Liberalization of Telecommunications in Lao PDR and Thailand: Challenges and Opportunities*

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Paper presented at the

Competitiveness of ASEAN Countries: Trade and Investment Issues, 8-9 January, 2009, at National Institute of Development Administration (NIDA), Bangkok, Thailand

*This paper presents results from a study supported by the National Telecommunications Commission, Thailand. The paper has been jointly written together with Dr. Colin Blackman, Dr. Simon Forge and Prof. Suphat Suphachlasai. The opinions of this paper are the views of the authors.
1 Objectives

- This presentation forms part of a larger project on a future framework for regulation for the future Thailand and Lao PDR
- The presentation is structured as follows:
  - Providing a brief synopsis of the most relevant conditions in the Thai and Lao markets that has a bearing on the next stage of a regulatory framework,
  - Analyse implications from the above context for the Thai and Lao regulatory frameworks
  - Summarise relevant trends in social, technical, regulatory and economic areas in Thailand and Lao PDR (this part of the presentation will be covered in view of time)
- The case of interest to follow because of its mix between uptake of new services and legacy conditions regarding institutional arrangements.
- What is the best – and possible – way forward?
2 Market structures

1. Objectives

2. Market structure, regulatory context and their features in Thailand and Lao
   - Main aspects of the Thai market – the move to liberalisation
   - Main aspects of the market in Lao

3. Key trends for the regulatory framework for Thailand and Lao

4. Implications for the future view of the Thai and Lao regulatory framework
Main aspects of the Thai market – the move to liberalisation

- The Thai market - a classic example of take-off and expansion following liberalisation and competition.
- Until 1992, services were exclusively the domain of two state-owned enterprises (SOEs) – TOT domestic and CAT, international gateway services.
- Dividing the market between these two SOEs seeded a first the phase of development.
- Early 1990s: recognize future industry growth requires large-scale infusion of private capital.
- Unique scheme to preserve the statutory monopoly of the two SOEs, while accommodating the private sector.
- 1992, TOT and CAT award concessions (not licenses) to private companies for network development and provide fixed line, mobile, satellite, paging and other communication services, under BTO (Built-Transfer-Operate) agreement.
- Under the BTO agreements, private concessionaires invest in infrastructure and then transfer legal ownership in the installed network to the state operator upon completion. In exchange, granted 25-30 years exclusive use of the network to operate services, make revenues and profits.
- An important part of the BTO schemes are access charges and revenue sharing.
The resulting market structure – the concessionaires

MOF and ICT*

TOT Concessionaries

CAT Concessionaires

*MOF – Ministry of Finance  
*ICT Information, Communication and Technology Ministry  
Source: DTAC
Initially, this worked!

Entry of the private sector in the early 1990’s drove rapid expansion in the Thai subscriber base for both the fixed and the cellular networks:

Fixed line and Cellular Telephone Subscribers 1990 – 2005

Source - company data [LIRNEasia, April 2007]
The rapid expansion in the Thai subscriber base

- FDI worked - several private overseas companies took up strategic stakes in concessions, directly or indirectly - Norway's Telenor, Hong Kong's Hutchison, France's Orange and the US's Verizon.

- Note that growth in fixed lines more or less stalled after 1996 - due to regulatory constraints - concessions granted a maximum limit on lines

- No new concessions were granted during the latter half of the 1990's, so rollout of the fixed line network ceased on reaching the limit allowed.

- Cellular mobile concessions had no such capacity restriction - so expanded

- Major surge in mobile subscriber base after 2000 driven by a price war, on entry of a third major player after a long period of tacit price collusion under a duopolistic market structure.

- Growth rate of mobile market peaked in 2001 and slowed after as the market approached saturation - 27 million subscribers in 2005, almost half the population of 67 million.

- Pre-paid services - crucial for boosting subscribers in lower income segment -
Situation has evolved to some dilemmas today

• Now reducing foreign investors - Orange and Verizon have divested

• Telenor and Hutchison find conditions difficult

• TOT and CAT continue to dominate the market, particularly in fixed-line sector

• Independent market players are concerned. Telecommunications legislation on private sector service suppliers caps foreign equity shares at 49%, but can have private Thai nominees

• Does current industry structure limits ability of concession holders to compete with concession providers, CAT and TOT?

• Privatisation going forward? - Thai State Owned Enterprises TOT and CAT were incorporated in 2003 - renamed TOT Corporation and CAT Telecommunications. Privatisation awaits government decision on when to merge the 2 SOEs?

• The final form of the market today is an expansion of different types of operators and their licensed functions -
The resulting market structure - Operators in the Thai market 2008

3 Fixed Line Service Providers

Bangkok: TOT, True Corporation
Outside Bangkok: TOT, TT&T

7 Mobile Network Operators (MNOs)

AIS, DTAC, True Move, Hutch, Thai Mobile, DPC (Digital Phone Company), TOT

2 International Carriers

CAT Telecom (9050 Int’l circuits)
TOT (3500 Int’l circuits)

18 Internet Service Providers (ISPs)

18 ISPs total, with 4 major providers: INET, Asia Infonet, CSL, KSC
The future market – some questions to examine

• In the future, the strong competition in the mobile market likely to continue - eg entry of new operators and development of 3G networks. However, to become a substantial player in the market in the long term, will new players such as Thai Mobile need a strategic partner from global telecoms operators, like its peers?

• Will the 49% foreign investments rule be enforced? Will competition in the Thai telecom market become limited if local only ownership control is effected?

• Conversion of concessions into operating licenses - progress? - Must be transparent and fair

• Do current forms of revenue sharing between telecoms SOEs and private concessionaires tend to undermine effective competition in the market?

• Do restrictions on the private concessionaires present major obstacles to establishment of a level playing field in the telecoms market? eg on pricing and network expansion.

• Need an administrative body of unquestionable integrity and impartiality? – Must be perceived to be so

• What should be the major targets for Thailand? More mobile? Fixed broadband? or?
The overall resulting situation in summary

- Thailand's telecom industry has gained much so far from private sector participation over a decade - investment & marketing/technical management

- Competition in the private sector has driven the mobile cellular boom, introducing the mass of Thai citizens, largely unserved till then by ANY service, to advanced connectivity for the first time.

- Fixed line roll out has been constrained by the regulatory conditions in the concessions, so in contrast to mobile, fixed line subscribers remain low in number.

- The utility of mobile, due to its ubiquity, has proven, as in all markets worldwide, that it becomes the communications media of choice as its performance, coverage and affordability improves, further driving rural rollout.

- On the main regulatory challenges: –
  - authority with responsibility for the regulator only
  - clear rules & guidelines on licensing - from the regulatory authority
  - transparent and participatory rule making procedure.
  - proper notification of proposed changes and responses to comments and queries of stakeholders, all being made available publicly.
The capital, Vientiane, is the most competitive market (i.e., least concentrated) with some 70% mobile teledensity and forms one half of the national market for mobile.

The rest of the country forms the other half, with about 8% mobile teledensity.

The major market components of the telecommunications industry are shown in the table in terms of services and their subscriber numbers for October 2007:

<table>
<thead>
<tr>
<th>SERVICE</th>
<th>Subscriber numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSTN (all digital switches)</td>
<td>145,857 lines</td>
</tr>
<tr>
<td>Mobile (GSM)</td>
<td>1,401,419 sub.</td>
</tr>
<tr>
<td>WLL (CDMA)</td>
<td>capacity 50,000 sub.</td>
</tr>
<tr>
<td>Internet:</td>
<td></td>
</tr>
<tr>
<td>- Dial-up: 40,800 sub.</td>
<td></td>
</tr>
<tr>
<td>- ADSL: ~2000 sub.</td>
<td></td>
</tr>
<tr>
<td>- IP Star: 200 sub.</td>
<td></td>
</tr>
<tr>
<td>- Leased line:33(64Kbps-2Mbps)</td>
<td></td>
</tr>
<tr>
<td>- HIL: 50 sub.</td>
<td></td>
</tr>
<tr>
<td>Intranet (Government)</td>
<td>to all ministries</td>
</tr>
<tr>
<td>Transmission backbone:</td>
<td></td>
</tr>
<tr>
<td>- Digital Microwave STM1-4</td>
<td></td>
</tr>
<tr>
<td>- Optical fiber (STM 4) 662 Mbps</td>
<td></td>
</tr>
<tr>
<td>- Satellite E/S standard A</td>
<td></td>
</tr>
<tr>
<td>Broadcasting:</td>
<td></td>
</tr>
<tr>
<td>CATV</td>
<td>100,00 subscribers (available in 16 provinces) - coaxial cable</td>
</tr>
<tr>
<td>TV</td>
<td>45 Stations, total 7 channels, Analogue System PAL-C</td>
</tr>
<tr>
<td>FM radio</td>
<td>29 stations</td>
</tr>
</tbody>
</table>

Source: Sith XAPHAKDY, DDG Post and Telecommunications Department, Ministry of Communication, Transport, Post and Construction, Lao PDR, Oct 2007
Main aspects of the market in Lao

Lao has five major operators, two of which are state owned enterprises (SOEs). Services offered by each operator:-

<table>
<thead>
<tr>
<th>Operator</th>
<th>LTC</th>
<th>ETL</th>
<th>LAT</th>
<th>MLL</th>
<th>SkyTel</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PSTN</strong></td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>WLL</strong></td>
<td>Y</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Y</td>
</tr>
<tr>
<td><strong>WiMAX</strong></td>
<td>Y (NS)</td>
<td>-</td>
<td>-</td>
<td>Y(NS)</td>
<td>Y(NS)</td>
</tr>
<tr>
<td><strong>GSM</strong></td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>-</td>
</tr>
<tr>
<td><strong>Internet</strong></td>
<td>Dial-up Leased Line</td>
<td>Dial-up Leased Line GPRS</td>
<td>-</td>
<td>GPRS</td>
<td>Leased Line</td>
</tr>
<tr>
<td><strong>Int’l Gateway</strong></td>
<td>Y</td>
<td>Y</td>
<td>-</td>
<td>N</td>
<td>Y</td>
</tr>
</tbody>
</table>

Source: Department of Post and Telecommunication, Ministry of Communications, Transports, Posts and Construction of Lao P.D.R.
Current ownership structure of the operators and market shares

- **ETL (SOE):** 100% Ministry of Finance
- **LAT (SOE):** 100% Ministry of Defence
- **LTC (JV):**
  - 51% Lao Telecom Company, incumbent operator
  - 49% Shin Corp. (reverts to govt. in 2021)
- **MLL (Private):**
  - 22% Golden Share to Lao Government
  - 78% Millicom
- **SkyTel (Private):**
  - 30% of SkyTel Golden Share to Lao Government
  - 70% held by SkyTel

Market share breakdown dominated by LTC, the incumbent, with over 50% of the total telecommunications market, offering services in every category, with SOE ETL second at around 25% by revenues.

Current situation in key market segments

**Progress so far and issues for the future**
- Lao has failed to meet its fixed network growth targets
- In strong contrast, the mobile market has achieved rapid growth
- Mobile effectively delivers voice access nationally
- Evident that mobile competition should be increased for lower prices and better quality.
- Internet access is far short of the national target
- Path to broadband Internet access is under study with various options, including 3G mobile, WLL, or WiMAX, etc.

**Fibre expansion**
- Aggressive programme - establish national information infrastructure on fibre optics
- 13 provinces already connected and operable; extension of backbone to all 18 provinces and 142 districts in progress

**International gateways**
- Infrastructure - FO trunk for international circuits - Bangkok, Hanoi, HK, plus satellite links
- FO trunk under-used? – pricing?
- International connectivity - “one gateway policy” in theory - in place but application unclear
Regulatory and market issues for the future are

- Lack of a commonly accepted shared vision for an ICT development strategy with priorities for the telecommunication infrastructure, multimedia platform development, application and content development in order to develop ICT utilisation by the population and also failure so far of the efforts to develop such a shared vision
- Lack of knowledge in the current regulatory framework, especially for convergence of mobile and fixed and also of media and telecommunications with Internet
- Comprehensive management and regulation of the ICT infrastructure lacking, previously under 3 different ministries responsible, firstly for telecommunication infrastructure and services, 2nd for IT and 3rd for broadcasting. Now process under way to establish single converged NRA
- Lack of telecommunication infrastructure and investment
- Ways forward to open markets to purely commercial entrants, to increase both investment and competition yet to be clarified
- Lack of affordability and availability of hardware and software due to low income, and unclear on benefits gained from ICT development, so incentives to invest and deploy unclear
- Uncertain readiness of society to accept ICT, because of a lack of skilled human resources, low ICT literacy, lack of local content
- How to increase the mobile competition in provinces - which will require the sharing of masts and implementation of national roaming across MNOs [S. Xaphakdy, Oct 2007].
- How to develop broadband access, given the low disposable incomes with low PC ownership and a largely rural population

Sources: Snith XAPHAKDY, DDG Post and Telecommunications Department, Ministry of Communication, Transport, Post and Construction, Lao PDR, Oct 2007 and others
1. Objectives

2. Market structure, regulatory context and their features in Thailand and Lao

3. Key trends for the regulatory framework for Thailand and Lao
   • Basic trends – social, population, economic
   • Trends in industrial development in Thailand and Lao – and the trends in needs for telecoms
   • Telecommunications market trends globally
   • Regulatory trends globally
   (for details see the paper)

4. Implications for the future view of the Thai and Lao regulatory framework
4. Implications

1. Objectives
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4. Implications for the future view of the Thai and Lao regulatory framework

• Implications for Thailand and Lao of the comparative policy studies in future telecommunications
• Future view for Thailand and Lao
Future view for Thailand and Lao

- Thailand and Lao are relatively late starters in installing and applying pro-competitive regulation in the telecommunications sector

- This late start presents an opportunity for “regulatory leap-frogging”:
  - Requires that each country resolve to draw on the experience of other countries
  - Implement international “best practice” regulatory principles

- A stable, predictable and transparent pro-competitive regulatory environment conducive to investment will enhance the ability to grasp opportunities for “technology leap-frogging” as well opportunities stemming from technological and market convergence.

- A first step is establishment of an independent regulatory body - in 2004 in Thailand, the NTC was formed

- Means the country has moved forward significantly and creates a platform for change

- Also, Lao PDR has moved towards an integrated NRA

- However:
  - Impediments to effective competition exist in Thailand and Lao
  - So far, NTC faces limitations in dealing with concessions already agreed between the state and the private operators that remain legally binding
Key measures are needed to develop the telecoms sector

Implications for moving forward with a regulatory framework are therefore:

- Further liberalisation of the markets, enabling full foreign participation & investment
- Specific regulatory measures to assure healthy competition, at both service, and wherever suitable, infrastructure level, via a well structured competition policy.
- Conversion of the current private operator concessions in Thailand into operating licences
- In Thailand, implementing a well-prepared plan for the SOE privatisations
  - Such a privatisation plan will require a stage of pre-privatisation market restructuring to ensure effective competition.
  - That the privileges of privatised SOEs (loan guarantees, exemption from competition law, etc) be withdrawn, to assure a level playing field in competition between privatised SOEs and rest of private sector
- In Lao, transformation to a competitive market.
  - Requires comprehensive reform of ownership by the state. For both Thailand and Lao, it means a carefully managed transition to the private sector to encourage both competition and FDI. This well-prepared process should lead to full privatisation of SOEs, in both states, with a controlled transition that benefits all ordinary consumers and not just vested interests, as has happened elsewhere.
- The establishment of more and wider responsibilities and powers for a central regulatory national body, independent from government ministries, in each country. These bodies’ management responsibilities could include a merger with any separate media regulation body, as has been done successfully in many countries.
- Co-ordinated activities between the 2 NRAs to build the common regulatory framework
Co-ordinated activities between the 2 NRAs to build a common regulatory framework

• Thai and Lao administrations jointly consider a common approach in key areas with co-ordinated activities between the 2 NRAs to build the common regulatory framework.

• Work on specific items for the framework - eg - spectrum, broadband roll-out, Internet access, etc, also on wider policies areas, eg - universal service, assuring fair competitive markets, etc.

Key areas include:

• Spectrum allocation - need more flexible use of spectrum - examine bigger role for markets in allocations, usages and users. Regulatory framework should aim at fast, flexible access to spectrum, including unused and underused spectrum with:
  • Spectrum secondary trading and liberalisation - careful design of auctions
  • Use of a commons in the future
  • Refarming and ensuring public services (eg military) exploit allocated spectrum as efficiently as possible.

• Service & technology - neutral policy (for mobile or other telecommunications media - eg fibre optics for IPTV) to facilitate market entry of new entrants into telecommunications markets and promote competition because:
  • In Thailand and Lao, a licence to use a frequency cannot be transferred without regulator approval while sharing of licensed frequencies is prohibited unless specifically approved.
Co-ordinated activities between the 2 NRAs to build a common regulatory framework

• Measures on competition, to assure a level playing field for all players:-
  • Particularly needed in early stages of competition if market players distorting competition - policy and regulation should address promptly
  • Pro-competitive regulatory rules needed immediately, applied vigorously:-
    • For Lao - the market and regulatory experience used in Thailand may form the basis of a way forward.
    • Would also form a common telecoms market model, useful if it is considered that both countries might develop a competitive larger telecoms market together.
    • For a common telecommunications market and specifically using open roaming for mobile, a larger market for both countries could provide enhanced competition,
    • Creates conditions for increased infrastructure investment as larger market
    • Prices could be driven down further also - especially necessary for widespread take-up among the major portion of (unserved) people in each country, the rural poor
    • Following establishment of central independent national regulating agencies, the above market model could in the future imply a common regulatory framework and shared operational procedures across the two states.
    • Such a framework would be aimed at enabling higher investment, with enhanced operations, coverage and roaming capabilities, also with best uses of regulatory staff and resources, to form a common economic area.
  • Consideration of common policies on separation of infrastructure and services for fixed line networks including broadband fibre optics, as well as entry of MVNOs in mobile services
What is the key implication?

• Agreements on a set of policy items implies recognition of the importance of telecommunications in driving the economy, especially the key place of mobile.

• Otherwise Lao and Thailand risk setting back their economic advance, which is increasingly dependent on novel telecommunications technologies.

• Governments and regulators need to confer and decide on the common framework

• In choosing policy options, the question that always must answered is:-

Which regulatory choices will maximise economic growth?

To answer this question, further studies are encouraged

Thank you so much for your attention!
ANNEX extra slides on point 3

1. Objectives

2. Market structure, regulatory context and their features in Thailand and Lao

3. Key trends for the regulatory framework for Thailand and Lao
   
   - Basic trends – social, population, economic
   - Trends in industrial development in Thailand and Lao – and the trends in needs for telecoms
   - Telecommunications market trends globally
   - Regulatory trends globally

   (for details see the paper)

4. Implications for the future view of the Thai and Lao regulatory framework
Basic trends – social, population, economic

Social trends
• Both Lao and Thai society have changed rapidly - impacted by globalisation & communications yet maintaining cultural context
• Thai society - formation of a new strata of educated society based on the trade, manufacture and services sector with agricultural economy/society as a major element
• Large rural social environment awakening to new technology, lifestyles and basic changes, eg greater gender equality, spread by communications and media access
• Lao society - same path but more slowly, from less developed economic base.
• Globally - ability to participate in a global society and economy is having strong effects on individuals, families and society - awareness of use of technology ends local isolation
• Wider educated /better informed via global information access, especially on - careers, aspirations, types of work, lifestyles through Internet and e-communications and media
• Tends to change views of self - on roles, possibilities, social contexts and freedoms and so creates new social forces as wider aspirations modulate current cultural models

Population trends
• Both countries have the characteristic demography of a youth population today
• With better health throughout life, increased longevity will tend to build an aging population, becoming more dominant in later decades as birth rates are tending to fall
• Increasing demand for two major social and economic support services – extending work lives and providing care and support for an aging population at low cost.
Basic trends – social, population, economic

**Economic trends**

- Generally Thailand and Lao are both benefiting from accelerating FDI and the rise of the Asian community generally as a centre for exports of both commodities and manufactured products.

- Global capital and liquidity flows have driven the Thai economy, while rising commodity prices, specifically for rice for which Thailand has been a major world exporter, have benefited the rural community, although inflation has increased.

- With GDP expected to grow by 5% in Thailand [Economist 2008], and even more in Lao, the Thai and Lao economies seem to continuing to expand despite global slowdown, the credit crisis and access to investment as well as food and oil price inflation.

- On the question of any politically uncertain situations, which might have repercussions on the economy and foreign investment, little affect seems to have been perceived in reality.

- Generally the outlook economically would appear to require build up of the infrastructure for the next stage of development, in both countries.

- However the high levels of oil prices globally can only drive inflation, weaken these economies and so perhaps reduce funds available for infrastructure build.

- Thus it may be judicious to consider use of telecommunications wherever possible in ways that may act as a substitute for travel, and a physical road transport infrastructure. This process, while it seeming to be a privilege only of the developed world, may have significance at the current stage of development of Thailand and Lao.
Trends in Industrial development in Thailand and Lao – and the trends in needs for telecoms

- Growth in industrial and service sectors is driving ICT take-up and thus the growth in telecommunications traffic and demand for e-communications services in both Thailand and Lao as the business communities develop - in Thailand some 33 million citizens have mobile in a country of 67 million

- ICT education is propelling this to some extent, but possibly greater awareness of ICT’s in the mass of the population is a barrier to faster take-up. This is a general trend in Asia, and was specifically addressed in Korea a decade ago, with ICT education programmes to drive ICT take-up and usage in industry by first training the workforce.

- Trend to foreign participation in telecommunications enterprises proved a useful strategy in Thailand, for reasons of investment capital & intellectual capital for operations –should perhaps be repeated in Lao

- Only gradual trend in take-up of broadband and Internet access, especially Lao - real reasons behind the trend may be due to pricing as well as access availability (eg in Lao international gateways have limited capacity)

- Globally, wireless broadband has grown quickly in developing nations, perhaps because use in the developed world is more challenged by existing infrastructure and DSL.

- Need a commonly accepted shared vision for an ICT development strategy for Lao and Thailand, with priorities for the telecommunication sector.
Telecommunications market trends globally

• Process begun two decades ago - market liberalisation for competition in both services and infrastructures - still not stopped - still some way to go

• Major consequence – the whole mobile industry - has gained dominant place in society and the economy and thus in regulatory framing. Mobile is centre of telecoms industry growth.

• Pace of change is highly variable across the globe – vibrant markets tend to those where competition is highest – 5 or 6 mobile operators, 2 or more fixed line operators and service competition from multiple broadband providers

• In such markets there is a trend towards active and intense competition regulation, to assure a level playing field - sometimes as part of telecoms regulation

• Trend for separate infrastructures and their service providers being challenged by a new direction of various types of convergence, merging:-
  – mobile and fixed line offerings; the ideal is one customer bill for both
  – media and telecoms. - entry of telcos into multi-media content markets, and CATV operators into telecoms.- more in the USA & EU with ‘triple’ and quadruple’ plays,

• As mobile access data rates increase from GPRS to broadband, while prices drop, Japanese model becoming a global trend - most popular Internet access device - mobile phone, as in DoCoMo’s iMode strategy

• Merging of Internet and mobile services in the most popular piece of consumer technology ever invented perhaps – the 3 billion mobile phones expected to be in service by 2009.
Regulatory trends globally

- Mobile telecoms is replacing fixed line for the mass of subscribers – this makes spectrum liberalisation, and forms of spectrum management / allocation far more important than even 5 years ago - top of the regulatory agenda many countries

- Allocation mechanisms expanding - move away from managed allocation (or command and control) regimes towards multiple forms - markets for spectrum, with auctions and secondary trading, open to any operator, as well as collective use and unlicensed bands.

- Move to neutrality in services and technologies

- Refarming and releasing spectrum from previous users pursued on two fronts:
  - release of spectrum from the switchover from analogue to digital TV (the ‘Digital Dividend’)
  - release spectrum granted to government /military - take a financially efficient approach to use of spectrum with administered incentive pricing (AIP) and sales in market

- More consideration of licence-exempt bands, as WiFi points the ways for broadband and WiMax – useful in rural areas for wireless access via mobile and fixed radio links to the Internet, to drive future radio technologies and new uses for spectrum

- Trends to media /telecoms convergence driving fusion of NRAs for media broadcast, CATV and radio with telecommunications - one NRA implements both media and telecoms legislation
Prepaid services drive mobile subscriber take-up from 2001 on

Source - company data [LIRNEasia, April 2007]
Current situation in key regulatory areas and network rollout

ICT Policy
• Telecommunications has a priority 2nd to roads, water and electrical power
• Aggressive ICT policy with political momentum matched by infrastructure rollout
• Important to clarify some parts of policy, to assure investors

Universal Service
• Universal access is the national goal in terms of affordable access to full range of traditional and emerging ICT services.
• Lao has established a Telecom Development Fund (TDF) and the concept of Multi-purpose Community Centers for ICT services access.
• All licensed and authorised ICT operators & Service Providers contribute to TDF financially or by direct investment and construction of facilities in designated under-served areas, or both

Spectrum Policy
• Policy is to ensure widest range of services, while assuring efficient use
• Lao coordinates with neighbouring countries on spectrum usages and coverage
• All future spectrum licenses to be technology neutral
• Basis for spectrum usage is that users of spectrum shall be charged fees.
• Where spectrum is licensed but not used, then it is reclaimed and all or part of the license revoked.
• Special consideration given to the types of use in awarding spectrum.