Promoting efficient Internet traffic management through Internet Exchange Points

Insights from the Pacific

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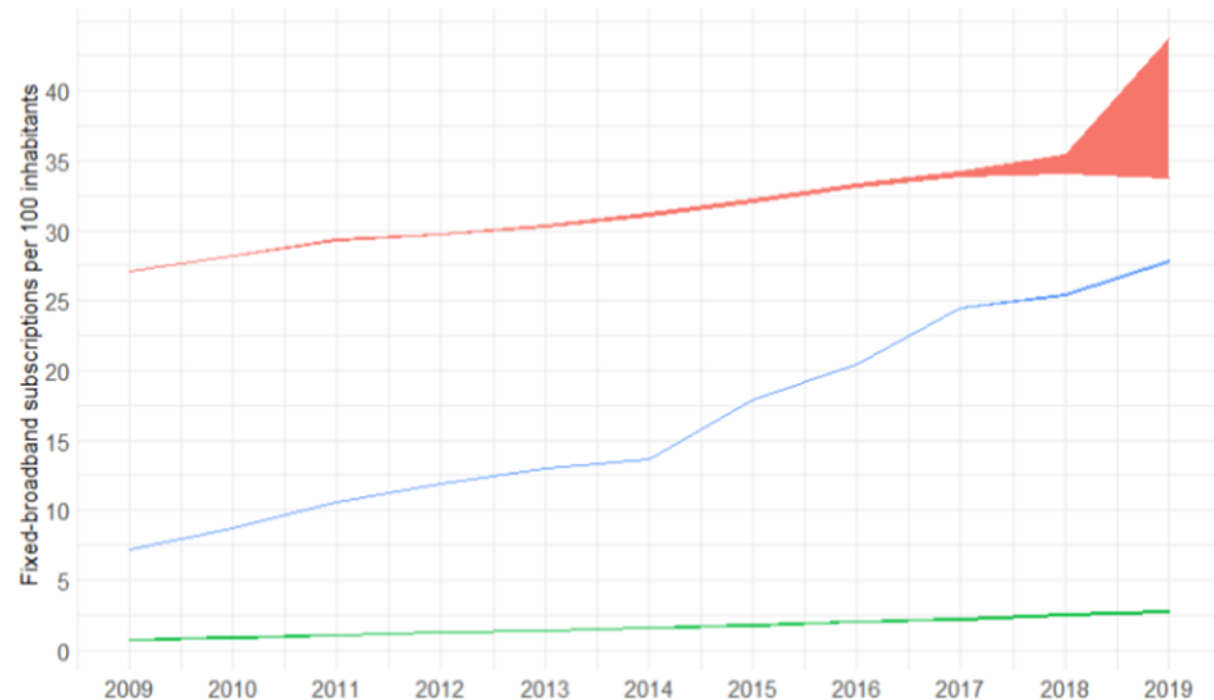
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1. Challenge: Internet Access & Speed by income groups

Access: Faster growth in High Income & UMI, compared to LLMI.

Internet speed: Significant growth in HI in 2018-2019 (width of line), compared to UMI & LLMI.
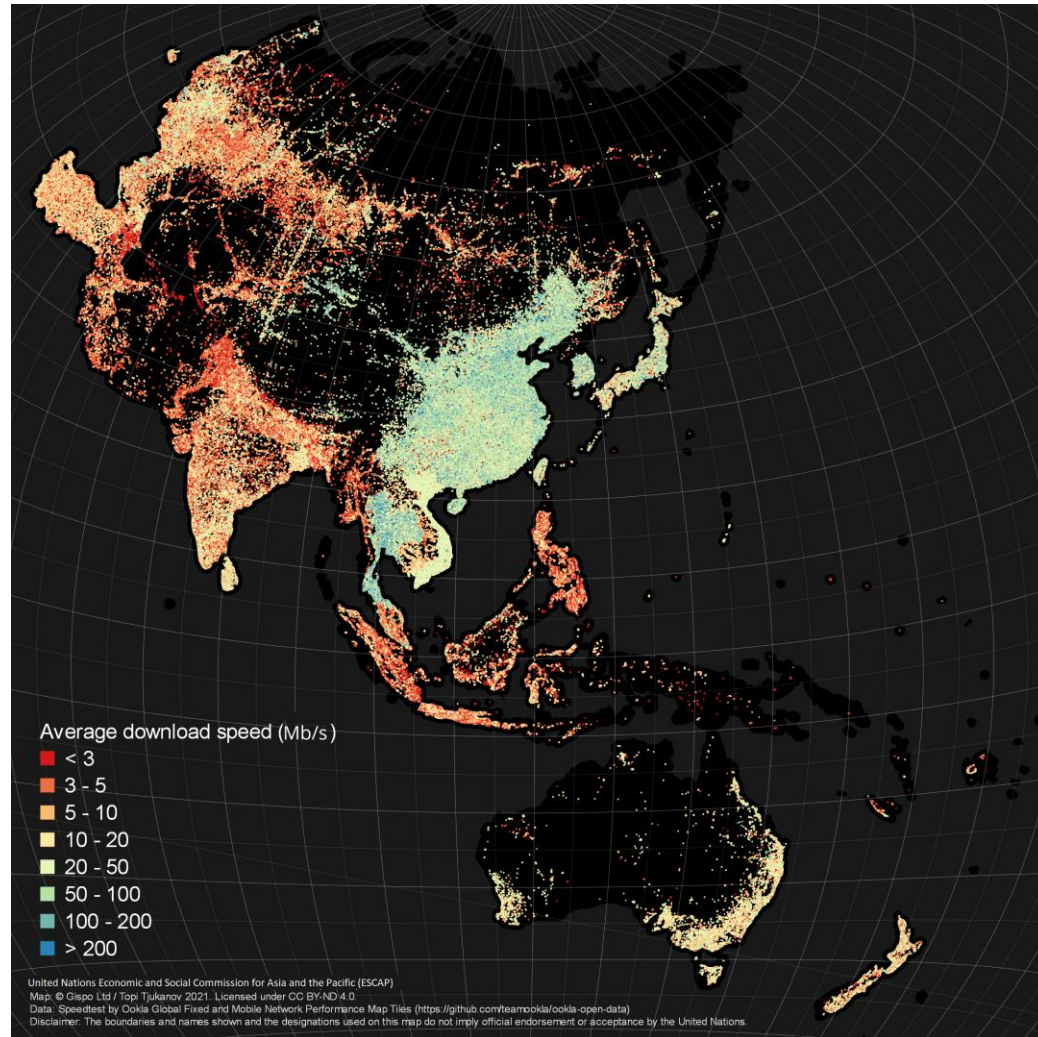

Note: Width of the line indicates Internet speed (Mbit/sec) (weighted average) of income group proportional to other income groups.
Source: ESCAP's calculation based on the ITU's, 'World Telecommunication/ICT Indicators database 2020 (24th Edition/July 2020)'

1. Challenge: Internet Speed by country

Internet speed: Some countries such as the Republic of Korea & Japan have higher average download speed (green colour shade) in 2020 nationwide.

Average download speed (Mb/s)

- < 3
- 3 - 5
- 5 - 10
- 10 - 20
- 20 - 50
- 50 - 100
- 100 - 200
- > 200

United Nations Economic and Social Commission for Asia and the Pacific (ESCAP)
Map. © Gispo Ltd / Topi Tjukanov 2021. Licensed under CC BY-ND 4.0.
Data: Speedtest by Ookla Global Fixed and Mobile Network Performance Map Tiles (https://github.com/teamookla/ookla-open-data)
Disclaimer: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

1. Challenge: Internet Affordability

Affordability – Monthly expenditure on fixed-broadband as a % of GNI/capita (<2% - affordable; >2% unaffordable, UN Broadband Commission target).
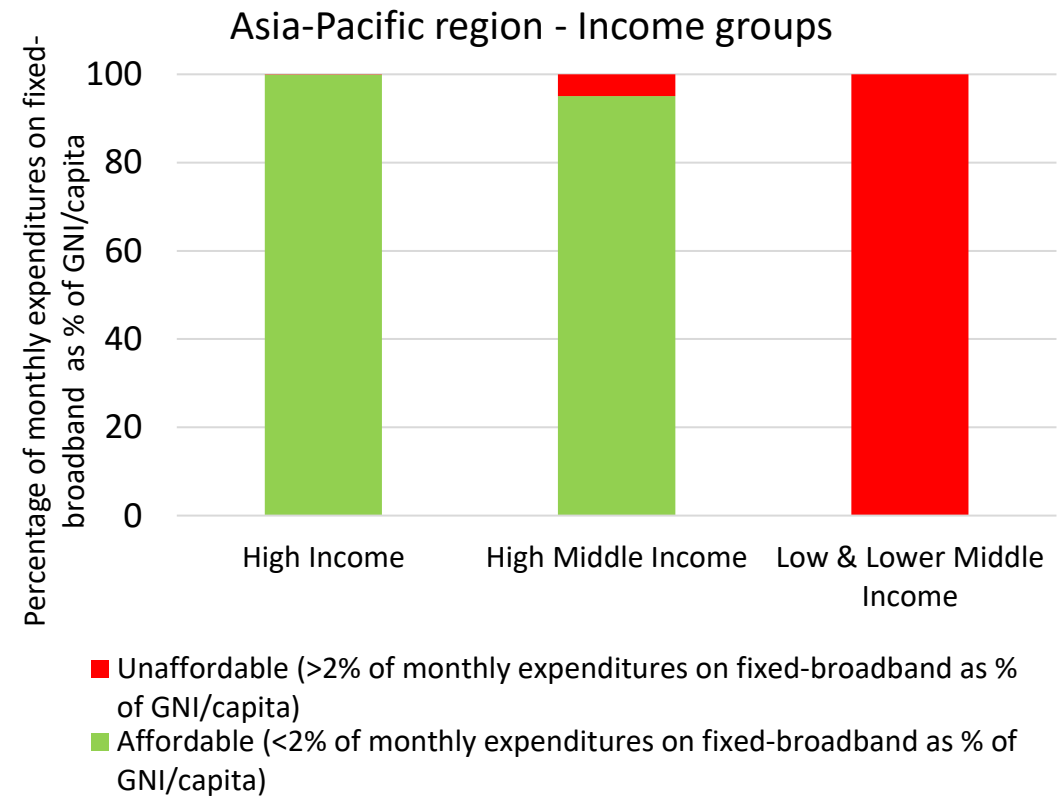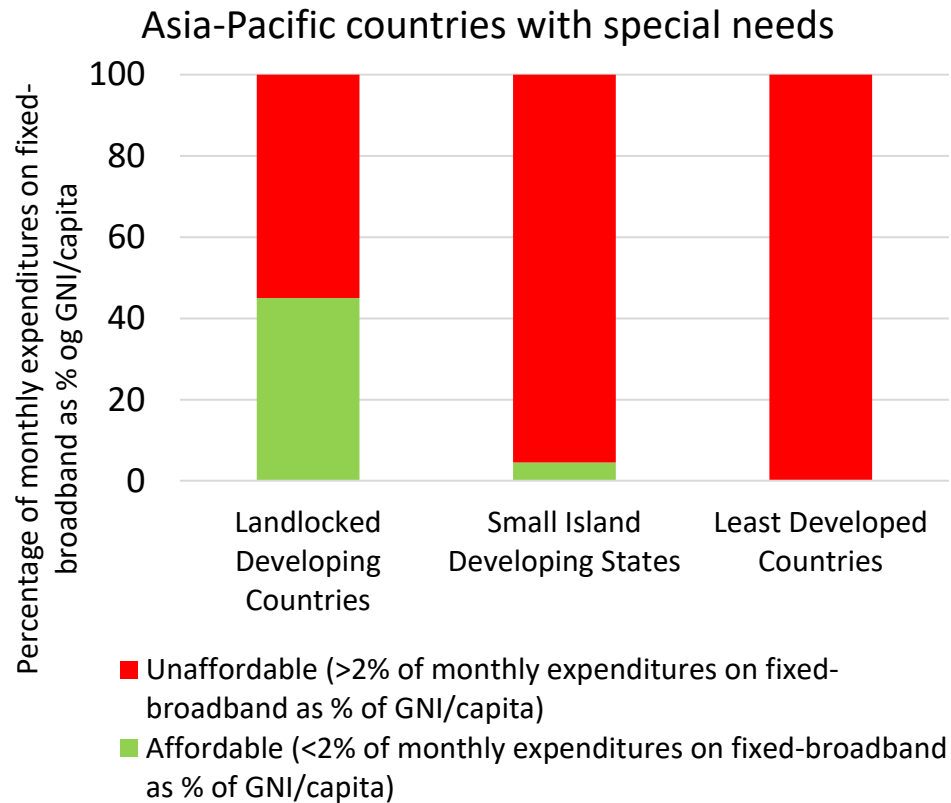
Source: ITU, World Telecommunications/ICT Indicators Database, July 2020 Edition

2. ESCAP Mandates

- **Resolution 75/7 (4 June 2019):** [1]

Requests the Executive Secretary:

(a)   To continue support to the ongoing activities on the **implementation of the Asia Pacific Information Superhighway** initiative;

(b)   To support member countries with **policy advice, technical studies and capacity-building**, upon request, in relation to the development and implementation of subregional implementation plans for the Asia-Pacific Information Superhighway initiative;

- **Committee on Information and Communications Technology, Science, Technology and Innovation on its third session (19-20 August 2020):**[2]

Recommendation 6. The Committee recognizes that the **establishment of carrier-neutral Internet exchange points can promote increased intraregional content exchange** and improve the reliance, quality and cost of Internet connectivity and recommends that the secretariat continue to study and promote the work on those issues, with a focus on least developed countries, landlocked developing countries and Pacific small island developing States.

[1]https://www.unescap.org/sites/default/files/Resolution%2075-7.%20Advancing%20the%20implementation%20of%20the%20Asia-Pacific%20Information%20Superhighway%20initiative%20through%20regional%20cooperation.pdf
[2]https://www.unescap.org/sites/default/d8files/event-documents/Final%20report%20CICTSTI3%2C%20English.pdf

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3. Asia-Pacific Information Superhighway (AP-IS)

- AP-IS Master Plan 2019-2022

- Four pillars (Infrastructure connectivity, Internet traffic & network mgt, e-resilience, and broadband for all)

- IXPs for quality Internet in Pacific island developing economies & CLV + Thailand

- Co-deployment of ICT, Transport and Energy infrastructures in selected NCA economies + Mongolia

- Policy experimentation through regulatory sandboxes on frontier technologies in selected economies – landlocked, least developed

AP-IS Steering Committee Session

4. Promoting efficient Internet traffic management through IXPs – insights from the Pacific

1. Subregional workshop on implementation of the AP-IS for achieving the SDGs in Pacific island countries, Nadi, Fiji, 19-23 November 2018[3]

- Pacific island delegations mapped and aligned AP-IS pillars and activities to the Pacific Regional ICT Strategic Action Plan (PRISAP) 2015–2020.

- A representative of **Vanuatu requested ESCAP and partners to assist with conducting of a feasibility study on a Pacific IXP** to increase Internet traffic route efficiency and reduce costs.

[3] https://www.unescap.org/events/subregional-workshop-implementation-asia-pacific-information-superhighway-achieving#

4. Promoting efficient Internet traffic management through IXPs – insights from the Pacific

2. Strengthening Efficient Internet Traffic Management Through a Subregional Internet Exchange Point (IXP) in Pacific Island Countries (3-5 December 2019)[4]

- Feasibility Study[5] found that a Pacific IXP is technically feasible.

- The Pacific delegates recommended that the ESCAP secretariat set up a Working Group to discuss and agree on the operational principles and modalities of the Pacific IXP.

- The representative of the **Solomon Islands recommended that ESCAP supports a second study on assessing the economics and business models of establishing Pacific IXPs**.

[4] https://www.unescap.org/events/strengthening-efficient-internet-traffic-management-through-subregional-internet-exchange
[5] https://www.unescap.org/sites/default/files/Pacific%20Regional%20Internet%20Exchange%20Feasibility%20Study%2C%20Internet%20Society.pdf

4. Promoting efficient Internet traffic management through IXPs – insights from the Pacific

3. Second Working Group on Pacific Internet Exchange Point (IXP) and capacity training workshop on IXP's operational modalities (Virtual Meeting) (5 August 2020)[6]

- **Operationalization study** proposed options for establishing a Pacific IXP.

- ESCAP secretariat in collaboration with the Internet Society proposed to:

1. **Facilitate national consultations** in the candidate countries (Fiji, New Zealand, and Samoa) on operationalization of the Pacific IXP;

2. **Develop a draft framework agreement** (MOU) for review of the Working Group on Pacific IXP; and

3. Conduct any additional studies (or policy advisory service) on specific issues of importance to facilitating the establishment of a Pacific IXP, when necessary.

[6] https://www.unescap.org/events/second-working-group-pacific-internet-exchange-point-ixp-and-capacity-training-workshop-ixp-s

4. Promoting efficient Internet traffic management through IXPs – insights from the Pacific

4. Pacific IXP Informal Multistakeholder Consultations in Fiji, New Zealand, and Samoa (Virtual Meetings) (20 October, 13 November, 15 November, 17 November, 26 November 2020 and August 2021)[7]

- National consultations in Fiji, New Zealand and Samoa <u>supported in principle</u> the Pacific IXP proposal.

- Fiji IX Steering Committee requested for a <u>establishing a Technical Steering Group</u> between the three target countries to discuss on the details of establishing a Pacific IXP.

- The Hon. Minister for the Ministry of Communications and Information Technology of Samoa in February 2021 offered support to the Pacific IXP work, as well as <u>requesting the ESCAP secretariat to facilitate an intercountry Memorandum of Understanding (MOU)</u> between the 3 target countries (Fiji, Samoa & NZ) to establish the Pacific IXP.

- Multistakeholder consultations in 2021 to focus on: (1). Discuss Guideline on establishing Pacific IXP; (2). Review and provide comments on Draft MOU; (3). Meeting of the 3 target countries to discuss the draft MOU

[7] https://edit.unescap.org/sites/default/d8files/event-documents/Summary%20note%20%28draft%29.pdf

5. Upcoming Pacific IXP capacity training workshop

1. Capacity Training Workshop (Virtual Meeting) (02 November 2021)[8]

- Stakeholders of Fiji, New Zealand, and Samoa are to meet and discuss:

1. a guideline on the operationalization strategy plan for building the Pacific IXP in the platform of Asia-Pacific Information Superhighway (AP-IS)

2. a draft operational costing study on establishing the Pacific IXP for Fiji, New Zealand & Samoa

3. a draft Memorandum of Understanding.

[8] https://www.unescap.org/events/2021/capacity-training-workshop-operationalizing-pacific-internet-exchange-point-ixp

6. Lessons learnt

1. <u>Political support</u> is critical of Governments interested in connecting to a 'subregional' IXP

2. Active <u>engagement and support</u> of other stakeholders including Regulators & Internet Service Providers

3. Agreement by all parties on an <u>operational model</u> for establishing an IXP

4. <u>Analytical research</u> into the opportunities and challenges of establishing an IXP

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