

SUMMARY REPORT

Background of the meeting

The Asia-Pacific Information Superhighway (AP-IS)¹ is a regional broadband initiative, supported by the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) secretariat to improve regional broadband connectivity, through a dense web of open access cross-border infrastructure.

The Information Superhighway aims to promote the principle of open access and transparency of pricing for the ultimate purpose of increasing coverage, availability, reliability and affordability of broadband access for all across the region. In this regard, ESCAP has conducted a number of studies on the status of broadband infrastructure, pricing structure and fiber optic network missing links connecting the countries in the Association of Southeast Asian Nations (ASEAN)², South and West Asia³ and Central Asia⁴.

The meeting invited private sector companies as key players in developing regional information and communications technology (ICT) infrastructure, firstly to share the concept of AP-IS and secondly to learn their views on regional broadband connectivity, ESCAP's analytical studies and findings and challenges and opportunities in expanding regional broadband networks across the region.

Organization of the meeting

In this background, a one day consultative meeting with the private sector was convened on 1 April 2016 in the ESCAP Conference Center, Bangkok. The participants list is attached as Annex 1.

The objectives of the meeting were, but not limited to, the following:

- Inform the participants of the ESCAP's AP-IS and ESCAP's research findings in the Asia-Pacific region;
- Discuss the missing infrastructure links, network and Internet traffic management and e-resilience to increase availability, reliability and affordability of broadband access and services;

¹ <http://www.unescap.org/our-work/ict-disaster-risk-reduction/asia-pacific-information-superhighway>

² <http://www.unescap.org/resources/pre-feasibility-study-asia-pacific-information-superhighway-asean-sub-region>

³ <http://www.unescap.org/resources/depth-study-broadband-infrastructure-south-and-west-asia-0>

⁴ <http://www.unescap.org/resources/unleashing-potential-internet-central-asia-south-asia-caucasus-and-beyond>

- Identify countries (especially landlocked countries) and sub-regions that could benefit from the opportunities that might be availed by private sector through investment in the infrastructure development; and
- Discuss policy and regulatory constraints and opportunities among respective countries and sub-regions, which could be addressed through the AP-IS and regional cooperation platforms.

The outcome of the meeting would also serve as private sector inputs to the AP-IS.

The meeting agenda is found in Annex 2.

Opening of the meeting

The meeting was opened by Dr. Shamika Sirimanne, Director of the Information and Communications Technology and Disaster Risk Reduction Division (IDD), ESCAP. She highlighted that the AP-IS aims to make ICT accessible, affordable, and inclusive and stressed on the need for regional cooperation and collaboration with the private sector to achieve seamless regional connectivity as requested by the member countries. She added that while 50 percent of all global broadband subscribers are registered in AP region, this broadband demand is largely driven by China. Dr. Sirimanne further pointed out that the private sector possesses the necessary ICT expertise and financial means to advance such seamless ICT connectivity in the region. She also urged the private sector to share their experiences, lessons learned and good practices as well as their views on how to collectively improve regional ICT connectivity.

Presentations on AP-IS

Ms. Atsuko Okuda, Chief of the Information and Communications Technology and Development Section, IDD, presented an overview of the UN System and the concept of AP-IS. Ms. Okuda illustrated some of the noticeable characteristics of the broadband divide in the region and the need to improve broadband affordability, availability and coverage through regional ICT connectivity initiatives in order to address the divide. In this context, she further added that the AP-IS aims to develop physical infrastructure, effective Internet traffic and network management, e-resilience and digital inclusion, while developing an enabling Internet ecosystem and stimulating the digital economy. She also emphasized the importance of valuable inputs from private sector participants and stressed that cooperation is vital among key players to overcome digital divides through the improvement in regional broadband connectivity. Ms. Okuda, therefore, urged the representatives of the private sector to come forward for an open and fruitful discussion on necessary regional cooperation.

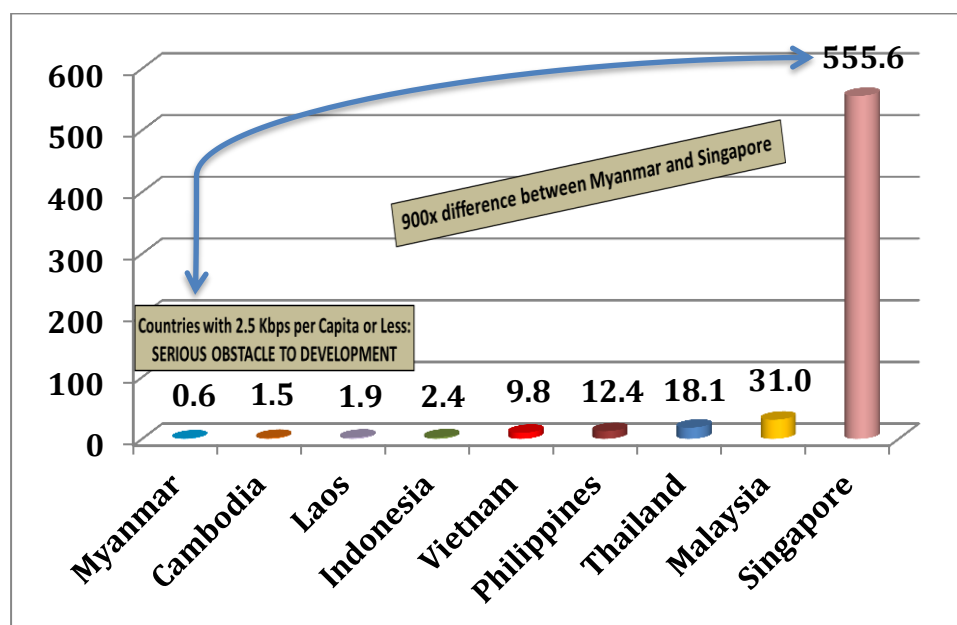
A. Presentations on the status of ICT connectivity in the ESCAP region

Mr. Abu Saeed Khan, LirneAsia set the scene by highlighting that Asia-Pacific is the engine of growth for the world, particularly in the telecom industry but government and private sector collaboration is required to ensure an enabling policy and regulatory environment to increase the broadband expansion in the Asia-Pacific region.

The presentations were centered on the findings, analysis and recommendations of the studies carried out by the consultants for ESCAP and focused on the disparity in the Asia-Pacific region in terms of Internet bandwidth, IP Transit pricing, missing cross-border terrestrial fiber optic links and dependency on submarine cable for international connectivity. It also identified the need for establishment of Internet Exchange Points and specific ICT policy and regulations desired in the region.

Mr. Michael Ruddy's presentation was entitled 'Improving Regional Connectivity with the Asian Information Superhighway' with focus on the bandwidth divide - the existence of large broadband gaps in the Asia-Pacific region in international Internet bandwidth per capita. It cited an example of the ASEAN region as shown in figure 1.

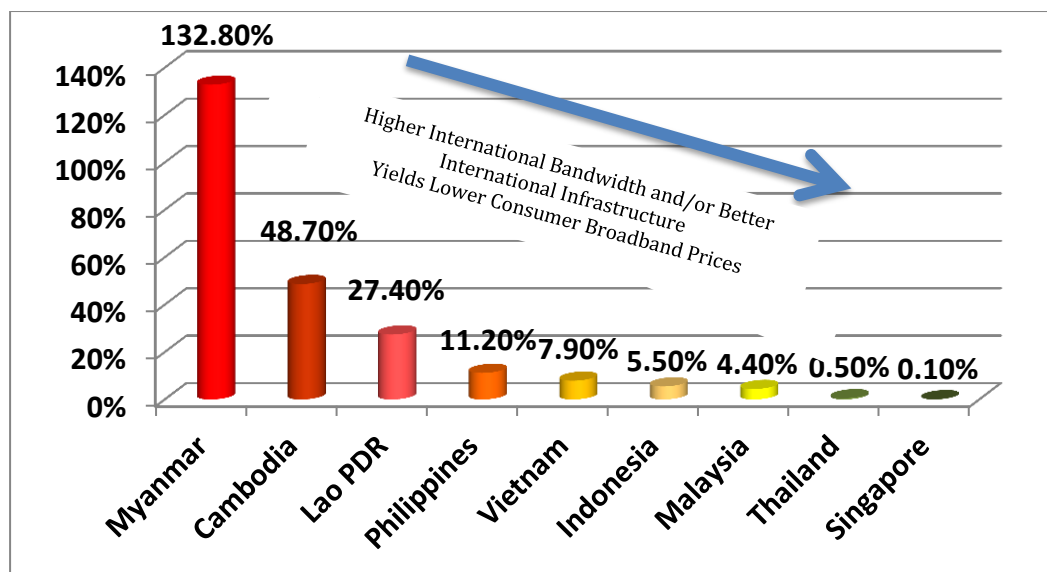
Figure 1: ASEAN International Internet Bandwidth per Capita



Mr. Ruddy also referenced to the examples of Central Asia and South Asia, and showed the gaps in terms of international Internet bandwidth per capita as shown in Figure 2.

Figure 2: Weak International Bandwidth Impacts Consumer Pricing

1 Mbps Broadband Connection: Annual Subscription + Installation as a percentage of Per-Capita GDP (2013)



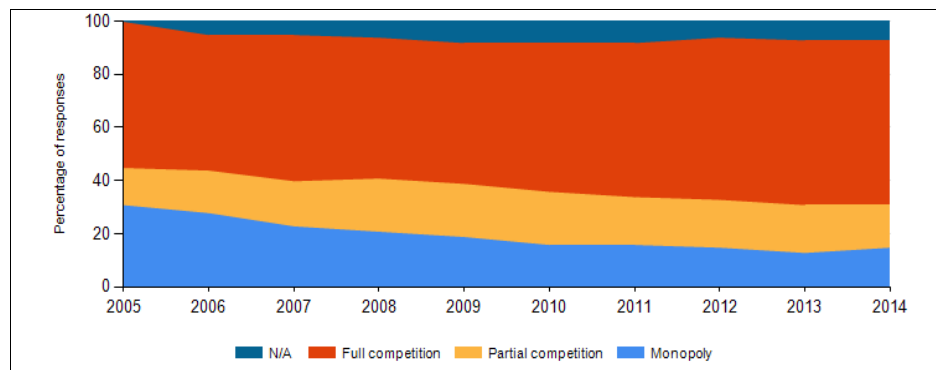
He further argued that limited international bandwidth has cascading impact on consumer and international bandwidth prices. Mr. Ruddy's analysis of bandwidth in Asia Pacific clearly indicated the divide between the 'haves' and 'have-nots' and the untenable high bandwidth prices in the region. He then demonstrated the linkage to the need to construct fiber infrastructure to address this inequality.

Mr. Ruddy's conclusion for coherent, open access, cost-effective AP-IS fiber infrastructure were as follows:

- Weak international broadband infrastructure is a major obstacle to economic and human development at macro level, higher wholesale and consumer prices and lower broadband adoption rates;
- Improved regional fiber networks augment network reliability and alternative routes avoiding the choke points.
- Future network development should be fully integrated and coherent (i.e., mesh configuration), function and to be monitored as a single, uniform network, by leveraging existing infrastructure, ensuring open access and non-discriminatory pricing, with financing mechanisms such as Special Purpose Vehicles (SPVs).

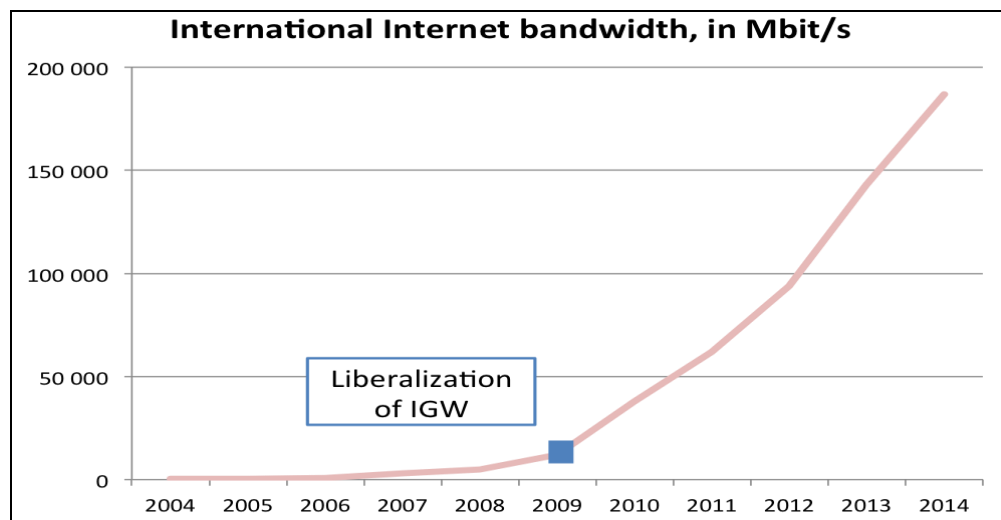
1. Mr. Benoit Falten presented on topic of 'The Importance of Open International Gateways' in the context of Pakistan's intention to open up its international gateway. Mr. Falten pointed out that higher prices on international bandwidth charged by incumbent operators due to prevailing monopolies has resulted in hosting the contents out of the country by content providers. He further presented the impact of monopolies in transit as shown in figure 4.

Figure 4: Impacts of Monopolies in Transit



Mr. Felton submitted the expected impact, direct and indirect, of opening up the International Gateways (IGWs). He added that while opening of IGWs benefits the countries it would, however, also depend on the policies and regulations in the neighboring countries.

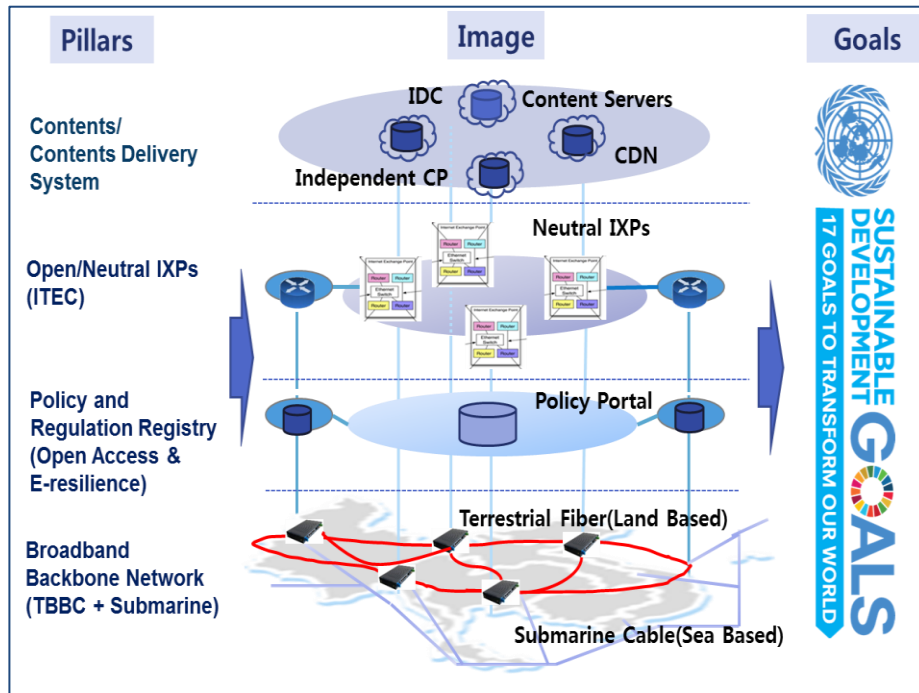
Figure 5: Azerbaijan, Impact on Volume



The concept of ‘open’ refers to collocation, interconnection, and access to international cable providers, according to Mr. Felten. Mr. Felten concluded that open access policy will lead to (i) increase in adoption of broadband and other IT development, (ii) improvement in connectivity to landlocked countries that are dependent on the neighboring countries’ international gateways.

Mr. Yeong Ro Lee presented on the ASEAN study conducted for the Asia-Pacific Information Superhighway. Mr. Lee pointed out that the methodology of the ASEAN study could be replicated to other sub-regions, with the aim of realizing AP-IS through a harmonized approach towards all sub-regional initiatives. After referring to the common aims of AP-IS and ASEAN Masterplan, he continued with the below conceptual map of AP-IS in Figure 6.

Figure 6: Conceptual image of AP-IS



Mr. Lee particularly emphasized the need for establishment of an open/neutral Internet Exchange point (IXP), and harmonization of ICT policy and regulations in the Asia Pacific region. The importance of addressing the identified missing links for robust regional terrestrial broadband backbone connectivity for seamless cross-border connection was also pointed out. Seamless terrestrial fiber optic connectivity and regional Internet exchange network should be considered for future investments, he added.

On the topic of Internet traffic management, Mr. Lee touched upon speed discrepancies in the ASEAN region and unnecessary long traffic route. Some of the key findings on download/upload speed in the ASEAN region are shown in figures 7 and 8.

Figure 7: Down load speed, less than 25 Mbps in ASEAN region.

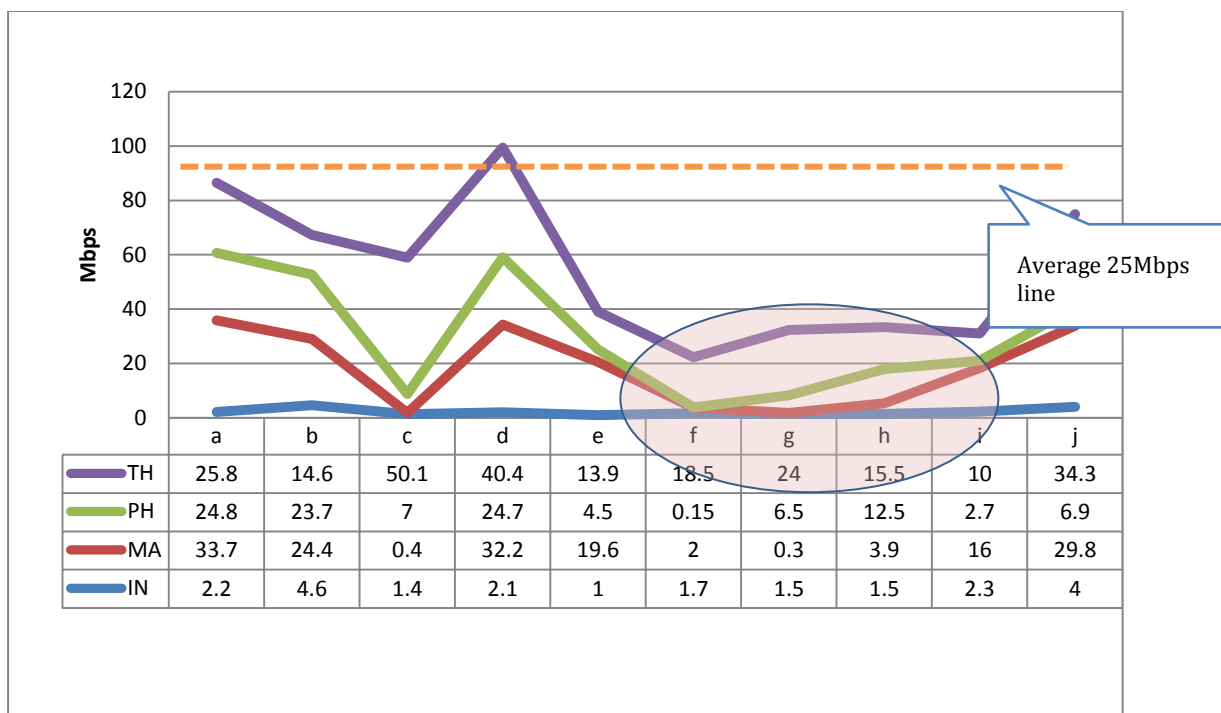
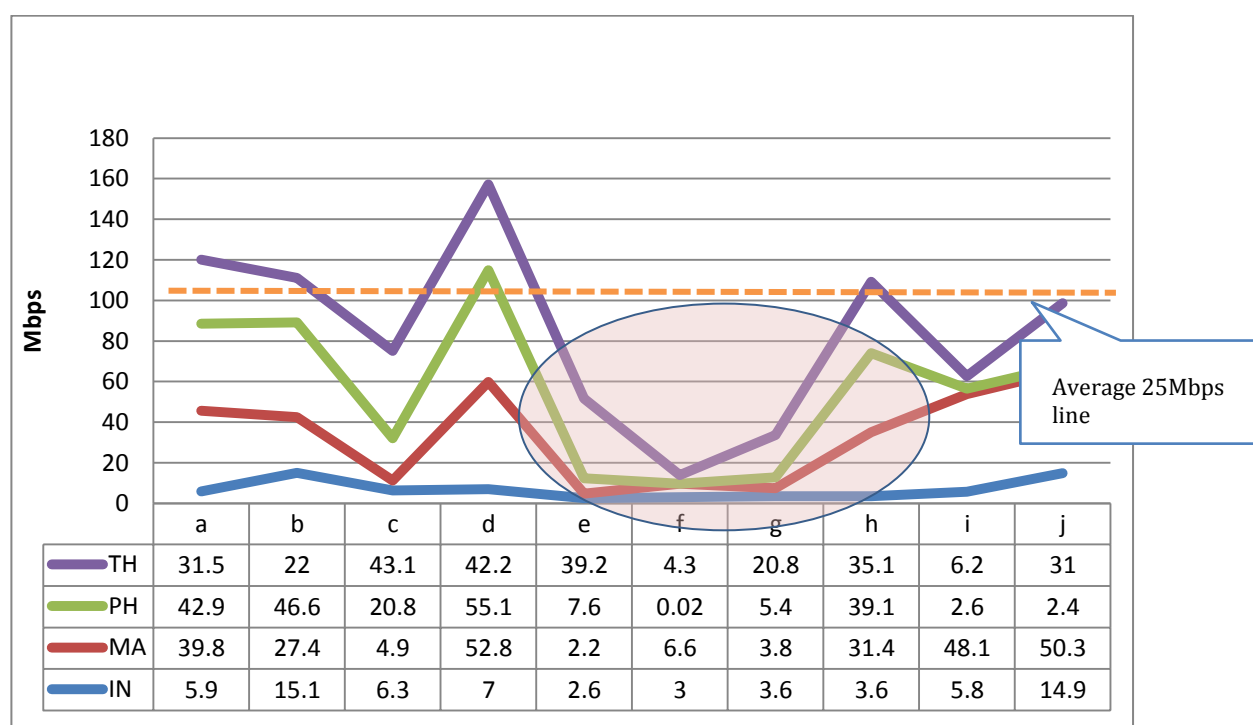


Figure 8: Upload speed in ASEAN region.



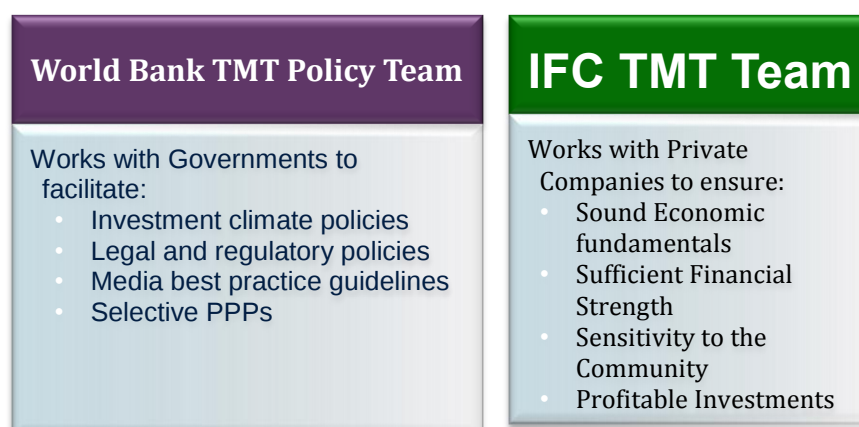
Mr. Lee made the following recommendations in the context of AP-IS:

- Hybrid ring and mesh type of backbone for consideration;
- Establishment of neutral IXP centers by dual ring system, aggregating sub regional (South, East, West) traffic with links to Global Transit Points; and IXP Governing organization for IXP operations;
- In depth feasibility study and infrastructure design for the Asia-Pacific region

- In-depth survey on AP-IS
- Development of the AP-IS Master Plan

Mr. Darlington Akaiso of the International Financial Corporation (IFC) presented an overview of IFC's operations, in particular the operation modality differences between IFC and World Bank as given in figure 9.

Figure 9: The World Bank and IFC



Mr. Akaiso referred to the IFC's four focus areas:

- Broadband development, where IFC works with companies to increase broadband connectivity, focusing on areas with more potentials for sustainable and inclusive development impact
- Infrastructure sharing, where IFC supports telecom infrastructure sharing as a way to reduce companies' costs, create stronger competition, and minimize environmental impact
- Mobile@Frontier, where IFC helps mobile operators in expanding the networks and upgrade services to reach all areas and population groups, especially in challenging environments
- FinTech, where IFC supports the development of new technologies that contribute to greater access to financial services

Mr. Akaiso touched upon concrete activities related to telecom, media and technology

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