Digital Thailand

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The challenge of going digital

1. We live in a world digital economy

2. ASEAN has 2 challenges
   – To bridge the digital divided within and between AMS
   – Shift gears from an Internet economy to a digital economy and society

3. Masterplans and national plans cannot be successful without *interconnectivity* (economies of scale) and interoperability of platforms and apps (economies of scope)
Growing global data and comms traffic
ASEAN Economic Community (AEC)

Connectivity, encompassing physical, economic, human and digital arenas - is a critical requirement for ASEAN to remain competitive and for the AEC to succeed.
Level of economic development is only part of the answer.

ASEAN divides into 3 distinct clusters with large gaps in between.
International bandwidth supply affects wholesale prices and national coverage.

<table>
<thead>
<tr>
<th>Country</th>
<th>International Capacity per capita (kbps)</th>
<th>Fixed BB coverage</th>
<th>Mobile Wireless BB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Singapore</td>
<td>258.3</td>
<td>★★★★★☆☆</td>
<td>★★★★★★☆☆</td>
</tr>
<tr>
<td>Malaysia</td>
<td>15.6</td>
<td>★★★☆☆☆☆☆</td>
<td>★★★★★☆☆☆</td>
</tr>
<tr>
<td>Thailand</td>
<td>6.62</td>
<td>★★★☆☆☆☆☆</td>
<td>★★★★★☆☆☆</td>
</tr>
<tr>
<td>Philippines</td>
<td>5.45</td>
<td>★★★☆☆☆☆☆</td>
<td>★★★★★☆☆☆</td>
</tr>
<tr>
<td>Vietnam</td>
<td>5.15</td>
<td>★★★☆☆☆☆☆</td>
<td>★★★★★☆☆☆</td>
</tr>
<tr>
<td>Indonesia</td>
<td>1.03</td>
<td>★★★☆☆☆☆☆</td>
<td>★★★★★☆☆☆</td>
</tr>
<tr>
<td>Cambodia</td>
<td>0.76</td>
<td>★★★☆☆☆☆☆</td>
<td>★★★★★☆☆☆</td>
</tr>
<tr>
<td>Lao PDR</td>
<td>0.38</td>
<td>★★★☆☆☆☆☆</td>
<td>★★★★★☆☆☆</td>
</tr>
<tr>
<td>Myanmar</td>
<td>0.29</td>
<td>★★★☆☆☆☆☆</td>
<td>★★★★★☆☆☆</td>
</tr>
<tr>
<td>Brunei</td>
<td>n/a</td>
<td>★★★★★☆☆☆</td>
<td>★★★★★☆☆☆</td>
</tr>
</tbody>
</table>
Market conditions for IXPs and ISPs matter.

High Internet Transit Traffic Cost
(USD per Mbps per month)

- SG: < $10
- MY: $25-30
- VT: $70
- ID: > $100 ~ $60/70
- PH: $80
- TH: $80
- KH: $100
- LA: $100
- MM: > $100
- BR: N/A

Lack of (perceived) demand + Limited supply + Non-competitive market conditions for IXPs

Lack of carrier-neutral IXPs

Unfavorable bi-lateral peering arrangement for non-incumbents

Higher cost, latency in Internet speed, quality of service issues
The resulting affordability varies greatly

<table>
<thead>
<tr>
<th>Country</th>
<th>Fixed-BB monthly subscription (USD/ Mbps)</th>
<th>As % of GDP per capita</th>
<th>Affordability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Singapore</td>
<td>$1.7</td>
<td>0.04%</td>
<td>Affordable</td>
</tr>
<tr>
<td>Thailand</td>
<td>$1.3</td>
<td>0.30%</td>
<td>Affordable</td>
</tr>
<tr>
<td>Brunei</td>
<td>$52</td>
<td>1.60%</td>
<td>Moderate</td>
</tr>
<tr>
<td>Indonesia</td>
<td>$6.3</td>
<td>2.20%</td>
<td>Moderate</td>
</tr>
<tr>
<td>Malaysia</td>
<td>$28</td>
<td>3.20%</td>
<td>Moderate</td>
</tr>
<tr>
<td>Philippines</td>
<td>$11.7</td>
<td>5.10%</td>
<td>Moderate</td>
</tr>
<tr>
<td>Laos PDF</td>
<td>$35</td>
<td>25.50%</td>
<td>Expensive</td>
</tr>
<tr>
<td>Cambodia</td>
<td>$35</td>
<td>41.70%</td>
<td>Expensive</td>
</tr>
<tr>
<td>Myanmar</td>
<td>$100</td>
<td>138.20%</td>
<td>Unaffordable</td>
</tr>
</tbody>
</table>

Note: Broadband commission recommends the upper limit of 5% for communication expenditure as a % of GDP per capita (PPP)
Leading to a digitally integrated economy and society

The role of the government is to facilitate advancement of an Internet economy with the vision to instill interoperability in order to usher in the digital economy.
Successful transition requires a few building blocks…

1. **Widespread Use and Penetration of Mobile**
2. **Ubiquitous Internet Access**
3. **Interoperable Mobile and E-Payment Systems**
4. **Open Online Marketplaces**
5. **Conducive Business Environment**
6. **Transparent and Enabling Policies and Regulation**
Interconnectivity and the Digital Economy

- Major commercial activities and value transactions running on IP-based networks
- Digitization of social interactions and Internet becoming the veins of social activities
- More ‘Things’ coming online (M2M, HetNet, IoT)
- Internet becoming truly ubiquitous via mobile, tablet and other devices
- Platforms “talk” to each other and content and interactions pass through different platforms

(Source: TRPC (2015), Unlocking the Potential of the Internet for the ASEAN Economies)
Digital Society

- **Interconnected Health**: opportunities to improve patient records, patient care, patient monitoring; remote services, etc.
  - e-Health falling short by lack of network interconnection between doctors, clinics, patients, etc; lack of inter-operability of systems
- **Education**: ASEAN ICT Masterplan 2015 commitments to promote ICT for education, including curricula development; Massive Open Online Courses (MOOCs) are one emerging platform, but need transferability
  - Challenges include basic connectivity, cost of connection, bandwidth availability, cost of maintenance
Reference

ISOC/TRPC (2014) *Unleashing the Potential of the Internet for ASEAN Economies*

*Thank You*