Improving broadband access in Southeast & Central Asia

June 2016 | Bangkok

Rajnesh Singh
Director, Asia-Pacific Bureau
To promote the open development, evolution, and use of the Internet for the benefit of all people throughout the world.
The Internet Society at Work

- Provides leadership in policy issues
- Advocates open Internet Standards
- Promotes Internet technologies that matter
- Develops Internet infrastructure
- Undertakes outreach that changes lives
- Recognizes industry leaders
Global Presence

114 Chapters Worldwide
84k Members and Supporters
143 Organization Members
5 Regional Bureaus
20 Countries where ISOC staff are present
Asia Pacific: 20 Chapters

Australia
Bangladesh Dhaka
Hong Kong
India Bangalore
India Chennai

India Delhi
India Kolkata
India Trivandrum
Indonesia Jakarta
Japan

Malaysia
Nepal
Pacific Islands
Pakistan Islamabad
Philippines

Republic of Korea
Singapore
Sri Lanka
Taiwan Taipei
Thailand
The Internet in Southeast Asia

▪ Southeast Asia’s Internet population has doubled in the last five years, spurred mainly by wireless broadband adoption.

▪ Emerging economies drive Internet usage growth in the region—however, broadband penetration in ASEAN continues to lag behind the global average.

▪ Wide discrepancies between economies like Singapore and Myanmar present significant challenges to the fruition of the ASEAN Economic Community.

### Internet penetration

- **Singapore**: 82%
- **Brunei**: 68.80%
- **Malaysia**: 67.50%
- **Vietnam**: 48.30%
- **Philippines**: 39.70%
- **Thailand**: 34.90%
- **Indonesia**: 17.10%
- **Laos**: 14.30%
- **Cambodia**: 9%
- **Myanmar**: 2.10%

The Internet in Central Asia +5

- Like Southeast Asia, the Internet population in Central Asia +5 has doubled in the last five years.
- The pace by which these 10 countries have transitioned from fixed to mobile broadband vary greatly—resulting in greater gaps in broadband density between them.
- But overall, mobile broadband proves to be more accessible, and have made Internet access more affordable especially for the bottom 6 countries.

### Internet penetration

- **Azerbaijan**: 61%
- **Kazakhstan**: 55%
- **Georgia**: 49%
- **Armenia**: 46%
- **Uzbekistan**: 44%
- **Kyrgyzstan**: 28%
- **Tajikistan**: 17%
- **Pakistan**: 14%
- **Turkmenistan**: 12%
- **Afghanistan**: 6%

Issues and challenges – Southeast Asia

- Incumbent carriers dominate the market in many ASEAN economies—they run their own Internet transit points and do not always provide equitable access to competing ISPs.

- This has brought forth access bottlenecks to international gateways and cable landing stations—competing carriers may need to connect indirectly to the incumbent’s network, paying premium rates while facing bandwidth restrictions.

- The lack of carrier-neutral Internet exchange points (IXPs) in the sub-region forces smaller ISPs to transit their traffic through the incumbent’s network even when traffic is domestic.

- While many ASEAN countries enjoy access to submarine cables, some like Cambodia, Laos and Myanmar either don’t have landing stations, or depend on aging and low-capacity connections.
Most of the 10 countries in the study are landlocked—which drastically limits their access to submarine cable systems and makes them reliant on transit and interconnections with their neighbours.

These interconnections can be costly, and are also largely low-capacity trans-border links—the lack of adequate international bandwidth thus leads to comparatively lower speeds and higher prices.

Mountainous and/or desert terrain, along with low populations scattered over large distances also pose significant hurdles to Internet infrastructure roll out.

Majority of the countries studied have dominant state incumbents—which contributes to unfavourable market conditions that further limit broadband adoption in the sub-region.
Trends and observations

- In both Southeast and Central Asia, the cost of international bandwidth is higher in countries that do not have adequate international connectivity—this is passed on to end-users.

- Meanwhile, countries with high international bandwidth tend to have lower transit prices.

- There is also a strong correlation between affordability of access and Internet take-up in both sub-regions.

- It is worth noting that countries with higher Internet penetration also tend to have competitive market conditions.
Key takeaways

- Countries with low Internet usage levels need to expand national coverage via fixed-line backhaul networks, with wireless playing key role for access.

- In both sub-regions, connectivity is patchy or non-existent in small or remote communities — in case of market failure, government can lead in extending last mile access to unserved and underserved areas.

- For Central Asia +5, Pakistan, along with Iran, could channel greater bandwidth into the sub-region by being a transit provider (both have submarine cable access).

- For Southeast Asia, opening the telecoms market can boost supply, which can in turn drive down wholesale prices of international connectivity.

- Local caching facilities, e.g. local data centres, can encourage both local and foreign providers to have their content hosted on local servers, thus lowering both latency of access and international transit costs.

- The development of locally relevant content and apps will make the Internet valuable to those who already have connectivity within their reach.
**Policy recommendations**

<table>
<thead>
<tr>
<th>Think wireless</th>
<th>Internet access policies should be more mobile- and wireless-centric—and so do initiatives to connect unserved and underserved areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Make it affordable</td>
<td>Make network access available and affordable for ISPs, and make Internet access devices more affordable to the general populace</td>
</tr>
<tr>
<td>Build IXPs</td>
<td>Support the development of carrier-neutral Internet exchange points to help reduce transit costs and remove bandwidth bottlenecks</td>
</tr>
<tr>
<td>Be transparent</td>
<td>Make policies, procedures and regulations clear and transparent to encourage market participation and promote a competitive environment</td>
</tr>
<tr>
<td>Policy recommendations</td>
<td></td>
</tr>
<tr>
<td>--------------------------------------------</td>
<td></td>
</tr>
<tr>
<td><strong>Share infrastructure</strong></td>
<td></td>
</tr>
<tr>
<td>Urge operators to share access to facilities and resources, from towers to spectrum, especially for economies that only have 1 or 2 dominant carriers</td>
<td></td>
</tr>
<tr>
<td><strong>Build capacity</strong></td>
<td></td>
</tr>
<tr>
<td>Develop the ability of marginalised sectors, including women, persons with disabilities and low-income populations to use digital tools</td>
<td></td>
</tr>
<tr>
<td><strong>Stimulate demand</strong></td>
<td></td>
</tr>
<tr>
<td>Make public services available online, starting with health, education, government and disaster risk management services</td>
<td></td>
</tr>
<tr>
<td><strong>Boost backhaul supply</strong></td>
<td></td>
</tr>
<tr>
<td>Encourage upgrades and investments in fibre-based backhaul infrastructure to support the growing demand for broadband</td>
<td></td>
</tr>
</tbody>
</table>