DOI Applied to Indonesia: Assessing ICT Policy & Regulatory Environment

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Overview of findings

- DOI methodology is overall robust but data quality and availability is a serious problem.
- Among low-income ASEAN countries, Indonesia ranks highest.
- To score higher on DOI, Indonesia needs to:
  - **Opportunity**-Extend mobile coverage using Universal Service fund; lower prices by stimulating competition by transitioning to unified licensing regime;
Overview of findings

- **Infrastructure**- Revise licensing framework to allow infrastructure competition; introduce new entrants in the fixed sector.

- **Utilization**- Unbundle local loop to stimulate broadband rollout; license exempt 5.725-5.85Ghz for WIMAX; lower leased line & international bandwidth prices.
## Indonesia’s DOI Score

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Digital Opportunity Index</strong></td>
<td>0.31</td>
<td>0.27</td>
<td>0.33</td>
</tr>
<tr>
<td><strong>Opportunity</strong></td>
<td>0.84</td>
<td>0.66</td>
<td></td>
</tr>
<tr>
<td>Percentage of population covered by mobile cellular telephony</td>
<td>0.85</td>
<td>0.26</td>
<td></td>
</tr>
<tr>
<td><strong>Infrastructure</strong></td>
<td>0.05</td>
<td>0.11</td>
<td></td>
</tr>
<tr>
<td><strong>Utilization</strong></td>
<td>0.03</td>
<td>0.03</td>
<td></td>
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</tbody>
</table>
DOI Methodological issues

- Percentage of population covered by mobile cellular is a flawed indicator:
  - No common methodology being used by operators
  - Not verifiable, hence incentive to overstate
- Need for a more robust indicator for mobile coverage, something countable like BTS.
- OECD low user basket has little relevance for developing countries that have, in many cases, higher average use.
DOI Methodological issues

- Need common definition of who a mobile subscriber is. Based on VLS data and using same inactivity period for prepaid users.
Data Problems

- Greater coordination needed between NRA and National Statistical Organization (NSO).
- Non-availability of household level data like ownership of fixed phones, PC and Internet access.
- Developing countries have a large proportion of PCs, Internet access and fixed phones in offices. Any assumptions on household ownership is problematic.
## Indonesia’s Telecom Market Structure

<table>
<thead>
<tr>
<th>Telecom services</th>
<th>Telecom operators</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fixed wireline local</strong></td>
<td>Exclusive right 1996-2010 PT Telkom (Prematurely ended in 2002, but only in theory)</td>
</tr>
<tr>
<td><strong>Fixed domestic LD</strong></td>
<td>Exclusive right 1996-2005 PT Telkom (Prematurely ended in 2003, but only in theory)</td>
</tr>
<tr>
<td><strong>Fixed wireless local</strong></td>
<td>Limited competition (PT Telkom, PT Indosat and Bakrie Telecom)</td>
</tr>
<tr>
<td><strong>Fixed international</strong></td>
<td>Monopoly from 1995-2004 (PT Indosat) Currently, duopoly (PT Telkom) and third license under consideration.</td>
</tr>
</tbody>
</table>
## Indonesia’s Telecom Market Structure

<table>
<thead>
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<th>Telecom services</th>
<th>Telecom operators</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mobile GSM</strong></td>
<td>Competitive (Telkomsel, Excelkomindo, Indosat)</td>
</tr>
<tr>
<td><strong>Internet Service Provision</strong></td>
<td>(Quasi?) Competitive Currently 124 ISPs official, 54 unlicensed</td>
</tr>
</tbody>
</table>
Mobile Market Structure

GSM Operators (Major Holders)
- Indosat (ST Telemedia)
- Telkomsel (Singtel & Telkom)
- Excelcom (Telekom Malaysia)

Mobile CDMA
- Mobile-8 (Bimantara)

Fixed Wireless CDMA
- Bakrie Telecom (Bakrie)
- Telkom Flexi (Telkom)
- “StarOne” (Indosat)

New License Holders
- Hutchison CP Tel
- LippoTelecom (Maxis)

Source: Company reports and estimates

From Indosat presentation
Indonesia’s ICT Sector Performance

Telecom growth in Indonesia

- **Fixed**
- **F+WA**
- **Cellular**
- **Internet**

**New Telecom Act: Increased private participation**

**BRTI, Regulator established**

Telkomsel Prepaid targeted at low-income user

Esia

per 100 inhabitants
Indonesia Benchmarked with ASEAN

ASEAN ICT Infrastructure
Indonesia Benchmarked with ASEAN

ASEAN ICT Affordability

- **OECD Low User Basket**
- **As % of Monthly GNI**
- **DOI Opportunity**

<table>
<thead>
<tr>
<th>Country</th>
<th>OECD Low User Basket</th>
<th>As % of Monthly GNI</th>
<th>DOI Opportunity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cambodia</td>
<td>$3.96</td>
<td>0.36</td>
<td>14.9%</td>
</tr>
<tr>
<td>Indonesia</td>
<td>$4.06</td>
<td>0.89</td>
<td>12.5%</td>
</tr>
<tr>
<td>Laos</td>
<td>$4.06</td>
<td>0.4</td>
<td>14.1%</td>
</tr>
<tr>
<td>Vietnam</td>
<td>$6.47</td>
<td>0.76</td>
<td>0.93</td>
</tr>
<tr>
<td>Philippines</td>
<td>$4.03</td>
<td>4.1%</td>
<td>0.95</td>
</tr>
<tr>
<td>Thailand</td>
<td>$6.71</td>
<td>3.2%</td>
<td>0.97</td>
</tr>
<tr>
<td>Malaysia</td>
<td>$5.84</td>
<td>1.5%</td>
<td>0.93</td>
</tr>
<tr>
<td>Brunei</td>
<td>$7.79</td>
<td>0.93</td>
<td>0.3%</td>
</tr>
<tr>
<td>Singapore</td>
<td>$5.77</td>
<td>0.97</td>
<td>1.0</td>
</tr>
</tbody>
</table>
Strategies for Scoring Higher

Opportunity

- Allow mobile companies to participate in least-cost subsidy auction to extend mobile coverage
- Transition to Unified Licensing will allow greater participation in fixed sector and lower prices
- Revise current licensing framework to allow ISPs to build their own infrastructure
- Introduce competition in international gateway to lower international bandwidth prices
- Mandate incumbent to lower domestic leased line prices which are essential input for Internet service
Strategies for Scoring Higher

Infrastructure
- Political will to introduce competition in fixed line sector
- Granting full-mobility to CDMA operators under unified licensing will allow faster growth due to low-per-line technology

Utilization
- Lower Internet prices by introducing competition in broadband market—Unbundling of Local Loop
- ISPs using WIMAX can increase number of mobile broadband user. Should NOT license WIMAX technology
- Need to delicense 5.725-5.85, as many countries have already done, to allow ISPs, cooperatives, entrepreneurs to connect parts of Indonesia that have no fixed infrastructure.
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More info on Six Country Indicators Study:
www.lirne.net