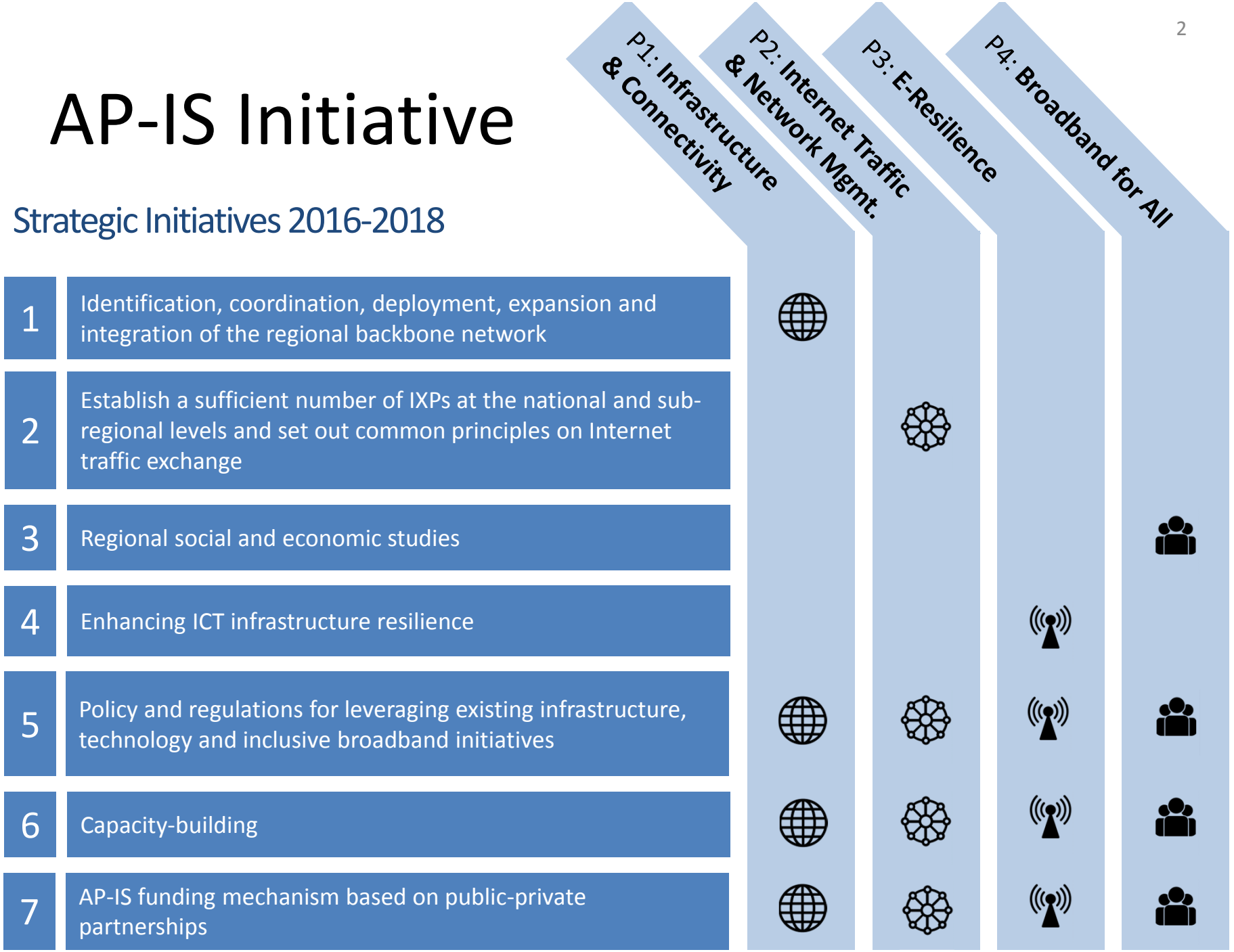
Summary of Country Submissions

For full information of each country's submission, refer to the meeting's website: http://www.unescap.org/events/first-session-asia-pacific-information-superhighway-ap-steering-committee

First Session of the Asia-Pacific Information Superhighway Steering Committee, 1-2 November 2017, Dhaka, Bangladesh.

AP-IS Initiative

Strategic Initiatives 2016-2018



Country	Challenges (Focus Area)	Opportunities for Collaboration/Proposed Actions
Afghanistan	Land locked countries and broadband expansion	Connecting land locked countries in our region through a terrestrial regional network will reduce OPEX and improve affordability. Developing a regional OFC (optical fiber cable) network
	How to deal with the affordability challenges	
	Policy and regulation	
	Funding	
	How to deal with 'right of way'	

Country	Challenges	Opportunities for Collaboration/Proposed Actions
Bhutan	Limited Domestic Fiber Optic Network Redundancy	Bhutan's IXP will be instituted by November of this year. An initiative of the stakeholders with DITT spearheading it Absence of Content Distribution Networks in the region. The lack of presence of major CDNs in the region makes it necessary for Bhutanese ISPs to establish POPs in distant countries like Singapore and the UK. The presence of CDNs in the region would help bring down the cost of connectivity for countries like Bhutan.
	Limited International Internet Redundancy	
	Limited CDN (content distribution network) in the Region	
	Providing affordable broadband connectivity to all citizens	
	Limited Last Mile Connectivity	
	High Cost for International Internet Bandwidth	

Country	Challenges (Focus Areas)
Bangladesh	• Lack of effective and adequate content availability • Slow advancement of IT literacy and education at secondary and tertiary level • Reaching rural or remote areas with broadband network where business prospective is not present [BTRC] • Limited Broadband connection and slow speed of internet bandwidth in the rural areas. • Lack of online security. • Storage capacity limitation of big data. [BSCCL] • Difficult to deploy underground Optical Fibre for metro network. • Lack of skilled technical manpower. **[PGCB]** • Fiber/Cable Cut : Concerned authorities should notifiy BTCL during road construction. **[BTCL]** • Lack of viable business Case in terms of prospective users for broadband internet service outside Dhaka for developing local ISP services • Lack of localized content • Coordination between different stakeholders under different ministry with priorities • Policy support for service process simplification for creating e-service.

Country	Challenges (Focus Areas)
Bangladesh	• Capacity building, ICT infrastructure and security in field level offices for e-service deployment, implementation and delivery. • Use of advanced computing and trending technologies such as Artificial Intelligence, Big data, IoT, Cloud computing, computer vision, robotics and drone for rural and national development in various sectors, climate change adaptation, disaster management and national decision making. **[DoICT]** • Installation of utility duct along all networks. [RTHD] • Optical fiber network deployment at Cross-border areas & integration with the regional backbone network including passive infra network. • Superhighway building period, the domestic network may require relocate/rebuild due to road expansion. No compensation is given for any relocate/rebuild activities. • Internet exchange point establishment at national & sub regional levels. • Lack of Regulations and policy frameworks for ICT. • Inter Govt. agencies have lack of coordination, which is impacting the permission process of ICT infrastructure build. • Power sector is considered as high focused area from Govt. side, same level of focus should be given to ICT sector.

Country	Challenges (Focus Areas)
Bangladesh	• In ICT sector, there is no proper price regulation & quality of service. Outcome is low cost with compromised quality. On the other hand, high cost with high quality, which is not affordable for generalized people. • International internet market is dominated by few major purchasers, who consume 2/3 of the bandwidth. [Summit] • Policy Formation for engaging private organization • Utilization of existing network • Non-NTTN operators are doing Telecommunication Transmission business in Bangladesh • Optical fiber core Leasing Business • Pricing issue • Creating Awareness

Country	Proposed Actions
Bangladesh	• Development of sector-specific content with sub-regional cooperation. • Prioritizing the content deployment in native language with regional cooperation • Promoting job-oriented ICT learning from secondary level. • Synchronizing wireless broadband with fiber network to reach the remote areas for cost effectiveness and wide-coverage **[BTRC]** • More Investment on the infrastructure to reach the suburb people of the country. • Providing IT based training to the mass people. **[BSCCL]** • Establishment of colocation facility and express network for IIG, NIX, BWA, ISP's in outside Dhaka free for some certain periods for providing internet services to remote areas in less costs. It will create business case. • CDN facility in all the POI for efficient bandwidth utilization and future preparedness for trending video based content demand and delivery. • Establishment of free WiFi hotspots in remote areas for providing access to underserved and free public services and content delivery. • Connection in all educational institutes, community clinic and union level offices with fibre optic connectivity. • Deployment of digital repository and distribution platform for public distribution of digital contents.

Country	Proposed Actions
Bangladesh	• Support and promote service process simplification in government services with policy, fund and knowledge. • Establishment of national Advanced computing centre and deployment of necessary. infrastructure in collaboration to universities for research, promotion and expanding use of trending technologies and advanced computing for national use. • Provide training and IT support in field level service providing employees. • Establishment of Enterprise network in field level offices. • Establishment of IT operation and support centre in every upazilla. • Comprehensive effort to establish and develop content and digital media industry with all necessary supports and commitment. Investment for more localised content development. • Establishment of Digital literacy centre with connected remote education centres in all the upazilla's in all over the country. • Establishment of computer labs in rural educational institutes and teacher capacity building. • Transform coastal islands into digital islands with policy support, fund, connectivity, technology, capacity building, e-service, analytics, IOT and AI. **[DoICT]**

Country	Proposed Actions
Bangladesh	• Shall make a Master Plan for Regional Connectivity. • Manpower/ Expertise can be exchanged within Asia Pacific Regional Countries. **[PGCB]** • ICT sector should be recognized as power sector enjoying customs duty waive, Tax waive for importing goods and providing services. • Fund needs to be allocated for building the ICT infrastructure. It can be a project financing/ special purpose vehicle model, Consortium model, Management contract/ build-operate-transfer, Donor financing etc. Proper & immediate financing mechanism can accelerate the ICT infrastructure implementation and development. Govt also need to encourage private/ local business entities through low interest funding and Tax waiver. • Local investors should get privilege for building the ICT infrastructure in regional, sub regional & national level. • Inter-governmental/ ministries support (Administrative & financial) is required to relocate/ rebuild ICT infrastructure due to road expansion for superhighway. Necessary compensation should be provided. • Internet bandwidth export Regulations and policy frameworks required to export internet bandwidth immediately in neighbour countries where demand exists.

Country	Proposed Actions
Bangladesh	• For ICT infrastructure building purpose, relevant ministries support is required for waiving road cutting compensation for underground works, all type of bridge crossing, using Electric pole etc. • To ensure secured and more network availability, alternative path of upstream is required in additional routes. • To reduce the import cost (Volume discount) of bandwidth, a forum (IIG) can be introduced to avail bulk volume discount from carrier provider. • To reduce the internet capacity utilization and performance enhancement, common caching & private peering facilities needs to be ensured. • The co-location charge of international IX (Internet Exchange) need to be reduced for developing countries like Bangladesh. • Tier-1 ISPs should provide IP routing through their lowest and best path to ensure quality. **[Summit]** • Exchange of views with the appropriate stakeholders financial and technical support from ESCAP **[RTHD]**

Country	Challenges (Focus Areas)	Opportunities for Collaboration/Proposed Actions
Lao PDR	Land locked country - need cross border connection to international bandwidth.	To build data centre to provide services for public and private sectors (such as web hosting, co-location, virtual machine, cloud, etc) to boost local contents and bring foreign contents closer to make the internet cheaper, provide variety of contents for user to learn, work and conduct business.
	The development of local contents remain a challenge.	Human capital development on ICT related technology and its application
	Lack of ICT skill, therefore there is still digital gap in ICT know how	Encourage more investment (PPP) at the underserve areas and infrastructure sharing to enable people nation wide can access to services in affordable price and good quality.
	Several regulations need to be improved to accommodate the fast changing technology	One of Lao PDR's priority is on ICT human resource development. We welcome support and opportunity of cooperation with ESCAP/ITU in technical capacity building areas under the 4 Pillars of AP-IS.

Country	Challenges (Focus Areas)	Opportunities for Collaboration/Proposed Actions
Viet Nam	• Large scale ICT infrastructure Investment • Experience about cyber security management • Lack of regulation for public-private partnerships in ICT area under Strategy Initiative 7 • Most of the terminals manufactured before 2013, therefor do not support new generation standard like 4G under Pillar 4 • Connectivity ICT Infrastructure under Pillar 1	• Increase connectivity capacity at national level • Increase capacity about cyber security management and building regulation for PPP • Collaborate with nations/global stakeholder to developing broadband infrastructure

Country	Challenges (Focus Area)	Opportunities for Collaboration/Proposed Actions
Armenia	National and subnational content development.	Establish group of DC over the AP-IS and IX in Armenia for enabling shortest route to EU through Iran-Armenia-Georgia-Sofia; Discover and approve mechanisms for preferential access to the existing terrestrial cable infrastructures in "intermediate" countries on behalf of AP-IS project implementation; Discover and introduce financing mechanisms for regional and national carriers if considering capacity upgrade on behalf of AP-IS. PPP model for financing AP-IS – consider mechanisms of facilitation of private investment on national and subregional level.
	Traffic Exchange and content management infrastructure.	
	Transnational regulation, applicable on subnational level	
	PPP model for financing of AP-IS	

Country	Challenges (Focus Areas)	Opportunities for Collaboration/Proposed Actions
Georgia	Develop domestic fixed broadband infrastructure Develop open neutral Internet exchange points for the domestic and international traffic exchange Transitions in to the Internet Protocol version 6 Update national policies and regulations on infrastructure sharing;	Georgia express readiness to collaborate with Asia-Pacific, European countries and with international organisations in order to achieve above-mentioned priority challenges.

Country	Challenges (Focus Areas)	Opportunities for Collaboration/Proposed Actions
Georgia	Further development of next generation wireless broadband networks and services Use Addition frequencies (Digital dividend) in 700 MHz for the next generation wireless broadband services Develop Digital Connectivity between Europe and Asia through Georgia as the shortest transit link Develop digital trade and different electronic services	

Country	Challenges (Focus Areas)	Opportunities for Collaboration/Proposed Actions
Kiribati	• Limited technical capacity on developing cyber security regulation. • Lack of infrastructure to support roll out of mobile and internet services on all outer islands (rural area). • Limited internet capacity/speed to the majority of the population • Limited Staff Capacity • Inefficiency in public service delivery • Lack of Government Datacentre • Improving Government network on the Capital city	• Increase mobile subscription • Increase of internet penetration (access to internet) • Enhance national gateway bandwidth capacity • Increase number of islands with access to submarine cable bandwidth • Increase number of Government Ministries and Offices connected to Government Wide Area Network • Increase number of online services available to public • Backup Communication System for Disaster Recovery • Improve telecommunication infrastructure and connectivity on all outer islands • Improve internet capacity/speed to the majority of the population • Improve accountability, transparency and efficiency in public service delivery through the use of ICT

Country	Challenges (Focus Areas)	Opportunities for Collaboration/Proposed Actions
Papua New Guinea	Papua New Guinea has in 2015 pass a law on the Cyber Crime. The challenges the country now have is to implement the law entrusted to carry out the task. Such as the Police prosecution and the Court System to understand the background of cyber crime. As for Cyber security, the agency entrusted need to step up to protect the users and the network from abusers	• National IXP has been installed for effective management of national Websites and ISP and also to screen illicit activities.

Country	Challenges (Focus Areas)	Opportunities for Collaboration/Proposed Actions
Vanuatu	• Priority is to introduce e-services to the citizens of Vanuatu for Agriculture, Education, Health, Tourism, Finance, Weather, Disaster and others. • A Bill for Cybercrime is currently being consulted for approval by Parliament in Q1, 2018.	• Cybersecurity Centre • E-Government; • Connect 2nd submarine cable

Country	Challenges (Focus Areas)	Opportunities for Collaboration/Proposed Actions
Tonga	i. High Cost for International Internet Bandwidth ii. Providing affordable broadband connectivity to all citizens iii. Lack of ICT skill, therefore slow implementation of online services for citizens and businesses. iv. Limited technical capacity on developing cyber security strategy. v. Slow Digital Transformation in Government and Businesses	i. Coordinate the possibility of inviting major content plays to invest in establishing of a content distribution network (CDN) services to be local. ii. Increase utilization of our international Fibre connection with promoting new innovative and online services iii. Build a strong cybersecurity strategy to provide more assurance of security to the investors and stakeholders. iv. Establish a local IXP to help drive the internet cost down v. Improve local telecommunication infrastructure

Country	Challenges (Focus Areas)	Opportunities for Collaboration/Proposed Actions
Samoa	i. Focus on cyber security resilience and setup of CERT. Very limited capacity in technical knowledge as well as tools to assess if existing infrastructure can support a CERT setup. ii. Extend the fibre infrastructure around the country and get telcos to share existing fibre network with each other. iii. Look at ways to allow private users to connect to government SNBH network to provide connectivity and in return allows government to get revenue from them. iv. Make use of the local IXP infrastructure in place	• Australia has indicated funds of over AUD14 million for cyber security that we can tap into for technical assistance. PACSON is also well underway. • Encourage more regional cooperation in cyber space as most of our conditions and issues are the same and its not usually just a matter of scale • Create and enabling environment and build the right infrastructure to entice the big players like Google, Amazon to come to the pacific. • Revisit telecom regulatory oversight and processes to ensure that it allows for businesses and entrepreneurs to thrive and not be the stumbling block.