposition to legislation	Between groups	2.162	9	0.520	6.013	0.013
	Within groups	42.225	235	0.428		

- NN has become a major debate in both countries.
- Focal issues differ
- US: perceive NN from the context of increasing competition and thus discuss it from a broader social and economic perspective,
- Korea: see it within a dichotomous frame between regulation and competition.

- US: transparency and non-discrimination in NN,
- Korea: equality as the single most critical factor.
- Regulatory trends;
 - the U.S.: open characteristics of the Internet and ensure user rights to access lawful content.
 - Korea: how to distribute broadband resources and how to share the network.

Government Role

- Proactive intervener: Controller, Builder, Regulator, & Investor
- Facilitator: Strategist, Guider, Leader, & Integrator

Stiglitz, J., Orszag, P. & Orszag, J. (2000) & Shin (2007)

Responses regarding the government's role in NN

Korean respondents		Responses	Responses	Percentage
Proactive intervener	Controller	15	60	61.3%
	Builder	18		
	Regulator	16		
	Investor	11		
Facilitator	Strategist	5	38	38.7%
	Guider	7		
	Leader	9		
	Integrator	7		
Total		98	98	
U.S. respondents		Responses	Responses	Percentage
Proactive intervener	Controller	4	24	32.8%
	Builder	7		
	Regulator	9		
	Investor	4		
Facilitator	Strategist	12	49	67.2%
	Guider	13		
	Leader	11		
	Integrator	13		
Total		73	73	

Historical background of NN

- Korea: A proactive, intervening approach versus
- The US: A market-driven approach.

Interestingly, this difference emerges in opposite ways in the NN case.

- Korea: Hands-off or *laissez-faire* in the NN debate.
- The US: A proactive role in NN by regulating *ex-ante* rule and by actively ensuring public interest.

Date	Event – time line
05. 04. 2011	- Korea Communications Commission (KCC) held a forum, “Establishment of net neutrality policy forum”
12. 05. 2011	- The Korea Information Society Development Institute announced net neutrality guidelines: 1) user rights, 2) transparency, 3) no blocking, 4) no unreasonable discrimination, 5) rational traffic management.
12. 26. 2011	- The KCC announced net neutrality and Internet traffic management guidelines that were neither realistic nor effective for solving blocking mVoIP or smart TV blocking related problems.
02. 10. 2012	- KT blocked Samsung Smart TV’s connection (before the first discussion by the KCC, which was to be held five days later). Samsung Electronics sought an injunction against KT.
02. 14. 2012	- KT unblocked the Samsung Smart TV connection. - Samsung Electronics withdrew its injunction.
02. 16. 2012	- First net neutrality policy advisory committee
05. 04. 2012	- The KCC warned KT that “violating user agreements and Telecommunications Business Act.” - The KCC recommended that Samsung actively participate in discussing net neutrality. - Conditionally allowed the entry of MVNO.
07. 13. 2012	- The KCC announced guidelines regarding reasonable management and usage of networks: the net operator gained leadership of traffic management.
07. 18. 2012	- The Open Internet Association opposed the guidelines, which are therefore being postponed.
01. 25. 2013	- In late 2011, KCC introduced net neutrality guidelines. - In 2012, a net neutrality policy advisory committee was formed. - In 2013, a new administration took office, and the KCC will form a net neutrality consultative group

Conflicts Concerning NN in Korea

- Blocking ISP content
- Slowing the traffic of other services
- Blocking VoIP service
- Blocking mobile VoIP
- Government censorship

Legislations for NN in Korea

- The Electronic Communications Business Act (1999)
- The Internet Multimedia Broadcasting Business Act (2008)
- The *Plans for 2011*
 - A more specific and direct provision of NN
- Guideline on Network Neutrality and Traffic Management, 2012
 - Including Users' Right
- Implementation ?

The US

- Seeks to prevent broadband providers from abusing bottleneck positions.
 - (1) Consumers are entitled to access of lawful content;
 - (2) Consumers are entitled to use applications and services of their choice;
 - (3) Consumers are entitled to connect peripheral devices that do not harm the network; and
 - (4) Consumers are entitled to competition among providers.

- “Keep the Internet as it should be - open and free.”
–President Obama (2011)
- On January 15, 2014, the U.S. Court of Appeals threw out the FCC’s NN regulations,
- Counteraction against FCC’s *ex-ante* drive and has significant implications for the evolution of the future Internet.

Comparison of market factors of NN

	Korea	The U.S.
Content providers	Weak	Strong
Market structure	Oligopoly	Competitive
Mid-tier competitiveness	Weak	Strong
Retail ISP	Competitive	Oligopoly
Bargaining power of cable operators	Weak	Strong
Investment initiated by	Government and private	Mostly private firms
Legislation	Legislated	Ex-ante rules
Main issues	Access, interconnection, significant market power, non-discrimination,	Access by local ISP, non-discrimination

Juxtaposing the U.S.- Korea

	The U.S.	Korea
Users	Less frequent broadband users than Korean counterparts	Heavy broadband users. More concentrated in specific groups than for its U.S. counterpart.
Society	Geographic remoteness, sparsity of population	High population density, Unique Korean Internet Culture (PC Bang, On-line games)
Market	Intermodal competition between cable and DSL, deregulation	Oligopoly, liberalization
NN factors	Transparency, non-discrimination	Equality, investment & innovation
NN approach	Consistent, ongoing	Inconsistent, intermittent
Legislation	Legislative initiatives by the Congress, FCC order, ex-ante	Guidelines, tentative framework allocating regulatory leverage, hand-off, ex-post
Broadband	High-priced, low-speed	Cheap price, high-speed
Government role	Indirect facilitator	Combination of market forces and government intervention
Commonality	Promote universal access, protect user rights, encourage investment, foster competitive markets, optimize the use of resources, & minimize the burden and cost of regulation	

Inter-modal competition

	Broadband penetration by technology platform				Cable (% of total connections)	Cable homes passed
	DSL	Cable	Other	Total		
The U.S.	10.1%	13.5%	2.0%	25.6%	52.9%	96.3%
Korea	7.6%	10.5%	13.7%	31.8%	33.0%	70.0%

- US network provider: information service
- Korea network provider: common carrier

Neutrality of Fairness

- Network Neutrality vs. Fairness of Network Use
- Transparency
 - Transparency of network rules is needed.

- Seek to *ex-ante* determine the bounds of permissible conduct in markets
- Case-by-case examinations that eschew direct interventions.

- The network problem is far too complicated for even the most sophisticated regulator to craft a single set of meaningful rules to enforce a NN solution

- A single set of *ex-ante* or *ex-post* rules would not effectively address all of the challenges.
- It remains difficult to describe *ex-ante* what a serious violation of NN is. In the same manner, it is also not easy to correct problems with *ex-post* tools that have already occurred and thus seriously damaged the market.
- The U.S. approach may assume the likelihood of misconduct and thus a need to resort to preventive government measures.
- Remedial government intervention, Korean government has utilized regulatory restraint and punitive intervention when bad conduct materializes.

- The differences between national approaches provide a way to understand both contextual differences between regulatory cultures and substantive differences between policy interpretations.
- The underlying tensions between fundamental values and regulatory responsibilities that have fuelled the NN debates in both countries are unlikely to disappear or be mitigated for the time being.

- NN governance is an outcome of contextual interactions of regulation, broadband, market, and users. NN is not a final deliverable or a certain status; it is an ongoing process with a goal of making society and markets equitable and sustainable platforms for competition and innovation.

- Efforts to address NN should focus on solving the underlying lack of competition, not one-off network traffic management solutions.
- NN is an on-going issue, and a more fundamental long-term solution is necessary.

- Wide variation in the definition of NN creates ambiguous notions of effective competition.
- Managing competition in harmony with public interest is challenging where there is an entrenched, powerful incumbent, as in Korea and the U.S.
- This situation leads to politicized rulemaking and even regulatory capture in both countries.

Conclusions

- Given this complicatedness, legislation alone cannot guarantee net neutrality.
- Considering the current situation, employ a combination of legal regulation and transparency.
- Good governance key to ICT growth

Conclusions

- There is no “one-size fits all” approach, but user-centered approach...
- The possibility of the value-centered approach in policy analysis.
- The importance of human value in policy analysis
- Policy design is a complex value-laden process that seeks not only to determine the best means to given ends but also to determine what the ends in themselves should be.

EU Living Lab

- Open Innovation
- User Participation

Thank you

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