## QUESTIONS

### **Question 1:**

**What are the opportunities and implications associated with OTT?**

Answer to question 1:

The broadband ecosystem has long been dominated by incumbent network operators because of their intrinsic market power that comes from the subadditivity of cost structure, which is a source of natural monopoly, or authorized exclusive use of radio frequencies. This insufficiently competitive structure has been working reasonably well in a developmental stage where the market is expanding, and thus requires huge investment in the short term; however, once broadband penetration becomes saturated, the cost of insufficient competition becomes higher than its benefits.

Rate of return (ROR) regulation accompanied with entry/exit control was the traditional set of tools that telecom policymakers have been relying on to control the excessive use of market power by telecom giants. Recently, however, owing to rapid developments in ICT and the emergence of the two-sided nature of the market, this traditional toolbox has become ineffective. The remaining tool for policymakers include inviting new competing players into the market.

OTTs are one of the most promising actors, or the only promising player that can satisfy the above expectation. A group of OTTs, or “telecom OTTs”, that provide VoIP or data communication services, which used to be the major business of traditional telecom carriers, are now posing a direct threat to them and are preventing them from enjoying monopolistic rent. Skype is the most eminent example in this category. Another group of OTTs that sell content and applications online, “application/content OTTs,” have long been a customer of network operators, but recently, as their popularity and market influence increased, they offered platform services to smaller OTTs, thereby replacing traditional network operators. Google, Amazon, Facebook, and Apple, or “GAFA”, constitute this category and have made the once dominant telecommunications firms to be a marginal component of the ecosystem. (It is important to note that the powers of GAFA are now becoming a graver concern for competition authorities.)

In addition, since OTTs are free from legacy infrastructure, they can easily replace current services with new technology and innovative services. Therefore, consumers in general can enjoy more benefits from ICT development where OTTs are major players than where they are not.

### **Question 2:**

**What are the policy and regulatory matters associated with OTT?**

Answer to question 2:

Since facilitating OTTs’ business can be beneficial for the overall ecosystem, related policies should focus on the removal of regulatory and business barriers. The major challenges that should be addressed are possible anti-competitive behaviors of network players and OTT giants, as well as healthy development of network infrastructures.

First, policymakers should limit the anti-competitive leverage of network giants’ market power in order to minimize the entry barrier for telecom OTTs. Possible initiatives include the promotion of network openness by standardizing network interfaces for OTTs or by guaranteeing co-location. Improving transparency of interconnection agreements to prevent incumbent operators from prioritizing their affiliated OTTs, which can be attained through functional/structural separation or through arm’s-length rule requirements, is also important.

Second, to guarantee the smooth development of the broadband ecosystem where application/content OTTs can prosper, the cost of infrastructure maintenance/upgrade should be properly shared by related stakeholders. One aspect of this issue requires the re-construction of the universal service scheme where OTTs have been usually exempted from financial contribution mechanisms. The other aspect relates to network neutrality in terms of whether heavy users or certain OTTs should pay premium for their network usage at the consumer side. These issues have to be addressed to minimize the financial impact on OTTs and possible disincentives for OTT users while guaranteeing proper capital injection into the network infrastructure.

Third, maintaining a competitive OTT market also requires an important policy/regulatory consideration. The OTT market is prone to monopolization because subadditivity of cost function, network effect, high switching cost, and characteristics of experience goods are commonly observed in the market. Recently, OTT giants that provide platform function, such as GAFA, have started utilizing big data collected from their huge customer base to optimize their service for individual customers. This may create a tremendous market power that competitors can never dream of and this was clearly mentioned in the recent report of the Japan Fair Trade Commission. Therefore, if OTTs’ penetration in the market becomes sufficiently high and OTT giants eventually control a significant share of consumers’ broadband experience, an anti-competitive safeguard against those giants should be put in place. Possible safeguards should focus less on the provider side or the wholesale market and more on the consumer side or the retail market. The provider side approach essentially follows the traditional telecom policy tradition, thus it cannot be implemented properly considering the rapid development of ICT and its intrinsic multi-sided nature, as well as the borderless nature of the OTT market. On the other hand, the consumer side approach, which focuses on the appropriateness of retail service and how to help consumers make meaningful choices, can work regardless of the business model behind the service. This approach includes the transparency requirement of the service contract, the improvement of consumers’ literacy on OTT, and the establishment of OTT user groups that can be viable stakeholders.

In addition, when designing a policy/regulatory framework for OTTs, it is important to keep in mind their borderless nature. If some OTTs are not satisfied with a policy condition in a particular country, they can easily relocate to a different policy environment in a different country. Therefore, it is important to establish and maintain policy/environmental parity on a global scale; otherwise OTTs will provide the same service to consumers from outside the original country’s jurisdiction. In this case, consumers in that country lose all regulatory safeguards or they have to give up that OTT service completely. For example, in some countries, OTTs face data localization requirement. If such a requirement is too costly for OTTs, they have a reason to stop offering services in that country. Therefore, the regulation of OTTs can easily turn into a race-to-the-bottom and a country that adopts the least restrictive rule becomes where all the OTTs will stay. The only exception is when the country’s market is too profitable for OTTs to abandon. In this case, consumers in that country have to bear the cost of such requirement in the form of higher markups for OTTs.

### **Question 3:**

**How do the OTT players and other stakeholders offering app services contribute in aspects related security, safety and privacy of the consumer?**

Answer to question 3:

OTTs have both positive and negative impacts on the security, safety, and privacy of the consumer. On the other hand, since OTTs are free from legacy infrastructure, they are in a better position to introduce new ideas and technologies than network giants. On the average, they can increase the security level of the overall ecosystem. On the other hand, a high number of OTT players is a huge potential for security holes, thereby increasing the level of security threats. We are not yet certain which impact will prevail.

### **Question 4:**

**What approaches which might be considered regarding OTT to help the creation of environment in which all stakeholders are able to prosper and thrive?**

Answer to question 4:

The response to this question is essentially the same as that of Q2.

An appropriate policy set should be developed to revitalize the market framework that has long been and will possibly be prone to monopolistic/oligopolistic practices by network giants. The policy set includes transparency requirements and discipline against possible anti-competitive behaviors. Considering the fluid nature of the ever-changing broadband ecosystem and the possibility of excessive restraint against future technological breakthroughs and business innovations, the latter policy is better ex post than ex ante.

To keep the OTT market competitive enough in the long run, we have to monitor the market development and when OTT giants become too dominant, appropriate set of policies have to be designed. At this stage, asymmetric regulations adopted by telecom regulators to keep the telecom market competitive provide us a good guideline. Promising policies may include unbundling or nondiscriminatory requirements of the OTT giants’ platform function.

Policy for consumer protection is also important and should not be neglected. However, it is also important to keep in mind when exercising such a policy, that it is associated with economic cost and ends up with an increase in payment from consumers to OTTs.

### **Question 5:**

**How can OTT players and operators best cooperate at local and international level? Are there model partnership agreements that could be developed?**

Answer to question 5:

When dealing with this issue, it is important to consider the stage of broadband development of that country.

When the broadband infrastructure is not complete, the primary policy objective is to facilitate its market penetration. Many research reports suggest that two main reasons for lack of broadband usage are insufficient level of income and lack of interest in broadband usage. To deal with the latter reason, network operators have a reason to cooperate with OTT players because online content/applications of OTTs are the important complements to broadband access and primary reasons why consumers use the broadband Internet. Therefore, at this stage, policy makers should not intervene in the market; they should allow the players to attempt measures to ignite demand for broadband as much as possible. Once a certain number of consumers understand the benefits of broadband and start using the network, direct, as well as indirect network effects will facilitate penetration and the entire market will be on a growth trend. In this sense, zero rating trials such as Free Basics are better permitted as best practice of ideal collaboration between OTT players and network operators, considering their long-term impact on broadband penetration.

On the other hand, once broadband penetration becomes saturated, since the cost of insufficient competition in the network layer can become higher than its benefit, OTT players are better treated as a competitive force against network giants. To help OTTs not to be suffocated by network monopolists, policymakers should discipline anti-competitive behaviors of network operators. Examples of required policies are already mentioned in the response to Q2. If partnership between them emerges, competition authorities should direct a suspicious look at them. The only exception is when an OTT sets up its own network subsidiary and offers special packages to attract consumers; this is what LINE is pursing in the Japanese mobile market. [Add your input in this section]

## SHORT SUMMARY (for long contributions)

[In the case of long contributions please provide a short summary (1-3 paragraphs) outlining the main points of your response above]

OTT firms are emerging and flourishing players in the broadband ecosystem, and can become a significant competitive pressure on existing network operators if properly nurtured: telecom OTTs can be direct competitors to incumbent telecom carriers, whereas application/content OTTs can be alternative platform providers that may replace the portal functions of incumbent network operators. Since market competition is the most efficient and favorable resource allocation mechanism when conditions are met, it is important not to interfere with the development of OTTs, unless OTTs pose a clear and immediate threat to the competitive ecosystem.

Since OTTs are free from legacy infrastructures, they can adopt state-of-the-art technology with less resistance and introduce new or improved services in less time than firms that have been investing fortunes in network infrastructures. Therefore, supporting OTT firms can be a good industrial policy to enable the public enjoy the benefits of broadband ecosystem sooner.

Therefore, telecom/internet policies should not inhibit the development of OTTs and should be ready to intervene when existing players and already established OTT giants engage in anti-competitive activities against them. Alternatively, if the current market condition is not competitive enough, policies can be “targeted” to help OTTs become significant players in the market; however, such policies should be for a temporary period, otherwise they may cause more harm than good in the long run. In addition, it is important to keep in mind that there is no one-size-fit-all solution. For example, a treatment to the partnerships between OTTs and network operators has to be adjusted according to the broadband development stage: the lower the stage level is, the less restrictive governmental oversight should be.

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