LIRNEasia
Learning Initiatives on Reforms for Network Economies

Mid-cycle Research Review & Dissemination Planning Meeting Report

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[1] The helpful contributions of Malathy Knight-John in the form of notes on the proceedings are gratefully acknowledged

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1.0 Background

The overall objective of the 2006-07 research program of LIRNE*asia* is the creation of an evidence-based research platform and capacity for ICT policy and regulation reforms conducive to inclusive growth in the context of a more integrated world economy. As a part of this objective, LIRNEasia commenced two multi-country studies in June 2006, the *Six-country study on measuring telecom sector and regulatory performance (Six Country Study, Indicator)* and *Teleuse on a Shoestring:2* (*Shoestrings2*)

The *Six-country study* aims to develop sustainable supply- and demand-side data collection procedures with the participation of national data collection authorities (principally national regulatory authorities in telecom) in South Asia and South East Asia, with the potential to extend the procedures and practices across all of emerging Asia. As a part of this activity, a draft Indicators Manual with concepts, definitions and methodologies relevant for developing Asia is being developed, along with and accompanying report to address the more abstract conceptual framework within which the manual is embedded. The output from the indicators work will be applied in three South Asian countries (India, Pakistan and Sri Lanka) and three South East Asian countries (Indonesia, Philippines and Thailand) to improve both the indicators manual and report. In addition, six country reports will be compiled which will include assessments of the regulatory performance will be assessed through a telecom regulatory environment (TRE) scorecard along side analytical descriptions of the reforms that have been implemented in the respective countries. Supply-side data will also be collected to assess sector performance on this backdrop. More information is contained in the following sections. This study is integrally connected[2] with the Shoestrings2 research, as depicted in Figure 1.

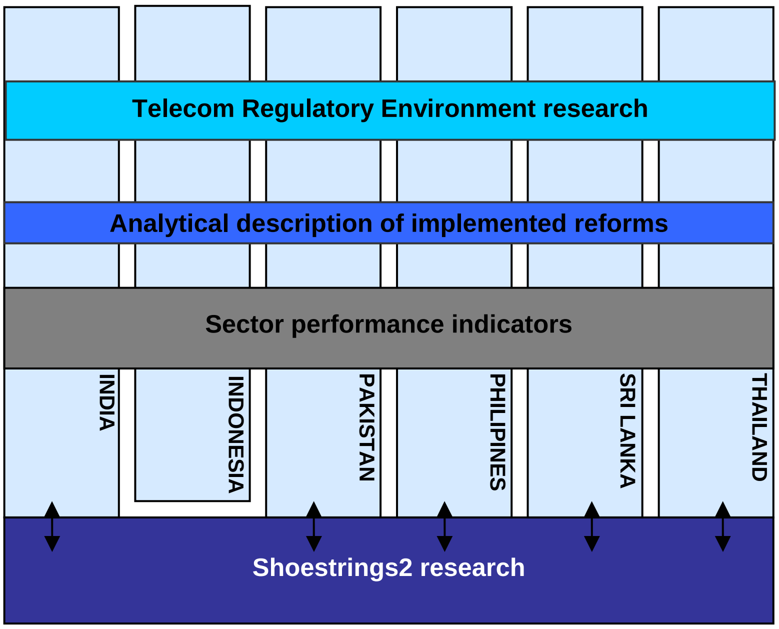

Figure 1: Integration of Six Country Study and Shoestrings2 research

[2] In five countries only; the Shoestrings2 research was not conducted in Indonesia.

The Shoestrings2 research looks at the demand side of ICT access, focusing on the 'Bottom of the Pyramid.'[3] The study seeks to provide understanding of how the poor (vis-à-vis non-poor) benefit from access to telecoms, through quantitative and qualitative studies. The study seeks to understand how access patterns differ in five Asian countries: India, Pakistan, Philippines, Sri Lanka & Thailand. The research looks at the use of telephones, what kind of phones people use, why they use them, what benefits they obtain from them and how much they spend on telecom.

The study comprises a quantitative as well as qualitative component. The quantitative component included 8,622 face-to-face interviews, with the placement of 'phone diaries' for two weeks with half of the sample to record daily phone use. The qualitative component consisted of six extended group discussions in each country, to explore user, as well as non-user behavior and attitudes in depth. The study also looked at a sample of high income users for valid comparison. The field work was conducted in July and August 2006, by AC Nielsen affiliates in the respective countries, coordinated by ACNielsen Sri Lanka.

The demand-side data collected from this project will be used together with supply-side data collected under the 6CI study, as well as regulatory environment assessments and analyses of the recent reforms in the sector in the respective countries,4 to measure ICT sector and regulatory performance.

2.0 Meeting objectives

The mid-cycle research review meeting brought together LIRNEasia researchers from five countries, media experts, research partners from AC Nielsen and external observers from the ICT Agency of Sri Lanka for five intensive days of presentations, evaluation, discussion and planning. The objectives of the meeting were the following:

i. Ensure that the Six Country Study is on track and make mid-course corrections if necessary.
ii. Identify the common themes of the two multi-country papers that will be written and identify the authors.
iii. Provide substantive input for indicators manual and conceptual paper (and vice versa).
iv. Develop dissemination plan for 2006-07 research.
v. Improve researchers' ability to present research results to lay audiences.
vi. Obtain input for analysis of Shoestrings2 research data.
vii. Identify writers for Shoestrings2 articles.
viii. Strengthen the virtual organization.

3.0 Overviews of the state of research

3.1 Six Country Indicators Study

[3] Prahalad, C.K. (2004). The fortune at the bottom of the pyramid: Eradicating poverty through profit. Upper Saddle River, New Jersey: Wharton School Publishing.

[4] With the exception of Indonesia which will not be covered by the Shoestrings project

Harsha De Silva, LIRNEasia's Lead Economist and the consultant economist for both the Six Country Indicators (6CI) project and the Shoestrings2 study provided a conceptual overview of both projects to highlight their objectives and how they were connected.

The 6CI project covers India, Pakistan, Sri Lanka, Philippines, Indonesia and Thailand and is composed of three components:

a) Analytical description of the reforms in the country
Provides the context for interpreting the TRE survey findings, sector performance indicators and results of the shoestring research; it is being conducted by desk research and some interviews with key stakeholders.

b) Supply-side Indicators
A list of core set of standardized statistics collected from the six countries to analyze and compare within and across countries. They provide a picture of sector performance and how regulatory reforms have faired.

LIRNEasia's March 2006 indicators workshop provided the basic framework for developing supply-side sector performance indicators; ICT products, infrastructure, supply, demand etc. which would lead to the development of the Indicators Manual to be presented to ASEAN regulators for adoption.

c) TRE
The Telecom Regulatory Environment (TRE) survey instrument has been developed by LIRNEasia and has already been used in a number of countries. The TRE analyzes perceptions of the role of the regulator on six parameters

- market entry
- access to scarce resources [spectrum]
- interconnection
- tariff regulation
- regulation of anti competitive practices
- universal service

The 6CI researchers are expected to have a survey panel of stakeholders of at least 50 respondents.

LIRNEasia has signed onto the Digital Opportunity Index (DOI),[5] and hence LIRNEasia's work will be anchored on the DOI.

Divakar Goswami, Director of Organizational Development and Projects at LIRNEasia and the project manager of the 6CI study provided the current status of the project and suggested some mid-course corrections.

The 6CI project is on track. The Terms of Reference (ToRs) were developed in consultation with the researchers and contracts have been signed based on the finalized ToRs. Inception reports were submitted by all the researchers shortly after they received their contract and have been approved. The collection of supply-side data is at an advanced stage as was illustrated by the country presentations made by the researchers at the Digital Opportunity Forum organized by KADO and the ITU in Seoul in August 2006. The TRE survey has been completed in one country and is ongoing in 5 others.

5 See http://www.itu.int/osg/spu/statistics/DOI/index.phtml

Interim draft reports are due in early November when the Six Country researchers are also scheduled to make their presentations at LIRNEasia's colloquium (see Section 4.7.2). The final draft reports are due during the last week of November and completed final papers are due in December of 2006.

A mid-course correction was suggested in terms of re-evaluating the role of the 2nd seat researcher and identifying any barriers to their effective participation. After consultation with the Six Country researchers it was agreed that the travel component of the 2nd seat researcher may be re-allocated to support other activities in the project since 2nd seat participation was effectively obtained through virtual means using the Internet and other tools.

3.2 Indicators Manual

Helani Galpaya, Director of Strategic Development at LIRNEasia and leading the development of the Indicators Manual, reconceptualized the role of the Indicators Manual in her presentation and proposed a bottoms-up approach in the development of the manual.

It is intended that the draft Indicators Manual will be presented to the South-East Asian regulators. It will become the standard that the SAARC+1 & ASEAN countries adopt in the future. There is a need to agree on which indicators should be collected, based on 6CI study researcher input as well as the Hong Kong indicator methodology.

3.3 Teleuse on a Shoestring2

The Shoestrings2 study is on schedule. The field work was completed in August 2006, by ACNielsen affiliates in the respective countries. Data analysis is underway, and several conference papers and presentations are lined up for October, November and December.

Researchers from the five countries will explore the impact of telecom reforms on the bottom of pyramid in their reports. This is how 6CI and the Shoestrings2 project will be connected.

The current status of the Shoestrings2 project is outlined below:

Status and timeline	
RFP for fieldwork	Done (May 2006)
Evaluation and selection of partner	Done (June 2006)
Finalize study design and instruments	Done (June 2006)
Fieldwork	Done (July-August 2006)
Data entry and data set ready	Done (July-September 2006)
Mid-cycle research review 1-cut analysis	12 September 2006
Analysis along themes	starting 12 September 2006
Preparation of papers	starting 12 September 2006
Dissemination	starting October 31 2006

4.0 Six Country Indicators Study

4.1 INDONESIA country report & discussion

Divakar Goswami

The researcher started out by providing a timeline of the significant developments in the telecom sector in Indonesia to highlight the halting reform process followed by the country. Reforms in Indonesia came in two waves; the first wave was in the early 1990s when private participation was allowed which was followed by the partial privatization of the incumbents. The second wave of reforms were triggered by the Asian Financial crisis of 1997 and the government in its endeavor to attract foreign investment into the sector passed the Telecom law of 1999 that laid the groundwork for a regulatory body, ended the exclusivity of the two incumbents on paper and provided the licensing framework that is currently in use. The researcher argued that a third wave of telecom reforms is currently underway in Indonesia.

The researcher presented sector performance time series data for fixed wireline, fixed wireless access, cellular mobile and Internet. When the growth charts are overlaid it becomes evident that sectors where competition has been introduced has witnessed spectacular growth like for mobile and fixed wireless access. In the fixed sector which has seen no competition, growth has been stagnant and this has also affected the development of the Internet sector that relies heavily on fixed infrastructure like leased lines and access networks to the home.

When compared with the ASEAN countries, Indonesia's sector performance is better than Cambodia, Laos and Vietnam but significantly poorer than the Philippines, Thailand, Malaysia and Singapore. This holds also for affordability of mobile services which is more affordable in those countries that have higher penetration than Indonesia. Average Internet tariffs for 20 hours of use are USD$22 and consists nearly one fourth of average gross national monthly income.

Average Revenue Per User (ARPU) have been falling for both mobile and fixed wireless service. ARPUs for mobile postpaid are converging around USD$30 per month and prepaid ARPUs are significantly lower at USD$7, though still higher than India where it is hovering around USD$5 and operators are still profitable.

EBIDTA margins are around 62.5 percent for the three biggest mobile operators although it is as low as 6 percent for the competitive FWA provider.

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The researcher then presented initial findings from the TRE survey (20 respondents) for Indonesia's regulatory performance which was overall low (2.6 out of possible score of 5) and there was little to distinguish the TRE results for the fixed and mobile sector.

4.2 INDIA country report & discussion

Payal Malik

The researcher started out by providing an overview of industry liberalization and regulation in India that went through three distinct periods:

- In 1994-1998 period, TRAI, the regulatory body was established and licenses and competition were introduced for mobile telephony.

- In 1999-2002 period when a new telecom policy was introduced, entry of more operators for wireless services, free competition was introduced for fixed wireline, long distance and international service was opened to competition etc.
- In 2003-2005 period when Unified License Regime was introduced to create a level playing field, broadband policy was announced, foreign equity participation increased to 74 percent.

The link between policy encouraging competition, reduction of tariffs, greater affordability and mobile subscriber growth was clearly demonstrated in the Indian case. However, the lack of coverage in rural areas has prevented mobile growth from taking place outside of urban areas.

The license regime determines market structure. Regulator has to take this as given. For example, TRAI can't decide the number of players; make decisions on mergers and acquisitions since DoT determines shareholding pattern.

Even in the presence of a dominant public sector incumbent both in the fixed and wireless sector and the attended problems associated with implementing regulatory incentives , competition has been the key driver of growth.

However, the researcher argues that with lower public sector ownership, growth may have been much more impressive. Telecom growth has not been inclusive: high teledensities (more than 10%) are only concentrated in a few states (Gujarat, Punjab & Karnataka, Himachal and Kerala). There is also a rural and urban divide where average Urban teledensity is 32.8 percent and Rural teledensity is 1.98 percent.

The Universal Service Obligation (USO) program which was supposed to help bridge the rural-urban divide has failed to do so because the USO policies have been geared more towards trying to protect the interest of the incumbents rather than extending network rollout in unserved areas.

The 'success' of Indian telecom sector has been primarily been limited to lowering of tariffs and increasing access to the lower income households in the urban areas where the operators have their network, But a restrictive licensing regime and unresolved issues of infrastructure sharing have not resulted in the replication of the urban competitive model in the rural areas.

The researcher also presented some preliminary findings from the TRE research. Interestingly, the TRE research vindicated the analytical description provided by the researcher earlier, that the regulatory success is limited to tariff regulation. The respondents too indicated that the USO environment and regulation of anticompetitive practices have been areas of concern and perhaps are the most important factors explaining the digital divide of India. So while, Tariff regulation had a high score of 3.9, USO had a poor score of 2.2.

4.3 SRI LANKA country report & discussion-

Malathy Knight-John

The researcher started out by listing key reforms and regulatory events in Sri Lanka starting from 1980 with the bifurcation of the post from telecom service provision to the issuing of 3G license in 2006. The researcher presented the findings from the TRE survey, the only country where the survey has been completed. The size of the panel surveyed for the TRE was 135 and total response rate of 75 per cent was achieved. According to the TRE results, regulatory performance was better for the mobile sector than the fixed sector. The scores for mobile sector ranged approximately from 3 to 2.5 out of a possible score of 5. Scores for the fixed sector ranged from 2.7 to 2.4.

Subscriber growth graphs were plotted with significant policy changes indicated to explain the variations in the growth curve. Supply-side indicators were presented by province.

4.4 PHILIPPINES country report & discussion

Lorraine Carlos-Salazar

The researcher started out by providing an overview of telecom operators in the Philippines and the services that they currently provide. In the pre-reform period, PLDT was the 'virtual' private monopoly. The Philippines followed the US model with smaller local operators (baby bells), but PLDT controlled national backbone and used high interconnection charges and its dominance to keep competitors at bay.

The reform process that started in 1993 has resulted in a fairly vibrant telecom sector with 11 international gateway operators, seven mobile phone operators, 14 inter-carrier, 74 local exchange service providers. However, the *incumbent and its mobile subsidiary (SMART) still dominate [SMART- #1 mobile provider bought into PLDT in 1998, so they have effectively merged].* Despite this, the mobile sector is highly competitive with two strong competitors to Smart.

Currently, interconnection is mandated but there is no template for agreement; interconnection is still negotiated between operators with asymmetric market power.
The regulator in the process of introducing regulations on an interconnection template, on defining significant market power and on network unbundling.

The researcher then presented a list of indicators for which data is collected by the National Regulatory Authority (NRA) and a list of relevant ICT indicators collected by the National Statistical Organization (NSO). For the current study, the researcher will also rely on annual reports and data from the ITU.

Of the 11 indicators that make up the composite Digital Opportunity Index (DOI), data for eight indicators are collected in the Philippines. Data is not available for mobile Internet subscribers, broadband subscribers, and broadband mobile subscribers.

The researcher then presented time series data on a number of indicators. Mobile growth in the Philippines is high although fixed line growth is not only stagnant—rather it is declining! Teledensity for various regions in Philippines was also presented. The researcher noted that fixed lines were concentrated in urban areas (72 percent) compared to rural areas (28 percent). Mobile teledensity is about 40. SMS was introduced in 1995 but it only took off after 1999 when the prepaid method was introduced.

The USO policy requires new entrants to put in fixed lines in certain service areas. Mobile phone companies needed to install 500,000 lines while international gateway operators needed to install 300,000 lines within 5 years, starting in 1995. For every 10 urban lines, operators need to install one rural line. However, this scheme (service area scheme) was criticized as a failure as most of the installed fixed lines are not subscribed to and are lying idle. Factors that led to this included the advent of the 1997 financial crisis and the shift to mobile use.

The researcher then presented the preliminary results from the TRE survey (46 respondents). Scores for regulatory performance for the fixed sector ranged from 3.1 for market entry to 2.2 for USO out of a total score of 5. Scores for the mobile sector were higher at 3.5 for Market entry and 2.5 at the lower end for USO. Most responses to TRE survey indicate neutral-satisfied opinions of the TRE. USO responses are not as happy on fixed and the regulator is not perceived as independent.

4.5 PAKISTAN country report & discussion

Joseph Wilson

The researcher started his presentation by showing teledensity growth of mobile and fixed sector in Pakistan. The total tele-density of fixed and mobile telecom services has shown a phenomenal 14% increase from the year 2005 to 2006 and is showing signs of steady growth resting at 27.76% for mid-term of 2006. This sharp rise is endowed to regulatory reforms encouraging level playing field for new investors, encouraging demand in consumers.

Total fixed density of 4.09% has increased by 0.5% from the year 2005 to 2006. This rise comprises of Wireless Local Loop density which has risen to 0.72% over a year, gaining steady momentum. WLL density is expected to grow in future, especially once rural areas are exposed to its benefits.

The researcher then presented regional breakdowns. Sindh has the highest fixed teledensity at 4.08% fixed, while Balochistan has the lowest teledensity at 1.87%. The difference between provinces, according to the researcher, is a direct consequence of geographic distribution of population. For mobile teledensity the story is the same. Sindh stands taller at 11.4% with the highest cellular mobile penetration in 2005, while Balochistan remains the lowest with 3.4% penetration. Again much of the difference is largely due to population distribution and demand for services.

The graph on cellular penetration shows a sharp rise by 7 per cent in the year 2004-05 in which deregulatory policy was announced that attracted foreign investment in the sector.

When comparing cellular tariffs over time, the researcher found that they have dropped to 2.69% from 8.97% of per capita income last year. This trend is attributed to rise in per capital income ($847, Economic Survey of Pakistan 2006) and competition among cellular companies. The prepaid tariffs have also dropped to a mere $1.66 in 2006, which again is a result of competition among cellular companies and PTA's announcement of reduction in tariffs.

Internet Penetration has gradually risen to 4.65% over a span of five years (2000 – 05). Internet access tariff has dropped as the per capita income has risen gradually over the years, along with government's effective involvement to proliferate the use of telecom related services.

The researcher then presented preliminary findings from the TRE survey. The TRE Survey had been disseminated in Pakistan among a varied pool of informed professionals. Only 24% of the respondents have contributed as yet. However, so far Mobile Sector has received positive feedback while fixed sector only shows signs of encouragement in market entry dimension. This is due to the entrance of new companies in the WLL services. The regulatory performance for the mobile sector is high for market entry (3.9).

Post-deregulation there has been large amounts of foreign investment in the telecom sector, contributing to 54.11% of the total FDI in Pakistan in 2005-06.

4.6 THAILAND country report & discussion

Deunden Nikomborirak

The researcher started the presentation by outlining significant policy developments in Thailand’s telecom sector reform. Before 1992 Telecom market was dominated by 2 statutory state owned monopolies: TOT (domestic voice services) and CAT (overseas voice services). In 1992, private participation was introduced through BTO concessions. Private participation via BTO concessions didn’t allow private entities to own the asset but granted them the right to operate for 35 years.

In 2000, law was passed to abolish statutory monopolies and to set up independent regulatory body for telecom and broadcast. In 2001, Telecom Law was promulgated although foreign equity share restricted at 49 percent. In 2005, the first two licenses were issued to CAT and TOT. Private operators TOT & CAT do not have licenses to operate, they are only subcontractors.

Before 2004 , *de jure* regulator was the the Ministry of Transport and Communications and the Cabinet, however the *de facto* regulator was TOT and CAT, who exercise their regulatory power through terms & conditions stipulated in telecom concessions. TOT was effectively acting as the regulator, approving tariffs of the private concessionaires. It was only in 2004 that the regulatory body, the National Telecommunications Commission was established.

The researcher then presented supply side indicator data on sector performance. Cellular growth has boomed since 2002, although the market structure is oligopolistic and has four mobile operators. Fixed line growth has been sluggish and the market structure is a duopolistic. According to the researcher, current market structure has limited number of players, but competition remains healthy indicated by falling prices. Internet access remains relatively expensive due to limited international capacity.

The fixed line market is not growing very fast as there has been no new concessions to install new fixed lines for the last decade. Fixed line did not improve rural access to voice communication as many lines were installed in condominium blocks rather than in remote places in the absence of a n effective universal service rollout obligations. As a result, there are many unused lines in condominium blocks following the property market bust in 1997. The researcher also highlighted the digital divide between Greater Bangkok & the rest of the country in fixed lines. In Greater Bangkok, fixed teledensity is falling, but population is also growing (not giving up fixed lines). Mobile ownership is on the rise in all areas of the country. Internet penetration is growing in all regions, but much higher in Greater Bangkok. The Internet divide is not closing because of the fixed line divide. In the researchers view, given limited availability of infrastructure and high prices of the internet, shared and public access can help closes the gap.

Current mobile penetration is 36.3 percent, fixed line is at 10.1 percent and Internet penetration is at 11.9 percent (a lot of mobile Internet users). Often people in Thailand have two mobile connections – one for home, one for office; mobile is cheap enough to enable this.

Both fixed and mobile prices are relatively affordable; as a percentage of average monthly expenditure, fixed line represent 0.92 percent and mobile prices represent 2.8 percent of monthly expenditures. However, Internet prices are expensive since they constitute 10 percent of average monthly expenditure.

The researcher then presented the preliminary results from the TRE survey (20 respondents) that indicated overall low scores for the regulatory performance. Regulatory performance in the fixed sector was higher than in the mobile sector. Fixed sector scores ranged from a high of 2.9 for interconnection to a low of 1.8 for market entry. For the mobile sector, scores ranged from a high of 2 for access to scarce resources to a low of 1.5 for interconnection.

The following were some of the comments made in the TRE survey form:

- Concession conversion is required to ensure fair competition. NTC should solve this problem.
- NTC should have a safety net in order to protect existing operators who are subject to the terms and conditions of the concession to compete with new comers.
- NTC should announce its telecom policy direction and its policy priority to the public, and ensure a fair interconnection and licensing regime.

4.7 Next Steps:

4.7.1 Themes for two cross-cutting papers

A brain-storming session was held to generate a number of cross-cutting themes from the Six Country Indicators study and the Shoestrings2 study. From the various themes generated below, two will be selected for developing thematic multi-country papers. Consensus has been formed around theme number 1 (Principal drivers of growth) and the second theme is still being finalized. Although two multi-country thematic papers have been committed to IDRC, it is possible that more than two reports may be written. The idea of a demand-side multi-country thematic paper as the second paper was discussed.

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Themes		
Proposed paper	**Comments**	**Responsibility**
1. Principal drivers of Growth o Comparative analysis of the factors (primarily regulatory decisions but may also include exogenous factors) driving growth in the telecom sector in the six countries. o Trend lines annotated with significant reforms (as well as other impacting factors); each country starting from 'year 1,' i.e. when major telecom reforms began.	**Main SUPPLY SIDE multi-country thematic paper (for IDRC)**	Lead author not identified yet, however all 6CI study researchers will contribute
2. Price (e.g. India story)	Draw from Shoestrings	
3. Market entry (e.g. Pakistan vs. Thailand)	Draw from Shoestrings	

4. Interconnection (e.g. Thailand outlier?)	Draw from Shoestrings	
5. Market share concepts - look at conventional reporting methodology vs. revenues, traffic data (minutes) etc.	methodology	
6. Comparison of TRE across countries (each country should do this) / Perceptions on regulations	Bi-country, e.g., India vs. Pakistan	
7. USO policies		
8. Basket methodology techniques	methodology	
9. Investment		
10. Competition		
11. Relationship between regulatory design and performance i. introduction ii. indicators/TRE comments & results iii. legislative overview a. substantive b. institutional design iv. link Sections (ii) & (iii) v. lessons learnt	**Multi-country**	Joseph; Payal (section on legal framework)?

Responsibilities for the papers (if they are to be developed) will be assigned once the project budget has been reviewed.

4.7.2 Colloquia and final reports

Interim draft reports are due in early November when the Six Country researchers are also scheduled to make their presentations at LIRNEasia's colloquium. The final draft reports are due during the last week of November and completed final papers are due in December of 2006.

The following is the colloquium schedule agreed upon by the researchers:

Colloquium Schedule for 6CI study	
Joseph (Pakistan study)	Oct 26
Divakar (Indonesia study)	Nov 9
Malathy (Sri Lanka study)	Nov 13
Lorraine (Philippines study)	Nov 16
Payal (India study)	Nov 23
Deuden (Thailand study)	Nov 30

As part of the ongoing efforts to make LIRNEasia into an effective virtual organization, it was proposed that colloquium presentations would be made using teleconferencing/skype so that researchers located outside of Sri Lanka can participate virtually in the proceedings. It was decided that incentives would be given to the researchers to provide high quality feedback to research reports by their colleagues.

5.0 Indicator Manual

LIRNE*asia* researchers collectively discussed and decided upon a set of core indicators. The goal was to arrive at a list of indicators that will enable a user of the data to gain broad and deep insight into the telecom sector's performance within each country (be it from a regulatory, investment, consumer or other point of view). The goal of the 6 country approach (of reporting against the indicators) is of course to have a comparable data-set for the countries (to avoid "comparing apples to oranges").

In developing the list, the emphasis was not necessarily to develop a long super-set of indicators, but in coming up with a set of indicator against which *realistic* and *accurate* data could be collected. So while many of the indicators commonly used by various organizations were included in our list, things such as "% of population covered by mobile" were NOT included, since the only accurate way to measure this would be to walk around with a signal-receiver in each part of a country, and most operators currently report this indicator have incentive to overstate their coverage (in published maps).

In the end the list of indicators can be grouped into 3 categories based on availability and source of data.

a) ***Indicators for which data is currently available through each country's NRA and/or NSO***: for these, the 6 country researchers will simply report the same data that is collected and reported by the NRA/NSO, stating details on definitions made by the NRA/NSO (e.g. each country's definition of a "mobile subscriber" needs to be precisely stated).
b) ***Indicators for which data is not available through NRA/NSO, but can be calculated (with some effort) using primary sources such as mobile operator audited financial statements/annual reports***: for these, the 6 country researchers will use primary sources, make reasonable assumptions when needed, and report their numbers along with method of calculation.
c) ***Indicators for which reasonably accurate or "easily" calculate-able data is not available, but are vital in assessing a countries telecom sector***. These indicators are therefore listed as "proposed" – meaning that LIRNE*asia* proposes that NRAs/NSOs consider including these indicators into their basic set, in the future.

Annex A contains the current list of agreed-upon indicators. It is understood that this is very much a living document – we will continue to add (and delete) indicators over time.

Researchers will collect and report data against each indicator. At a minimum, the data series for each indicator start in the year 2000, and contain data up until December 31st 2005. However in several of the (six) countries being studied, important or interesting policy interventions/market-events happened *before* the year 2000; in such cases, the respective researchers will present data for years prior to 2000, as available.

5.1 The Indicator Manual

An Indicator Manual will be developed as planned. This manual will contain a list of agreed upon indicators with a definition, frequency of sampling and example for each. At present there are variances across the countries in the definition and sampling frequency of indicators. We hope to be able to pick either the most common or most reasonable/sensible definition/frequency out of the ones currently in use, and recommend that as the new "standard" for the indicator.

The Manual will contain an annex which will report on each indicator for each country, along with the definition and frequency of sampling for each indicator in country.

5.2 Online Indicator Database

An online database (available through the web) that contains the data for each indicator will be developed by LIRNEasia. The database will be easy to use, and will allow NRAs/NSOs and LIRNEasia researcher to enter data for each indicator for each country.

All information available in the Indicator Manual will be contained in the website – therefore we hope the Indicator Manual will soon be obsolete.

The long term goal is to have the Indicator website+database governed and owned by the NRAs/NSOs, with LIRNEasia simply coordinating, facilitating, and perhaps managing the technology.

5.3 Next Steps

In March 2007, LIRNEasia will host (in Singapore) its 2nd Indicator Meeting attended by the NRAs and NSOs for South Asian and ASEAN countries. We will seek their endorsement of the Indicator Manual, thereby ensuring its adoption in the region. We will also seek their commitment to providing data (online) to the Indicator Database. We expect the workshop will involve detailed discussions on the indicators definitions before the manual is endorsed and adopted.

Prior to the March 2007 meeting (starting at least 1.5 months prior), LIRNEasia will circulate the Indicator Manual to the Economic/Data/Statistical analysis (or equivalent) Divisions of each NRA/NSO. The goal is to seek their input and comments about the proposed indicators. LIRNEasia will work with the staff of these divisions to obtain their endorsement – so that by the time their seniors (i.e. the country regulators) attend the March 2007 workshop, the manual has already been endorsed by the hands-on staff at each NRA/NSO.

Therefore a draft of the Indicator Manual and a working version of the Indicator Database will be completed by LIRNEasia by mid-January 2007. Both will be peer-reviewed prior to circulation to larger groups.

6.0 Teleuse on a Shoestring 2

A 'first cut' of the findings of the research were presented by Shaheen Cader & Chathura Kodituwakku, of ACNielsen Sri Lanka, to LIRNEasia's researchers. The presentation focused on several key themes that have emerged from the data.

This study commenced in June 2006; LIRNEasia together with ACN Sri Lanka designed the study and research tools (survey questionnaire, diary and focus group discussion guides). The field work was conducted by ACN's affiliates in each country covered by the study (that is, India, Pakistan, Philippines, Sri Lanka and Thailand), supervised by ACN Sri Lanka.

6.1 Methodology

A brief introduction to the methodology was given. The study employed both quantitative as well as qualitative methods, depicted in Figure 2.

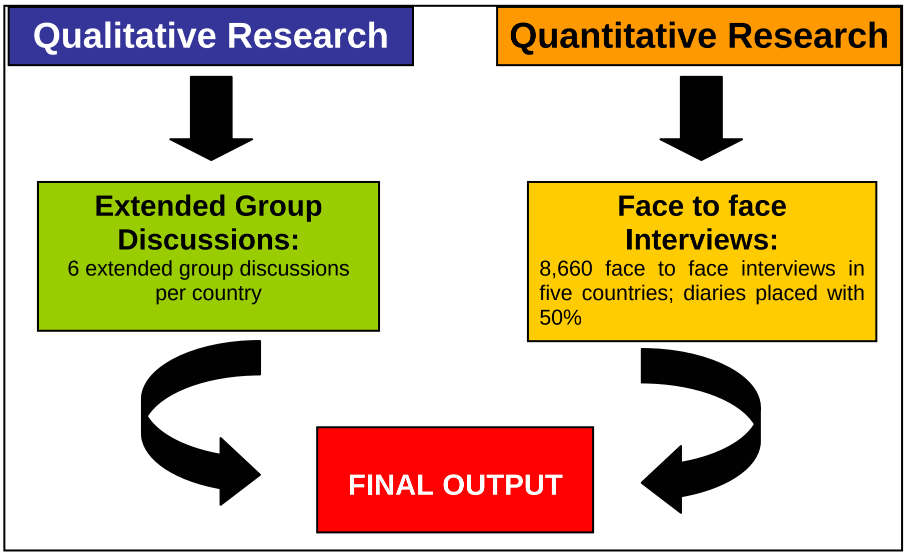

Figure 2: Study Methodology

__Target audience:__

A. Qualitative:

Category	Males and Females
Age	18-24 years, 25- 40 years
SEC	C, D and E
Usership	*Tele user*: who is defined as Someone who has used any (telephone, SMS, mobile) during the past 3 months *Non User*: who is defined as Someone who has not used any mode of telecommunication (telephone, SMS, mobile) during the past 3 months *Access need not be through own phone but can be through a neighbor, friend, communication booth or any other. It also need not be paid for*
Centres	*India, Pakistan, Philippine, Sri Lanka and Thailand*

B. Quantitative:

Category	Males and Females (50:50)
Age	18 - 60 yrs
SEC	ABC & DE
Usership	*Tele user*: who is defined as Someone who has used any mode of telecommunication (telephone, SMS, mobile) during the past 3 months.

	Access need not be through own phone but can be through a neighbor, friend, communication booth or any other. It also need not be paid for.
Centres	India, Pakistan, Philippine, Sri Lanka and Thailand
Sampling Method:	Stratified Random Sampling

Sample country composition for Qualitative component:

Category	**Male**				**Female**				**Total**
	18 – 24 Years		**25 – 40 Years**		**18 – 24 Years**		**25 – 40 Years**		
	Urban	**Rural**	**Urban**	**Rural**	**Urban**	**Rural**	**Urban**	**Rural**	
Tele Users	1			1		1	1		4
Non users				1				1	2
Total	1		2		1		2		**6**

Sample Size & Composition for Quantitative component

Country	SEC ABC	SEC DE	Total
Pakistan	685	1125	1810
India	800	3200	4000
Sri Lanka	250	800	1050
Philippines	120	980	1100
Thailand	200	500	700
Total	**2055**	**6605**	**8660**

The data are representative of the SEC D's and E's in the respective countries; that is, **the numbers are projectable to low income segments in all countries.**

6.2 Next Steps

Some further analyses were collectively decided upon, resulting in a 'to-do' list. The data will be 'cut' and analyzed in several different ways (e.g, 'new' users vs. 'old' users; different occupational categories; rural vs. urban, etc). The question of *what is the 'addressable market?'* will be explored, as well as the price and income elasticities of demand will be attempted to be estimated. Sophisticated analyses tools (correlations, regressions, etc.) will be used to derive robust conclusions from the data.

AC Nielsen suggested the development of customized query-based analysis software be explored for the data; AC Nielsen India will provide a note and a cost estimate for the same.

Several themes were identified for papers to be explored; these are outlined below:

1. *Quantification of the benefits of access to telecom services* – does telecom really improve different aspects of peoples' lives (e.g financial, social, etc)? Do different kinds of people benefit differently? If so, which ones? Owners vs. non-owners; 'old' users vs. 'new' owners? Housewives vs. tradesmen? High users vs. low users? etc.
2. *Calculating the price and income elasticities of demand at the Bottom of the Pyramid* – The raw data indicates a price-inelastic demand; if successfully calculated, the link

between the associated substitution effect of a fall in prices and increased household welfare through the resultant expenditure on other goods (e.g. food, education, healthcare, etc.) will be drawn.

3. *The Next Billion Subscribers* – based on the idea purported by the GSMA, that the next billion subscribers will come from developing countries, those who, in this study, indicated that they plan to obtain a phone in the next 1 or 2 years can be profiled. Who are they? What do they want? What are they willing to spend? Etc.

a. Based on this, how do we transform non-owners into non-owners? How do we give them what they want? Are expenditure & usage patterns any different among owners vis-à-vis non-owners? (link to low ARPUs & high MOUs)

4. *Review of the methodology* – The difficulties faced in conducting a study of this nature are examined, as well as the methodological innovations that were undertaken.

5. *What is the addressable market?* – Some claim that the 'addressable market' is those who earn more than USD100 per month. From the data, we can look at the recently connected together with those who are planning to obtain phone in next 6 months-1year, and produce a 'diffusion of innovation curve.' By profiling these people, and looking at their income levels, we can estimate the addressable market.

6. *What form should public phones take?* – Should they be entrepreneurial vs. public funded? For e.g., the Indian franchise model (PCOs) vs. VPTs (BSNL, has been disastrous). The individual cases of each country will be examined. ok like a fixed phone.

7. *Analysis of period of ownership* – Look at how behavior changes over the period of ownership; e.g, are newer users more concerned about the degree of fashionability and social status associated with a phone? are they more strategic in their use? etc etc.

The following events have already been lined up, where findings from the study will be presented (and/or papers will be submitted):

Shoestrings2 Presentations :	
Date	***Event***
31 Oct 2006	Presentation of preliminary findings to Sri Lankan operators (Colombo)
29 Nov-1 Dec 2006	ESOMAR Telecom 2006: Convergence Revolution (Barcelona)
5-6 Dec 2006	CEPA Annual Poverty Research Symposium (Colombo)
Jan 2007	Presentation of preliminary findings to Indian operators (New Delhi)
19 Jan2007	CPR*south* 1: Research for Improving ICT governance in the Asia-Pacific (Manila)
Mar 2007	Official Launch of Shoestrings2 (Singapore)

7.0 Media Training and Dissemination Planning

7.1 Media Training

The program included a media orientation workshop for researchers, to sharpen their abilities to present research results to lay audiences effectively through the media. The objectives were to:

- To provide researchers an insight into media know-how, perspectives and requirements
- To equip researchers to handle media communications

The workshop was conducted by Media Consultant, Vineet Handa of Kaizzen Communications, with the help of a senior journalist, Ambar Singh Roy, Special Correspondent of The Hindu Business Line.

The workshop was very interactive using role-plays and case studies for the better understanding of the issues related to media handling and report writing.

The first session gave an overview of the media; this session provided researchers with an in-depth understanding of how the media works, the types of publications and media, the newsroom hierarchy, the journalist's point of view and their thoughts and challenges.

The second session focused on planning media campaigns, looking at the different media tools used in a PR campaign, their importance and aptness in a given situation.

In the third session the papers presented by the researchers were discussed, providing input for improving their presentation. A mock-interview was conducted by Ambar Singh Roy, and detailed feedback was given to the interviewee.

The final session focused on writing skills, including, the principles of writing a Press Release, types of Bylined articles- generic trend articles, technology specific articles and HR articles, how to edit articles and other ways of presenting news.

7.2 Dissemination Planning

The researchers should formulate dissemination plans for their studies. This can include press releases, Op-Ed pieces, interviews, news conferences, etc. A key factor which researchers should consider is whether the 'time is ripe;' media coverage is most effective when the issue (or a closely related one) that the research is concerned with is being talked about in the news, or when there are significant events taking place in the industry.

The 6CI study is scheduled for release in December 2006; the Shoestrings2 Study will be officially launched in March 2007 in Singapore, however exclusive 'previews' will be given to operator heads in Sri Lanka in October 2006, and India in January 2007.

Annex A: The Indicator List

Below is the list of indicators that have been agreed upon at present. This list will continue to be edited over time. A definition for each indicator is being discussed at present, and will be included in subsequent versions or the Indicator Manual.

Indicator	*Method*
Total TD	
Total Fixed + Mobile TeleDensity[6]	Calculated
Fixed	
Total Fixed (Wireline + Fixed Wireless Subscribers)	Calculated (possibly)
Fixed Wireline subscribers	Primary
Fixed-wiress subscribers	Primary
TotalFixed subscribers (wireline+FW) per 100 inhabitants	Calculated (possibly)
Fixed-wireline subscribers per 100 inhabitants	Calculated (possibly)
Fixed-wirless subscribers per 100 inhabitants	Calculated (possibly)
YOY growth - Total Fixed (w'line + FW) subscribers	Calculated
YOY growth - Fixed wireline subscribers	Calculated
YOY growth - Fixed wireless subscribers	Calculated
CAGR Total fixed (wireline + FW) subs	Calculated
CAGR fixed wireline subscribers	Calculated
CAGR fixed- FW subscribers	Calculated
Household penetration of Fixed subscribers	Calculated
Mobile	
Number of Mobile Subscribers (pre + post)	Calculated (possibly)
Number of mobile subscribers per 100 inhabitants	Calculated (possibly)
YOY growth of mobile subscribers	Calculated (possibly)
CAGR mobile subscribers	Calculated (possibly)
Number of Mobile Subscribers PRE PAID	primary
Number of Mobile Subscribers POST PAID	primary
Internet	
Total Number of Internet Subscribers [7]	Primary
Total Number of Broadband[8] Subsribers	Primary
Number of Internet Subscribers per 100 inhabitants	Calculated (possibly)
Number of BB-Internet Subscribers per 100 inhabitants	Calculated (possibly)
YOY Growth of internet subscribers	Calculated
YOY Growth of BB-internet subscribers	Calculated
CAGR Internet Subscribers	Calculated
CAGR BB-internet subscribers	Calculated
Total USERS[9] - internet	Calculated
Total USERS - BB internet	Calculated
Total Mobile-BB subscribers	Primary
Total Mobile-internet subscribers	Primary
Household internet subscribers	Optional
Commercial internet subscribers	Optional

[6] Researchers agree this not a "meaningful" indicator. But it was included in the list since one or more international organizations and several NRAs collect/report "total teledensity" as the sum of mobile and fixed
[7] Household + Commercial
[8] 256 kbps, and always on
[9] Estmate of number of "Users" (as opposed to subscribers) is an attempt gain insight into device sharing (via internet kiosks, at home etc)

ICT	
Total number of households with a PC	Primary
% of households with a PC	Calculated

Leased Line Prices	
Domestic Leased line prices - 2mbps for 2km	Primary/Calculated
Domestic Leased line prices - 2mbps for 100km	Primary/Calculated
Int'l leased line price	Primary/Calculated

Cable	
Total (wired) Cable[10] subscribers	Primary
Cable subscribers per 100 inhabitants	Calculated
YOY Growth cable subscribers	Calculated
CAGR	Calculated

Prices - mobile, fixed	
OECD high fixed Basket price (PPP)	Calculated
OECD high fixed Basket price ($)	Calculated
OECD high mobile Prepaid Basket (PPP)	Calculated
OECD high mobile Post-Paid Basket ($)	Calculated
OECD high mobile Prepaid Basket (PPP)	Calculated
OECD high mobile Post-paid Basket ($)	Calculated
Monthly internet price (any type)	Primary
Monthly BB price	Primary
OECD high mobile (Pro, Post) basket as % of GNI	Calculated
All above as % of GNI	Calculated

Industry Financial data	
Fixed (wireline+FW) ARPU per Operator	Calculated
Fixed (wireline+FW) ARPU for Industry	Calculated
Mobile pre paid ARPU per Operator	Calculated
Mobile post paid ARPU per Operator	Calculated
Mobile pre paid ARPU for Industry	Calculated
Mobile post paid ARPU for Industry	Calculated
Industry Revenues	Calculated
Industry Revenues as % of GDP	Calculated
EBITDA Margin for industry, weighted by revenue	Calculated
Total Investment into Telecom Sector	Best Attempt calculation
Total Foreign Investment into Telecom Sector	Best Attempt calculation
Total Tax paid by sector	Best Attempt calculation
Total Employment in Sector	Proposed
ARPU voice vs data breakdown	Proposed

Market Strucuture	
Fixed (wireline+ FW) market share by # of subscribers	Calculated
Fixed (wireline+ FW) market share by revenue	Calculated
Fixed (wireline+ FW) market share by minutes of usage	Calculated
Mobile market share by # of subscribers	Calculated
Mobile market share by revenue	Calculated
Mobile market share by minutes of usage	Calculated
HHI for mobile market, using mt share by subscriber/revenue	Calculated
HHI for fixed market, using mkt share by subscribers/revenue	Calculated

[10] Only wired cable ("copper to the home") is counted here

Market share of Pvt vs Public operators - mobile	Calculated
Market share of Pvt vs Public operators - fixed	Calculated
HHI for wholesale fixed vs Fixed capacity	Proposed
ISP Market Share	Proposed

Digital Divide	
Density Urban vs Rural[11] - Fixed (wirelines+fw)	Calculated
Backbone map for country	Proposed
Mob coverage map per operator	Proposed
Base Station map per operator	Proposed

Mobile Usage	
Average minutes of use for mobile subscriber per month	Calculated
Average minutes of use for mobile postpaid subscriber per month	Best attempt calculation
Average minutes of use for mobile pre-paid subscriber per month	Best attempt calculation
Avg. outgoing SMSs per subscriber per month	Best attempt calculation

Basic Demographics	
Total Population of country	Primary
Number of people per household	Primary
Number of households in country	Primary/calculated
Avg Gross Nationl Income, per month in $	Primary
Estimated growth rate for pop	Primary

[11] Each country will use its NSO's definition/classification of "Urban" and "Rural"

Annex B: Program, 12-16 September 2006

Draft 2.07

Program for mid-cycle research review and dissemination planning meetings, Chaaya Village, Habarana (http://www.chaayahotels.com/village.htm), Sri Lanka, September 12-16, 2006

Objectives

i. **Ensure that the six-country research program is on track and make mid-course corrections if necessary.**
ii. **Identify the common themes of the two multi-country papers that will be written and identify the authors.**
iii. **Provide substantive input for indicators manual and conceptual paper (and vice versa).**
iv. **Develop dissemination plan for 2006-07 research.**
v. **Improve researchers' ability to present research results to lay audiences.**
vi. **Obtain input for analysis of shoestrings2 research data.**
vii. **Identify writers for shoestrings2 articles.**
viii. **Strengthen the virtual organization.**

Notes

1. It is expected that all participants will stay the entire period (four nights, starting on the 12th of September, Tuesday). If you are not staying the entire period, please let Prashanthi (weragoda@lirne.net) know ASAP and have the appropriate research manager approve.
2. Sri Lanka is unfortunately, in the grip of a low-intensity conflict with a rather sophisticated opponent, the LTTE. So far, the conflict areas are limited to the East Coast and an occasional bomb in the city. The hotel is quite far from both the East Coast and Colombo. We cannot guarantee that you will not experience any of the manifestations of the conflict, but to the best of our judgment, it is unlikely that there will be any danger. We have lived through much worse. We will take all possible precautions and will inform you if the situation deteriorates.
3. To the best of our knowledge, visas are not required for the people attending the research review. If you wish to check: http://www.immigration.gov.lk/html/visa/fees.html#SATOP. Purpose of visit should be given as tourism.
4. LIRNEasia will be responsible for your economy-class airfare (Prashanthi must approve prior to purchase); five nights at the Chaaya Village (all meals, taxes, but not extras); extra nights in Colombo required for flights; transportation to/from airport; transportation to/from Habarana (with group) and the Ritigala trip.

Tuesday, Sept 12th	
0545	Travel to Habarana (Chaaya Village)
1300-1500	Media overview (Vineet Handa, et al.) (Chair RS)
1500-1530	Tea/coffee
1530-1730	Overviews on state of research (Harsha de Silva, Helani Galpaya, Divakar Goswami) (Chair RS)
1730-2000	Free time
2000-	Dinner

Wednesday, Sept 13th	
0830-0915	INDONESIA country report and discussion (Chair Harsha de Silva)
0915-1000	INDIA country report and discussion (Chair Harsha de Silva)
1000-1030	Tea/coffee
1030-1115	SRI LANKA Country report and discussion (Chair Harsha de Silva)
1115-1200	PHILIPPINES Country report and discussion (Chair Divakar Goswami)
1200-1330	Lunch
1330-1500	Planning a campaign (VH et al.) (Chair RS)
1500-1530	Tea/coffee
1530-1700	Discussion of research papers (VH et al.) (Chair RS)
1700-1830	Writing skills (VH et al.) (Chair RS)
2000-	Dinner

Thursday, Sep 14th	
0830-0915	PAKISTAN country report and discussion 5(Chair Divakar Goswami)
0915-1000	THAILAND country report and discussion (Chair Divakar Goswami)
1000-1030	Tea/coffee
1030-1230	Themes and issues; what should go into the thematic reports? (Chair Harsha de Silva)
1230-1330	Lunch
Afternoon	Free time for tourism (Ritigala)
2000-	Dinner

Friday, Sept 15th	
0830-1000	Mid-course corrections (Chair Harsha de Silva)
1000-1030	Tea/coffee
1030-1200	Wrap up and assignment of responsibilities (Chair Divakar Goswami)
1200-1330	Lunch
1330-1530	Presentation of shoestring findings and

	discussion (Chair HdeS)
1530-1600	Tea/coffee
1600-1800	Discussion (Chair RS)
2000-	Dinner

Saturday, Sept 16th	
0830 – 1030	Identify themes, stories; assign responsibilities for writing (can the thematic work in shoestrings and the thematic work in the policy/TRE component be merged? E.g., TRE on price regulation; liberalization action re price regulation, comparative PPP prices using basket methodology; and shoestrings perceptions of prices?) (Chair RS)
1030-1100	Tea/coffee
1100-1230	Discussion and wrapping up loose ends (Chair RS)
1230-1400	Lunch
	Travel to Colombo after lunch