LAO PDR
TELECOMMUNICATION SECTOR DEVELOPMENT

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TELECOMMUNICATION SECTOR DEVELOPMENT IN LAO PDR

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1. Brief of Lao P.D.R

- Location: **South East Asia**
- Area: **236,800 Sq.km**
- Capital: **Vientiane**
- Currency: **Kip** (1USD=8,000Kip)
- Populations: **6,5M**
- Official Language: **Lao**
- GDP per capita: **USD 1,692**
- Country code: **856**
- ccTLD: **.la**
- Tele density: **79.39%**
  - Fixed line: **10.44%**
  - Mobile: **68.95%**
- Posts: **07 companies**
- IXP: **01**
- ISP: **06**
- Internet density: **17.0%**
2. **Business Introduction**

- Before **1983** the Telecommunications state own Government. For PSTN and Radio Network. **Cross-Bar switching system.**
- **1983 to 1994** was EPTL is monopoly state enterprise. For Posts & Telecoms(PSTN&Radio). SPC switching system in year 1990.
- **1995** EPTL was separate into **EPL and ETL.**
- From **1996** for PSTN, Radio & Mobile system.
- **7 Posts:** EPL, DHL, TNT, OCS, LCT, PT & Sunjin.
- **5 telecoms operators:** ETL, LTC, STL, VPL & SKY.
- **6 ISPs:** ETL, LTC, STL, VPL, SKY & Planet.
- FDI from **1995 to Now.**
3. **Telecom service**

1. Mobile phone 2G, 3G, 4G...
2. Public Switch Telephone Network (Fix Phone)
3. Gateway (National & International)
4. Lease Line
5. Internet service
6. Voice over IP (VoIP)
7. GPRS, SMS/VMS
Lao Government Infrastructures Overview

- **E-government Center**
- **Ministries Offices**
- **Province Offices**
- **Village Offices**

**Phase-1**

**Government Network**

**Phase-2A**

National Transmission Network

**Phase-2B**

- **LANIC**
- **Lao National Internet Center**
- **ISP**
- **Telecom Carriers**

People

Government, Public & Business

Public Network

International Network

- **People**
- **Business**

**Village Offices**

**Ministries Offices**
4. TECHNOLOGY

- The technology that is being used in the country has been accepted to be obsolete by most of the developed economies of the world.

- That is the reason that the products are produced by the country have quality and are available to compete within the world markets.

- These companies are the reason that most of the development that we see in the company is regarding the technologies in that has also lead to better service offering.

- Although overemphasis on only technology enhancement has lead on to ignorance the aspect of Service Quality to the customer.
Technology change
5. INTERNATIONAL TERRESTRIAL CABLE LINKS
INFRASTRUCTURE

➢ The first optical fiber cable systems in 1994 from Shanghai to Singapore, through Vietnam, Lao PDR, Thailand, and Malaysia. China-South East Asia Cable (CSC) 430km capacity 2.5Gbps utilizes Synchronous Digital Hierarchy (SDH) technology.

➢ The second Government high backbone capacity optical fiber transmission network national and international capacity of 10Gbps utilizes Synchronous Digital Hierarchy (SDH) technology.

➢ Government and Business transmission optical fiber length consist 63,060KM in the whole country.

➢ The international gateway between China, Vietnam, Thailand, Cambodia and Myanmar are 20 cross-border ports and bandwidth capacity 13Gbps (2012, 2.5Gbps).
China: 3 points of connection
Vietnam: 9 points of connection
Myanmar: 3 points of connection
Thailand: 5 points of connection
Cambodia: 2 points of connection
Various interface: E1, STM1, 2.5G, 10G, GE, 10GE, etc.
Beneficiary (15 countries / economies)

- Afghanistan: Afghanistan Research Education Network (AfgREN)
- Bangladesh: University Grants Commission (UGC)
- Bhutan: Department of Information Technology and Telecom (DIT&T)
- Cambodia: Institute of Technology of Cambodia (ITC)
- India: National Knowledge Network (NKN)
- Indonesia: Institut Teknologi Bandung (ITB)/INHERENT
- Laos: Lao Education and Research Network (LERNet)
- Malaysia: Malaysian Research and Education Network (MYREN)
- Myanmar: Myanmar Research and Education Network (mmREN)
- Nepal: Nepal Research and Education Network (NREN)
- Pakistan: Pakistan Education and Research Network (PERN)
- Philippines: Advanced Science and Technology Institute (ASTI)
- Sri Lanka: Lanka Education and Research Network (LEARN)
- Thailand: Thailand Research Education Network Association (ThaiREN)
- Vietnam: National Agency for Science and Technology Information (NASATI)

Non-Beneficiary (6 countries / economies)

- Australia: Australia, Academic and Research Network (AARNet)
- China: China Education and Research Network (CERNet), China Science & Technology Network (CSTNet)
- Hong Kong: Hong Kong Academic and Research Network (HARNet)
- Japan: National Institute of Information and Communications (NICT), National Institute of Informatics (NII), Ministry of Agriculture, Forestry and Fisheries Research Network (MAFFIN)
- Korea: National Information Society Agency (NIA)
- Singapore: Singapore Advanced Research & Education Network (SingAREN)

Further country National Research and Education Networks (NRENs) may join during the period of TEIN projects.
TEIN (Trans-Eurasia Information Network)

Connecting Asia and Europe’s Research and Education Communities

- 20 Asian partners
- 50M+ connected users
- 4 Hubs: Mumbai, Singapore, Hong Kong, Beijing
- Fastest Internet links for Research within Asia
- Highest capacity direct internet links for Research with Europe
- Non-commercial
- 8M Euro EC funding (50% co-funding)
Key Application Area

- Natural disaster warning and post-crisis support
- Crop research
- Tele-surgical training
- Medical tele-consultations
- Virtual lectures
- Global test bed for new technologies
- High Energy Physics Experiment
- e-Social Science
APG cable system

International Transmission
The joint venture will plan to provide such services in Sub-region of Mekong river:

- Transponder rental
- DTH services
- Rural communication services
- International access service.

Satellite Communications
6. **Posts service**

1. Provincial Posts Offices: 17
2. District Posts Offices: 116
3. Region Posts Offices: 28
4. Village Posts Offices: 74
5. Stamp service: 110

Domestically, the outlook for the Posts service in 2014 is 345 offices density 3.1% of village.
7. PUBLIC SWITCH TELEPHONE NETWORK (PSTN) DEVELOPMENT

The development of an extensive telecommunications infrastructure in Lao PDR.

2001: 50,000 subscriber’s (PSTN)

2008: 100,000 subscriber’s (2% penetrations)

2011: 305,781 subscriber’s (4.7% penetration)

2013: 678,697 subscriber’s (10.44% penetration)
8. MOBILE COMMUNICATIONS DEVELOPMENT

- 1993: AMPS system limited in both capacity.
- 1994: AMPS & GSM system.
- 1995: AMPS & GSM system with 1,500 subs.
- 2013: GSM, CDMA & WCDMA in 2.5G; 3G & 4G. 4,481,395 subscribers and penetration 68.95%.
- 2013: PSTN and Mobile reach 5,160,092 sub’s and penetration 79.39%.
9. INTERNET DEVELOPMENT

➢ July, 1996: Assigned by MCTPC & STENO.

➢ 1999: Form a National Committee to resolve the country’s internet situation.

➢ 1998 to 2012: User’s capacity 325,000 users and penetration 5%.

➢ 2013: User’s capacity 520,000 users and penetration 8%.

➢ Middle 2014: User’s capacity very fast increase up to 1,105,000 users and penetration 17% (2013, 8%).
## Operator's Internet bandwidth Middle 2014

<table>
<thead>
<tr>
<th>ISP</th>
<th>Direct to China</th>
<th>Direct to Thailand</th>
<th>Direct to Vietnam</th>
<th>Direct to Google</th>
<th>Direct to UIH</th>
<th>Transit to LANIC</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>LTC</td>
<td>622 M</td>
<td>2,430 M</td>
<td>1,024 M</td>
<td>1,024 M</td>
<td></td>
<td>565 M</td>
<td>5,665 M</td>
</tr>
<tr>
<td>ETL</td>
<td>150 M</td>
<td>1,050 M</td>
<td>300 M</td>
<td></td>
<td>600 M</td>
<td>300 M</td>
<td>2,400 M</td>
</tr>
<tr>
<td>VPL</td>
<td></td>
<td>430 M</td>
<td></td>
<td></td>
<td>500 M</td>
<td>155 M</td>
<td>1,085 M</td>
</tr>
<tr>
<td>STL</td>
<td></td>
<td>310 M</td>
<td>2,020 M</td>
<td></td>
<td>310 M</td>
<td></td>
<td>2,640 M</td>
</tr>
<tr>
<td>SKY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>910 M</td>
<td>910 M</td>
</tr>
<tr>
<td>Planet</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>310 M</td>
<td>310 M</td>
</tr>
<tr>
<td>Total</td>
<td>770 M</td>
<td>4,220 M</td>
<td>3,344 M</td>
<td>1,024 M</td>
<td>1,100 M</td>
<td>2,550 M</td>
<td>13,010 M</td>
</tr>
</tbody>
</table>
10. TYPE OF FDI FOR TELECOMMUNICATIONS SECTOR IN LAO PDR

 PDI:
Portfolio Direct Investments are a FDI the amount of stock and/or capital was not enough to garner a significant voting interest amongst shareholders or owners.

➢ Joint Venture:
The more traditional joint venture is bi-lateral, that is it involves two parties who are within the same industry who are partnering for some strategic advantage.

❖ FDI:
FDI in services like provide key inputs and output to other productive and activities that lead to further investment and competitiveness of an economy through a right policy that expands operation, improve local skills, establish linkages and upgrade technology by investor 100%.
Telecommunication sector investment, 2013

- FDI: 1.1 Billion USD
- Government: 1.4 Billion USD
- Total: 2.4 Billion USD
11. THE HUMAN RESOURCE DEVELOPMENT

➢ The strategic HRD basis for overall management by Institute of Posts and Telecommunications, MPT policy.

➢ The HRD planning is the sum total of the plan formulated for the recruiting, screening, compensation, training, job structure, promotion, and work rules of an organization’s by ICT information systems.

➢ The HRD through public private dialogue (PPD) & SME development and nationwide implementation integrated labor market-oriented vocational education 3,827 persons and training system 430 persons.
12. ASSESSMENT OF POSTS & TELECOMS DEVELOPMENT

The structure of telecommunications sector over the last decade, is role of supply the all telecommunications network facility as:

- Posts services on Telecoms network (The Internet of Things/ IT)
- Mobile phone 4G
- Public Service Telephone Network (Fix Phone)
- Gateway (International International)
- Lease Line, Internet
- Voice over IP (VoIP)
- GPRS
- SMS/VMS

FDI has been looked upon as a tool to transform under developed countries into advanced nations. The inflows will allow multiple benefits such as technology transfer, market access, improvement in voice and data quality and organizational skills. FDI worldwide has also shifted towards services.

Human Resource Development for a Market Economy (HRDME) program and Component 2 indicators, the share of professionally skilled staff has to increase over time in order to enable the enterprise to better master the challenges of tightening competition and increasing product quality on markets. This concerns the owners/managers as well as the staff employed.
13. Tentative Strategic Implementation Plan
## STRATEGIC IMPLEMENTATIONS PLAN

<table>
<thead>
<tr>
<th>Theme</th>
<th>Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. International connectivity</td>
<td>1. By December 2014, in particular international bandwidth</td>
</tr>
<tr>
<td>2. Backbone networks</td>
<td>2. By December 2014 to ensure capacity of backbone</td>
</tr>
<tr>
<td>3. Access networks</td>
<td>3. Establish community broadband access points in 20% of the 69 Post Offices by June 2015, and 60%</td>
</tr>
<tr>
<td>4. Affordability</td>
<td>4. By November 2014, improvements to the competition law regime</td>
</tr>
<tr>
<td>5. Digital Literacy</td>
<td>5. By December 2015, develop a National Digital Literacy: Utilising IT at post offices, schools,</td>
</tr>
<tr>
<td></td>
<td>training to people in the community</td>
</tr>
</tbody>
</table>
STRATEGIC PLAN con’t

Theme
6. Use

7. Conductive environment for broadband-driven economic development

Targets
6. Fulfill the ICT Master Plan Version 1 (ICT-MT (V.1)) by December 2015

7. Year 216:
   - A net primary school of 98% by 2015;
   - Increase adult literacy rate to 99% by 2015;
   - Increase of 25% by 2016 in the annual enrolment of students in key professional skill-areas such as telecommunications/electronics engineering, computer science, and media/information sciences;
   - The improvement of Lao PDR’s ranking to at least the 25th–50th in the Worldwide Governance Indicators index by 2016.
14. CONCLUSION

- The Lao PDR has a central fiber optic network throughout the country with connections to neighboring countries through international, e.g., China, Myanmar, Thailand, Vietnam and Cambodia. Hence, location-wise, the Lao PDR can promote itself as a link to provide communication services via its network for neighboring countries.

- Domestically, the outlook for the Posts service in 2014 is 345 offices are 3.1% of village; telephone and internet business is also promising, with the fix and mobile phone penetration rate rising from 35% in 2007 to 60% in 2010 and 79.39% in 2013.

- Growth in these internets 17%, indicating demand for all means of communication, including fix phone, mobile phone and broadband rising affordability of the people from GDP per capita.
14. CONCLUSION (con’t)

- FDI has played a very important role in the development of the Lao’s telecommunication sector in Lao PDR. In the period from 1995 to 2014, the Government has formulated many policies to attract FDI to this sector.

- Today’s rapid development of information communication technology (ICT) has greatly contributed to the economic and social development of a country sharing Lao’s experience and expertise in ICT development with developing countries around the world.

- Based on the experiences from previous project, Lao’ ICT cooperation projects have continuous to grow in scale and a consecutive projects, “ICT Cooperation towards Co-prosperity (2015-2020) “with support from MPT of Lao PDR.
THANK YOU

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