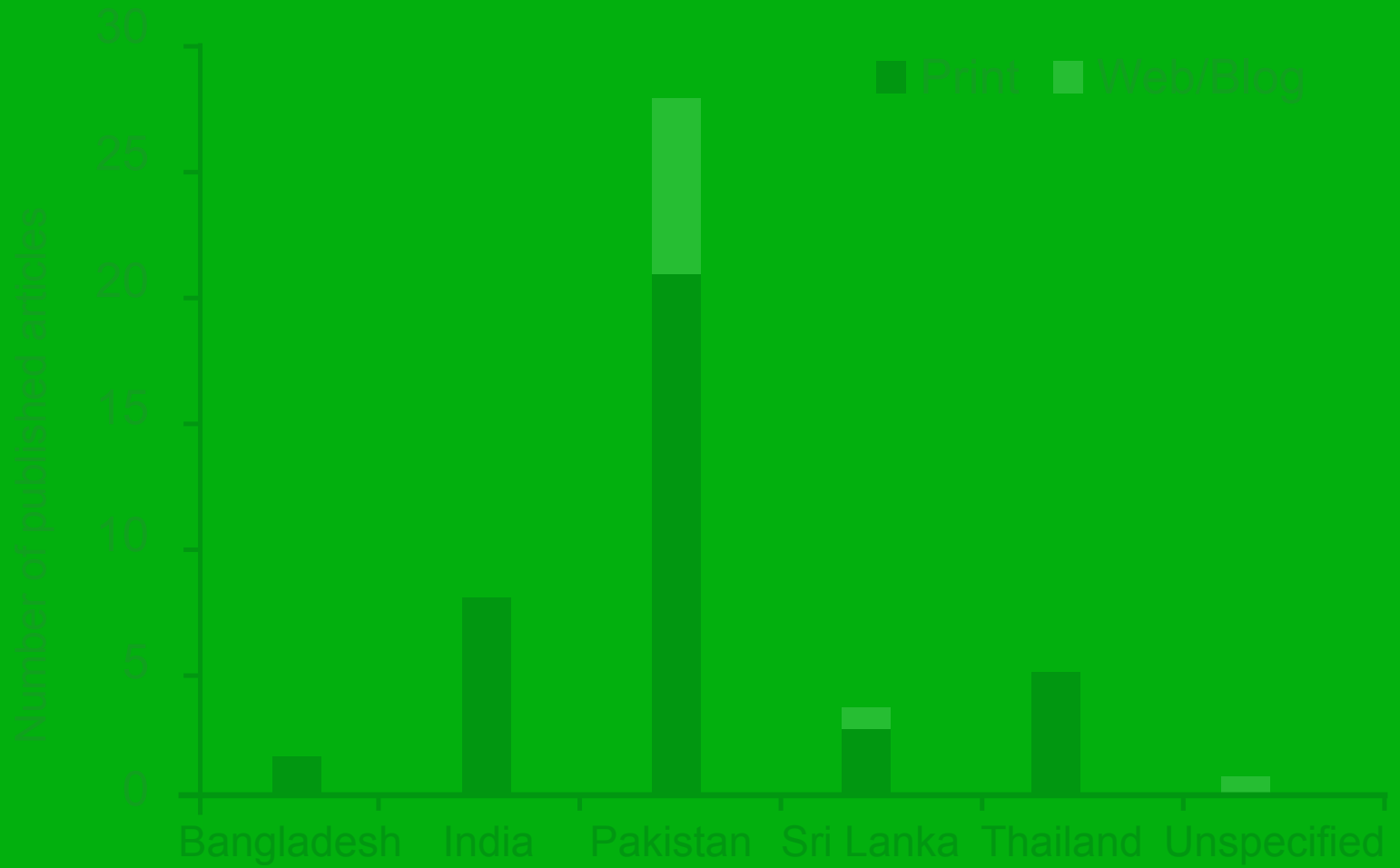


Our mission

*To improve the lives of the people of the emerging Asia-Pacific by facilitating their use of ICTs and related infrastructures;
by catalyzing the reform of laws, policies and regulations to enable those uses through the conduct of policy-relevant research,
training and advocacy with emphasis on building in-situ expertise*

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CEO's message



In 2010, LIRNEasia commenced its 4th research cycle, supported by a two-year grant from the International Development Research Centre of Canada and UKaid from the Department for International Development of the United Kingdom. As in previous years, the research component has three modules, one on demand-side research (Teleuse at the bottom of the pyramid 4), one that further developed the supply-side indicators work we had started doing in 2006, and a third thematic area focused on knowledge and information gaps in agricultural value chains. The overall proposal is entitled “Innovations for inclusive knowledge-based economies in emerging Asia: Research, dissemination and advocacy by LIRNEasia.”

This proposal marked a major shift in LIRNEasia's research focus and the audiences we address. We had done a little bit of pilot research on agriculture in 2006-08, and a few small projects funded by a collaboration between the International Fund for Agricultural Development and the International Development Research Centre (ENRAP) and USAID (Connecting Regional Economies Program), all in Sri Lanka. But ICT infrastructure was always center stage. With the proposal submitted in 2010, agriculture came to the fore. Research has commenced on agriculture in four countries and we are grappling with the challenges of disseminating the findings to audiences we have never reached out to before. The advantages we have with telecom audiences who have interacted with LIRNEasia for six years and with me for over a decade are absent when we venture into applications.

Similar challenges faced the directors of the projects on *knowledge to innovation* (K2I) and *real-time bio-surveillance program* (RTBP). Sujata Gamage had the advantage of working in a single, small

country, and indeed in a region of that country. She also had credibility from having served a few years back as Director General of the Tertiary and Vocation Education Commission of Sri Lanka. Over the three and half years of the project she built the relationships and the credibility necessary to institutionalize the findings of her action-research project on knowledge to innovation processes in government. The fact that she was recently invited to serve as the National Coordinator of the Federation of Sri Lanka Local Government Authorities (FSLGA), an association of local government bodies formed in the aftermath of the 2004 Indian Ocean tsunami by the Federation of Canadian Municipalities (FCM), is evidence of her success.

Nuwan Waidyanatha is a mathematician, not a physician. His project real-time bio-

surveillance program covers the Sivaganga District in the State of Tamil Nadu of India and the Kurunegala District in the Wayamba Province of Sri Lanka. He lives and works in Kunming, in the Yunnan Province of China. His project involves the use of mobile phones and a highly autonomous self-improving software system for data mining called T-Cube. He seeks to improve the scope and speed of epidemiological data collection and the ability to identify patterns that can foretell the emergence of infectious or non-infectious diseases in specific locations. Nuwan had to navigate two government bureaucracies to implement the project. With the help of Professor Ashok Jhunjunwala in India and Dr. Vinya Ariyaratne in Sri Lanka, he did. Then he had to communicate the rich findings of the pilot to the key decision



Sujata Gamage at the launching ceremony of National Competency Standards for Municipal Solid Waste Operation Assistant, 29 June 2010 at Bandaranayake Center for International Studies, Sri Lanka



Nuwan Waidyanatha speaking at the real-time bio-surveillance program media event, 14 September 2010, Colombo, Sri Lanka

makers in the health bureaucracies in two countries and to the media. This too was successfully done. The mobile-based system is now operational in the Wayamba Province, even after the end of the project.

So we draw inspiration from the successful dissemination efforts of the K2I and RTBP projects, as we move forward to the dissemination phase of the 4th cycle of research.

Of course, our research is not limited to applications. We still do a substantial amount of research that is of relevance to telecom policymakers, regulators and senior managers of telecom operators. In April 2010, LIRNEasia conducted a major stakeholder dissemination event in Pakistan in collaboration with the Pakistan Telecom Authority. Here, we presented the research findings of the 3rd cycle of research that looked at the preconditions for the emergence of more-than-voice services of relevance to those at the bottom of the pyramid (BOP). The event was held in Islamabad, but was attended by representatives of regulatory agencies from the region as well as media personnel from afar. It generated coverage in Thailand and India, among other places.

One of the key recommendations to emerge from the 3rd cycle research was the importance of creating low-transaction-cost environments for mobile applications including the offering of standard reasonable revenue-share contracts to applications developers. At the Islamabad event, a CEO of a major Pakistani mobile operator (Zong [China Mobile Pakistan]) made a public commitment to offer standard contracts to applications developers. We did not track whether the commitment had been kept, but were gratified on return to see that a Sri Lankan software firm (hSenid), in collaboration with Etisalat, announcing exactly what we recommended at the Expert forum in Pakistan. The App Zone is a unique platform that allows for the testing and marketing of mobile applications for feature phones which still predominate at the BOP.

LIRNEasia's Senior Policy Fellow Abu Saeed Khan was appointed as the first Secretary General of the Association of Mobile Telecom Operators of Bangladesh (AMTOB) in August. AMTOB has been existence for some time, but this is the first time a full-time executive was appointed to coordinate its activities. The appointment came at a challenging time, as the licenses of three major mobile operators come up for renewal.

Abu Saeed initiated a push to address a core problem affecting broadband access in Asia, the high cost of international backhaul in Asia, relative to Europe and North America. His solution is the laying of terrestrial fiber along the Asian Highway as a supplement to the existing undersea cables serving Asia. LIRNEasia has been engaging with the UN Economic and Social Commission for the Asia Pacific (ESCAP) which has authority over the Asian Highway since September 2010 and has succeeded in getting the topic on the policy agendas of ESCAP, the Asia Pacific Telecommunity (APT) and the International Telecommunication Union (ITU). The progress made so far leaves us hopeful that Abu Saeed will be able to repeat the (undocumented) catalytic role that he played in getting Bangladesh connected to SEA-ME-WE 4 in 2005. Abu Saeed will continue as Senior Policy Fellow in his personal capacity and will keep his AMTOB activities separate. We wish him well.

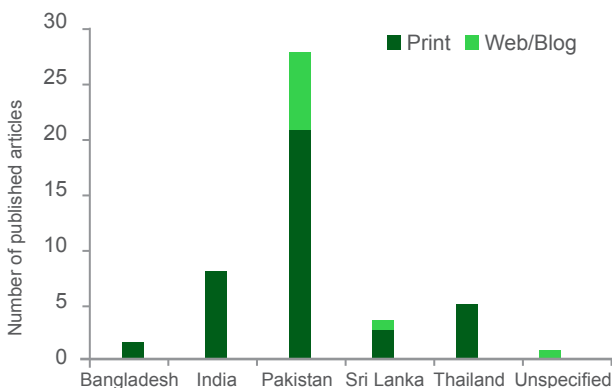
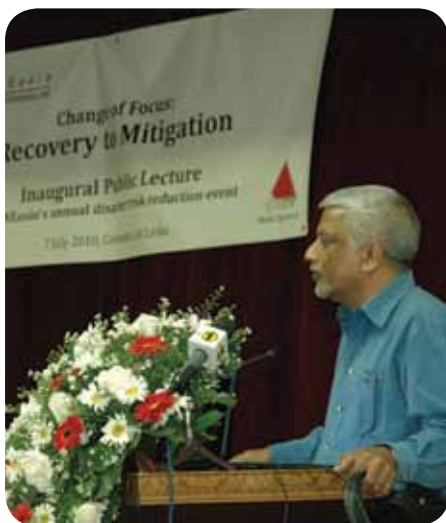


Figure 1: Media coverage (print and web/blog) by country of the Expert forum meeting on “Mobile 2.0 Applications and Conditions”, 26-27 April 2010, Islamabad, Pakistan



Abu Saeed Khan, Senior Policy Fellow of LIRNEasia and Secretary General of the Association of Mobile Telecom Operators of Bangladesh

LIRNEasia focused its corporate social responsibility initiatives by launching the Annual LIRNEasia Disaster Risk Reduction lecture in July 2010. The first lecture was delivered by Dr. Vinya Ariyaratne, the General Secretary of the Sarvodaya Shramadana Movement, Sri Lanka's largest community-based organization with a strong profile in responding to disasters. Vinya has served on the board of LIRNEasia from the outset and I advise Sarvodaya on ICT matters. LIRNEasia has partnered with Sarvodaya on many projects in the disaster risk reduction space since 2005 and continues to channel its corporate philanthropy through Sarvodaya, most recently during the twin floods that ravaged the North and East of the country in January 2011.



Rohan Samarajiva, Chair and CEO of LIRNEasia at the inaugural Disaster Risk Reduction lecture, 7 July 2010, Colombo, Sri Lanka.

The previously announced departure of Senior Research Manager Chanuka Wattegama occurred in August 2010. He is an independent consultant in telecom and continues to work with LIRNEasia as Research Fellow. Anusha Wickramaratne, Junior Researcher, left LIRNEasia end of March 2011 to join government service. We wish them both well.

Juhee Kang, a PhD student from Michigan State University originally from Korea and with significant field experience in Asia, joined LIRNEasia for six months under the CPRsouth internship program at the beginning of 2011.

The LIRNEasia family continues to grow in multiple ways. Maithri, the son of Helani Galpaya, COO, and Thusitha Gooneratne, joined the LIRNEasia family in September 2010. Divakar Goswami, employee number 2 at LIRNEasia, and Aarti Vir welcomed Mehr into the world also in 2010. Shazna Zuhyle, Research Manager, and Ahamed celebrated the birth of their daughter Athiya in March 2011. Savinu, the son of Inoshika and Dimuthu Ratnadivakara, our resident statistical wiz who moved on to greater challenges, arrived in March 2011. We warmly welcome them as well as the new research fellows who started to work with us in 2010-11.

Rohan Samarajiva
Chief Executive Officer



Some of the LIRNEasia staff, families and friends on the 2010 annual trip.

Senior management team
(incl. CEO)

Finance &
operations unit

Affiliate
project
teams

Consultants

Researchers

Research fellows
& policy fellows

About LIRNEasia



LIRNEasia is a regional ICT policy and regulation think-tank active across the Asia-Pacific. Through applied research, we create independent, actionable knowledge and disseminate it. We document and disseminate regional best practices and provide training and advisory assistance to governments and parties who request it.

Our primary audiences are senior policymakers, regulators and senior executives of telecom operators and manufacturers. Our secondary audiences are the media and opinion leaders who shape the symbolic environments of our primary audiences. LIRNEasia is a young and lean organization. We maintain a physical presence in Colombo; however, much of our work happens virtually. At the end of the 2010-11 financial year, we had 14 full-time equivalent employees (12 full-time and four part-time) and four experts based in Colombo. However, LIRNEasia's dynamic group of research and policy fellows, from Bangladesh, India, Indonesia, Pakistan, the Philippines, Sri Lanka and Thailand, are team members in the fullest sense. This setup is an economical solution to the problem of mobilizing LIRNEasia's geographically-dispersed human resource pool.

LIRNEasia's principal strength is its people and the way it builds that strength is by spending time and energy on selecting its people, on motivating them, on upgrading their skills, and in involving them in collective design of key activities. A strong commitment to actionable research and to communicating it to key audiences is a defining feature.

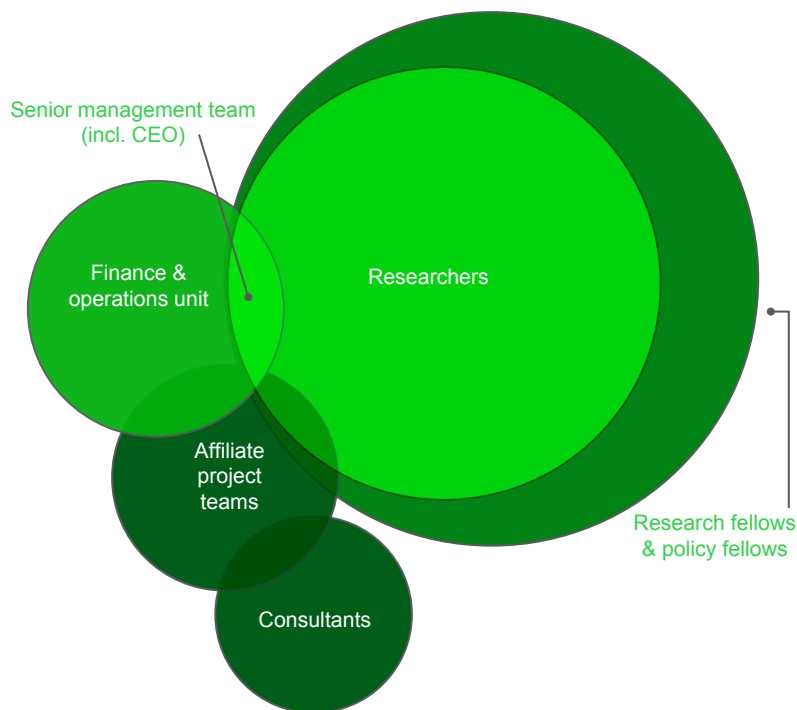


Figure 2: LIRNEasia organizational structure (March 2011)

Given that we seek to develop subject expertise among our senior staff, research managers have their subject expertise reflected in a second part of their titles (e.g., Chief Operating Officer and Indicators Specialist).

The organization was developed organically, starting from a single room that accommodated two full-time and several part-time staff to what it is now. The organizational culture was defined in opposition to government culture in Sri Lanka and the less productive aspects of university culture. For example, LIRNEasia has only one messenger and a part-time cleaning associate, with researchers expected

to make their own coffee, etc. Until 2008, there were no formal weekly meetings and even now, the review meetings are tight and limited to one hour at most. On the other hand, the colloquium is at the heart of the organization, giving primacy to free debate over research and highlighting the importance placed on quality assurance.

The resistance to “faculty meetings” in the early days and the change to holding weekly research review meetings since 2008, illustrate the malleability of management. As the organization grew in a location more spacious than the single room we

started in, it was realized that internal communication had to be formalized because the earlier informal and highly effective methods were no longer working. So the change was made.

On the other hand, there has been no change in direction from the highly decentralized IT structure that was put into place at the beginning (e.g., one of the first WiFi offices in Sri Lanka; no PABX; no receptionist; blog with static components instead of conventional website). If anything, we have decentralized further, with a new Gmail-based email system that makes access from elsewhere as easy as from the office. Researchers (as well as key finance and administrative staff) are equipped with laptops and mobiles and increasingly with mobile broadband dongles too. To the greatest extent, we are a paperless office: we print (and fax) only as a last resort, or to fulfill legal obligations. Most of our communication happens over email, Skype, phone or coffee. We figure out what works and what does not, and then we formalize into procedures.

The financial management of a complex organization with six separate research projects, each with its own reporting requirements, multiple currencies, researchers and activities in multiple countries, etc., is done by two people. Strategic directions are set by the CEO in consultation with the COO and staff and with the concurrence of the Board, comprising senior individuals from civil society, the private sector and higher education. The Scientific Advisory Council also contributes. Inputs for strategic thinking come from close interactions with key audiences in the course of research dissemination and from the febrile web.

Board of directors



**Rohan Samarajiva, PhD
(Chair)**

Chief Executive Officer,
LIRNEasia, Sri Lanka



**Anoja J. Obeyesekere,
Attorney-at-law, LLM**

Consultant-Executive Vice
President, Multinet Pakistan
(Pvt) Ltd., Pakistan
Appointed 1 May 2011



**Vinya Ariyaratne, MD,
MPH, MSc (Community
Medicine), MD
(Community Medicine)**

General Secretary,
Sarvodaya Shramadana
Movement, Sri Lanka



Milagros Rivera, PhD

Associate Professor
and Chair, Department
of Communications and
New Media, National
University of Singapore



**Indrajit Coomaraswamy,
PhD**

Former Director,
Economic Affairs
Division, Commonwealth
Secretariat, UK
Appointed 1 April 2011



**Luxman Siriwardena,
MA**

Executive Director,
Pathfinder Foundation,
Sri Lanka



**Mervyn de Silva,
ACMA, FCA, PGDip**

Managing Director,
Hayleys Industrial
Solutions, Sri Lanka



**Sandya Salgado, MBA,
MCIM**

Director/Chief Executive
Officer, Ogilvy Action,
Sri Lanka
Resigned 20 June 2011

Scientific Advisory Council



**William H. Melody, PhD
(Chair)**

LIRNE.NET, Denmark; Center for Communication, Media and IT, Copenhagen Institute of Technology, Aalborg University, Denmark



Alison Gillwald, PhD

Research ICT Africa; Graduate School of Business, University of Cape Town, South Africa



K.F. Lai, PhD

BuzzCity, Singapore



Sam Paltridge, PhD

OECD, France



Johannes M. Bauer, PhD

Department of Telecommunication, Information Studies & Media and Quello Center for Telecommunication Management & Law, Michigan State University, USA



Sherille Ismail, JD

Federal Communications Commission, USA ¹



Robin Mansell, PhD

Department of Media and Communications, London School of Economics and Political Science, UK



Visoot Phongsathorn

TEAM Group of Companies, Thailand



Hernan Galperin, PhD

DIRSI; Universidad de San Andrés, Argentina; Annenberg School for Communication, University of Southern California, USA



Ashok Jhunjhunwala, PhD

Department of Electrical Engineering, Indian Institute of Technology, Madras, India



Partha Mukhopadhyaya PhD

Centre for Policy Research, India



Randy Spence, PhD

Economic and Social Development Affiliates, Canada

¹ Not serving in an official capacity

Funding

LIRNEasia's research and capacity-building programs have been primarily funded by the International Development Research Centre (IDRC), Canada and through UKaid from the Department for International Development (DFID), UK. In addition, LIRNEasia has previously received project funding contributions from Telenor Research and Development Centre, Malaysia, the United States Agency for International Development (USAID), the Gates Foundation through the Institute for Money, Technology and Financial Inclusion of the University of California at Irvine, *infoDev*, the Canadian International Development Agency (CIDA) and the ICT Agency of Sri Lanka (ICTA).

Partner organizations

LIRNEasia maintained working partnerships with several organizations over the past year.

Table 1: LIRNEasia partners (2010-11)

| Partner | Organization type | Project / area | Partner type |
|--|-------------------|-------------------------------|-------------------------------------|
| Bandaragama Pradeshiya Sabha, Sri Lanka | Public | Knowledge to innovation (K2I) | Implementation partner |
| Colombo Municipal Council, Sri Lanka | Public | K2I | Implementation partner |
| Dambulla Dedicated Economic Zone, Sri Lanka | Public-private | AgInfo → AgStrategy | Research partner |
| Department of Communications and New Media, National University of Singapore | Academic | General | Research partner |
| Dialog Axiata PLC, Sri Lanka | Private | AgInfo → AgStrategy | Technology partner |
| Kaduwela Pradeshiya Sabha, Sri Lanka | Public | K2I | Implementation partner |
| Lee Kuan Yew School of Public Policy, National University of Singapore | Academic | Capacity-building | Masters enrolment; internships |
| Ministry of Trade, Marketing Development, Co-operatives and Consumer Services, Sri Lanka | Public | AgInfo → AgStrategy | Research and implementation partner |
| Nilgiri Networks Private Limited, India | Private | Indicators | Implementation partner |
| Pakistan Telecommunication Authority, Pakistan | Public | Mobile 2.0 | Workshop co-host |

| | | | |
|--|---------------|-------------|------------------------------------|
| Research ICT Africa, Africa | Academic | General | Research partner |
| Sarvodaya Shramadana Movement, Sri Lanka | Civil society | General | Implementation partner |
| Telenor Research and Development Centre, Malaysia | Private | Teleuse@BOP | Funding partner |
| Tenet Group, Indian Institute of Technology, Madras, India | Academic | Indicators | Research partner; workshop co-host |
| Tertiary and Vocational Education Commission, Sri Lanka | Public | K2I | Implementation partner |
| Vanguard Management, Sri Lanka | Private | General | Workshop co-host |

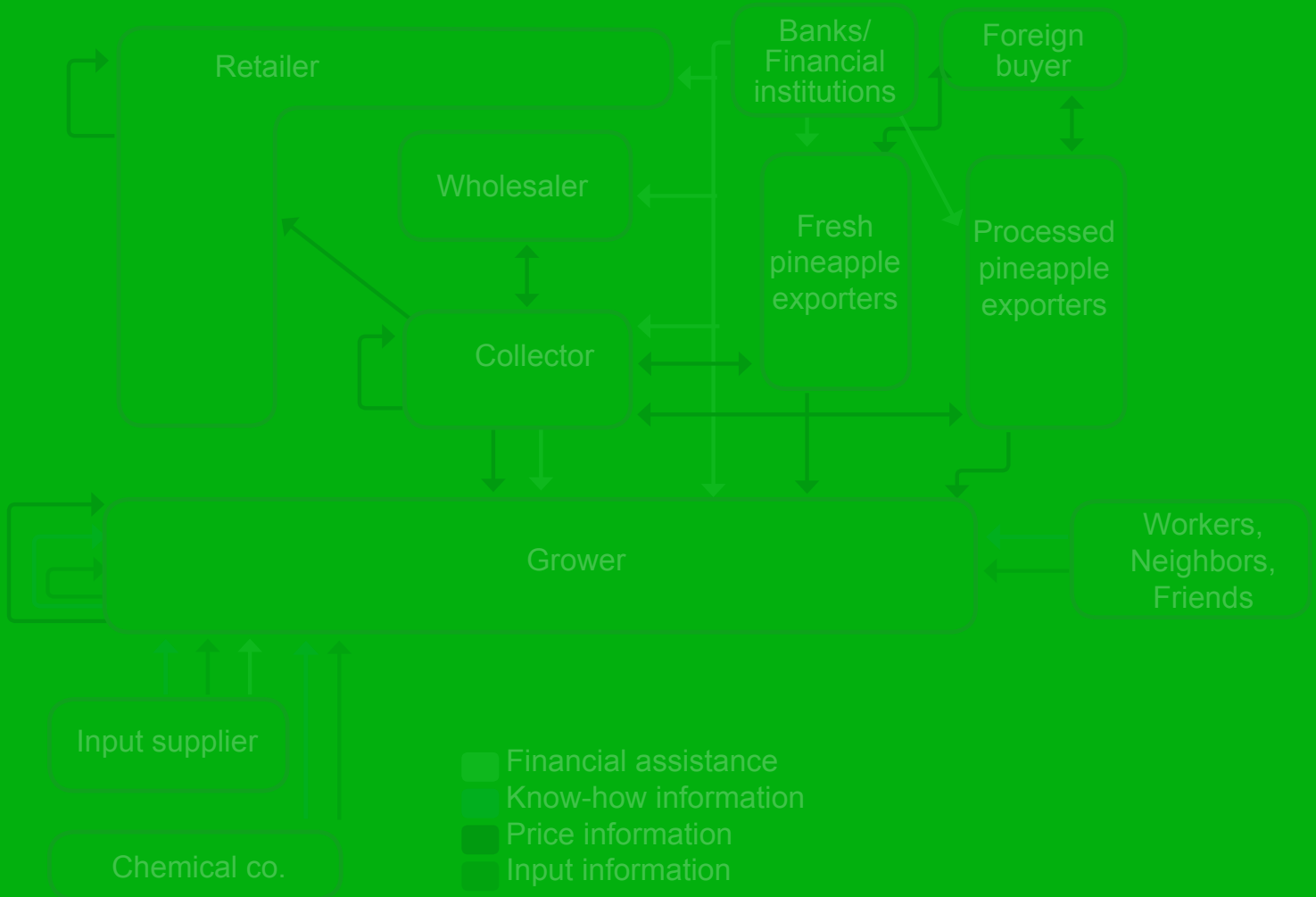
Awards and honors

Editorial Board Member of the Information Technologies and International Development (ITID) journal

Chief Operations Officer Helani Galpaya joined the Editorial Board of the Information Technologies and International Development (ITID) journal. The journal was ranked as the top journal in the information and communication technology for development (ICT4D) field for research impact, according to a 2010 study by Richard Heeks, a distinguished ICT4D scholar and Professor at the Institute for Development Policy and Management, University of Manchester.

2010 World Summit Award Mobile Content

Dialog TradeNet, a mobile phone-based service offered by Dialog Axiata PLC which allows farmers to receive price alerts from three agricultural wholesale markets in Sri Lanka, won Gold in the mobile-inclusion and empowerment category of the 2010 World Summit Award Mobile Content. The launch of TradeNet was based on years of agricultural research and an initiative by *Govi Gnana Seva* or Farmer Knowledge Service led by Harsha de Silva (Consultant Lead Economist at LIRNEasia) and Sriganesh Lokanathan (Senior Research Manager at LIRNEasia). The World Summit Award Mobile Content is a global initiative within the framework of the United Nations World Summit on the Information Society (WSIS), in collaboration with UNESCO, UNIDO and the United National Global Alliance for ICT and Development.



Review of activities



Research projects

Knowledge-based economies (KBE)

Knowledge-based economies (KBE), the thematic focus of LIRNEasia's 2010-2012 research, examines value chains and how they can be made more efficient and inclusive, using ICTs as instruments of knowledge creation and by reducing costs of codification, transmission and acquisition of knowledge.

The value chains selected are from the agriculture sector, the sector that employs the largest percentage of the workforce in all of the countries LIRNEasia works in and contributes the least to GDP.

Two export-oriented agriculture value chains each are being studied in three countries; jute and potato in Bangladesh, mango and pomegranate in India, and rubber and pineapple in Sri Lanka. In addition a meta-study is being conducted in Thailand, where extensive work on agriculture value chains has already been conducted. The research looks at the information and knowledge flows within the value chains, to identify bottlenecks. The information requirement is being broken down into input, know-how, financial information and price. The primary focus was on smallholder producers.

Through the research, LIRNEasia hopes to achieve an in-depth understanding of how innovations related to ICTs can be used to improve efficiency and inclusiveness of agricultural value chains. The preliminary results have shown that information and knowledge bottlenecks do exist. Some can be alleviated through the use of ICTs. However, access to knowledge and information alone will not be enough. Participants of the value chain are aware of information such as prices but may be unwilling or unable to use that information due to misaligned incentives. Standardization of products, realignment of incentives for value chain actors, storage facilities as well as the maintenance of law and order are required to ensure increased efficiency of value chains. Theft appears to be a significant issue especially when prices are high.

The diagram below shows the information and knowledge flows of the pineapple value chain that was studied in Sri Lanka.

Project Manager: Sriganesh Lokanathan

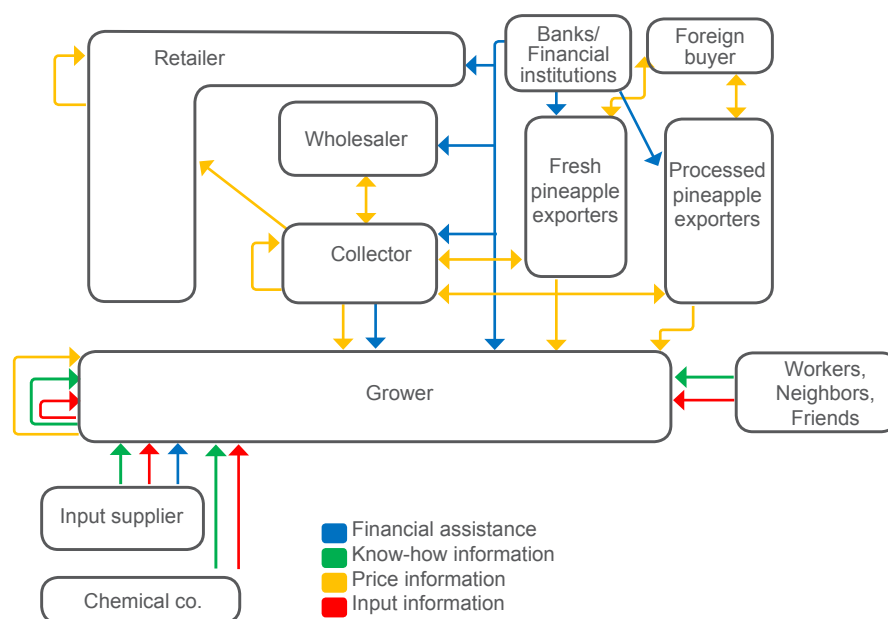


Figure 3: Information and knowledge flows within Sri Lankan pineapple value chain

Knowledge to innovation (K2I)

Independent think tanks are best positioned to “speak truth to power” but they often find it difficult to get heard. LIRNEasia has a proven track record of successfully communicating policy-relevant research.

LIRNEasia’s “Linking knowledge to innovation in government services: The case of solid-waste services in local government in Sri Lanka” project is a case in point. There are over 325 local authorities in Sri Lanka. Solid-waste was chosen as the sector due to the saliency of the issue to local authorities. An action research method enabled the project to give small, but much-appreciated, material benefits to each local authority that LIRNEasia worked with. At the invitation of the charismatic Mayor Ajith Manapperuma, the Gampaha Municipal Council was the first local authority that we worked with; that experience was then leveraged to convince other local authorities to try out various methods of improving solid waste management practices.

During the three years of the project, LIRNEasia worked directly with 70 local authorities and indirectly with all 325. Based on the trust built up with local authorities, LIRNEasia was able to convince national agencies to implement policies that advance the knowledge-to-innovation in local government.

With the object of creating an environment for knowledge sharing among solid-waste managers in local government, LIRNEasia worked with the Tertiary and Vocational Education Commission (TVEC) to introduce competency standards for solid-waste workers. This involved registering two local authorities as nationally recognized training centers; training and certifying over 40 solid-waste workers (though hundreds of applications were received); and establishing a community of practice made up of senior practitioners.

Access to knowledge is only a necessary condition for innovation. A competitive environment is essential for driving innovation, but governmental institutions typically operate in isolation. In the second phase of the project, LIRNEasia tried to bring an element of competition to the solid-waste sector within local government by developing a survey to rank cities according to their performance in solid-waste management. LIRNEasia has been able to institutionalize this initiative within the Western Province Waste Management Authority (WPWMA).

Project Director: Sujata Gamage



Peer to peer training programs - Waste management training for Public Health Inspectors by Nimal Premathilake, a senior practitioner at the Balangoda Solid-waste Management Training Center, Sri Lanka, July 2010



Introducing an innovation in non-biodegradable waste collection at the Soysapura Ward in Morartuwa, Sri Lanka – Sujata Gamage at a multi-stakeholder meeting, February 2010

Report card on sustainable solid-waste management

For sustainable solid-waste management, a local authority must provide services that help citizens reduce the waste that they put out for collection, and also to separate the waste at least into the two categories – non-biodegradable and biodegradable – so that the local authority can recycle most of the collected waste. In addition, local authorities are expected to keep their cities clean. LIRNEasia's original idea was to work with community-based organizations to collect real-time data on the services provided by local authority and the cleanliness of a set of randomly selected locations.

In practice, working with community-based organizations proved to be time-consuming and ineffective. We therefore secured the services of Nielsen Sri Lanka to develop the methodology and compare and contrast the efficacy and sustainability of solid-waste management practices of five local authorities in the greater Colombo area. The survey was carried out in partnership with the Western Province Waste Management Authority. The findings were disseminated together with the WPWMA. The possibility of using ICTs for real-time monitoring of solid-waste management is being explored.



Enumerators conducting the clean city survey, Boralesgamuwa, Sri Lanka

Livelihood benefits from greater price transparency in agricultural markets (AgInfo → AgStrategy)

In most developing economies, agriculture accounts for the highest share of employment as well as the lowest contribution to the GDP. The information and knowledge gaps that create inefficiencies in agriculture have been of interest to LIRNEasia right from its inception, primarily through research on understanding

information search costs for farmers. With Sri Lankan fruit and vegetable markets displaying high intra- and inter-seasonal price volatility (see Figure 4), our research has primarily concentrated on reducing information asymmetry in market price information.

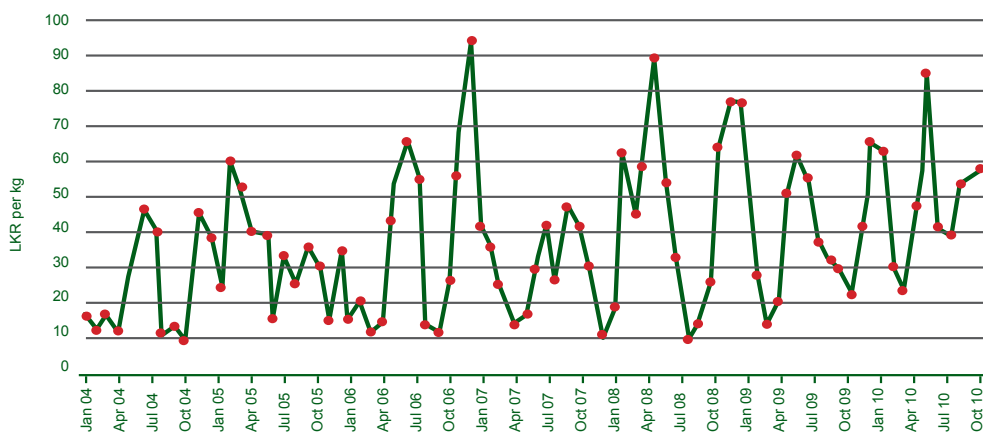


Figure 4: Average monthly prices of tomatoes at Dambulla Dedicated Economic Centre (2004-10)
Source: Govi Gnana Seva (GGS)

Govi Gnana Seva (GGS) or Farmer Knowledge Service (run by LIRNEasia researchers Sriganesh Lokanathan and Harsha de Silva) partnered with Dialog Axiata PLC in 2009 to collect and disseminate prices from Sri Lanka agricultural markets. LIRNEasia's research among a small group of farmers near one of Sri Lanka's main agricultural markets in 2009 showed that farmers who used this service were able to receive a 6.4 percent premium on average market prices (as compared to a 2.3 percent loss for those not using the service). Moreover the service was creating demand for agricultural extension services, since

farmers armed with increased knowledge of price movements wanted to diversify. Such behavioral changes contribute to better coordination between demand and supply, which can eventually reduce price volatilities. The success of this system has resulted in additional private sector funding, which will enable GGS to expand to other markets in the coming months.

Project Director: Harsha de Silva

Project Manager: Sriganesh Lokanathan

Measuring ICT sector and regulatory performance: Indicators 2010-2011

The rapid development of ICT and increased interest in its ability to contribute to development has brought the measurement of impact to the fore. How significant are the effects of regulatory and policy actions on investment, and thereby on sector performance? How does one know when the ICT sector is performing well? Do the commonly used indicators for measuring sector performance in the West make sense in the developing world? Can one balance the need for more information with the costs imposed on stakeholders who have to collect and report data against those indicators? These are some questions LIRNEasia attempts to answer through its research on indicators.

ICT sector performance reviews (SPRs) are in process for 10 countries (India, Pakistan, Sri Lanka, Bangladesh, Maldives, Philippines, Indonesia, Thailand, Afghanistan and Bhutan). Senior stakeholders in the large countries were surveyed about their perceptions on the effectiveness of the telecom regulatory environment (TRE) using the TRE survey.

Broadband quality of service (QoSE) testing, conducted in Sri Lanka, Bangladesh, India and Bhutan continued to show highly variable quality (usually lower speeds than advertised) and international bandwidth being a bottleneck. Domestic leased-line prices and broadband package prices were also benchmarked. Convergence in prices across countries was seen for all tracked products, with the exception of Maldives and Afghanistan. The

combination of QoSE and prices enabled us to calculate a value-for-money metric, which is lower for Asian consumers than their North American peers.

So far, QoSE testing has been successfully applied to fixed and mobile dongle-based connections. Technical problems have stalled attempts to extend the methodology to mobile-device-based broadband.

International voice and international roaming prices have been benchmarked. India is still the most expensive country for South Asian mobile users to roam in. Afghan mobile users paid the highest prices when roaming anywhere in South Asia. In almost all cases, roamers were better off purchasing and using a SIM from the country they were roaming in than they were using their home-country mobile SIM. For example, an Afghan roaming in India would pay 95 times more if he were to use his own (Afghan) SIM to make a local call. Several presentations were made in the past year to Asian policy makers on the need to harmonize regional roaming rates in a way that would offer roamers predictability. The fact that it was still cheaper to call outside the region than within was also highlighted at the Eleventh South Asian Telecommunications Regulators' Council (SATRC) and at the Asia-Pacific Telecommunity (APT) meetings.

Project Manager: Helani Galpaya

A really big idea: Asian information highway

LIRNEasia's research on broadband quality of service experience (QoSE) yielded an excellent diagnostic tool, the AT Tester software. It allows LIRNEasia (or any user) to compare broadband performance metrics across three domains: within the network of the user's own Internet service provider (ISP), within the same country but across multiple ISP networks, and within the Internet cloud. Tests have been conducted in cities in Bangladesh, India, Sri Lanka and Thailand. City after city, performance dropped radically whenever the Internet cloud was involved.

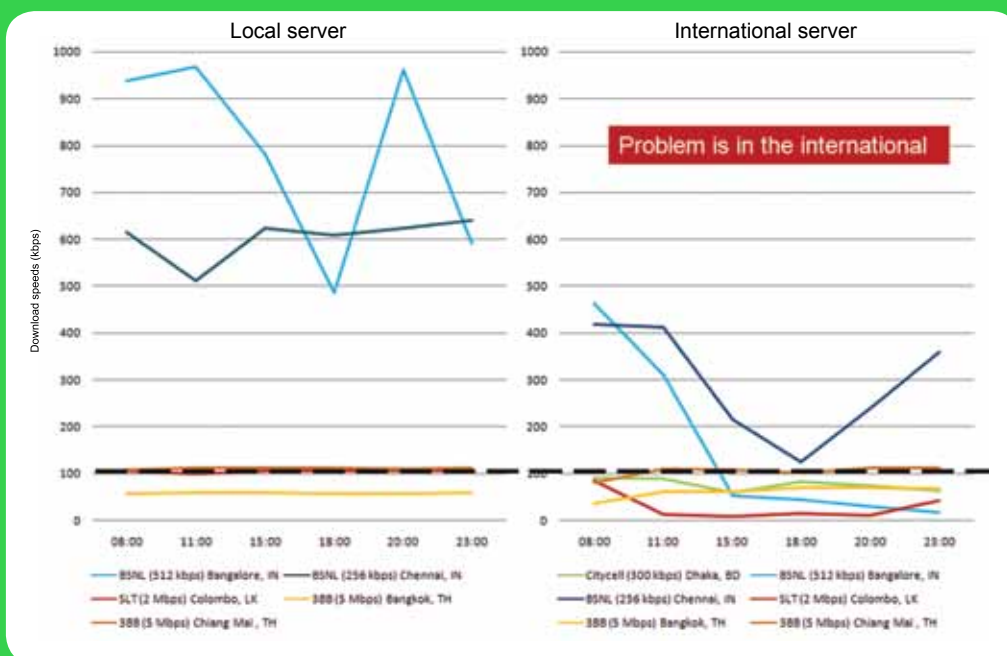


Figure 5: Download speeds (kbps) at the local and international server level (October 2010)

The only reasonable explanation was that the ISPs were economizing on a costly input: international backhaul capacity. Upon his own initiative, Senior Policy Fellow Abu Saeed Khan had been investigating the backhaul problem. He provided LIRNEasia with evidence that backhaul costs in Asia were three times that in Europe and North America. Unless these costs were brought down, LIRNEasia's proposals to extend the budget telecom network business model to broadband would not fly, he contended.

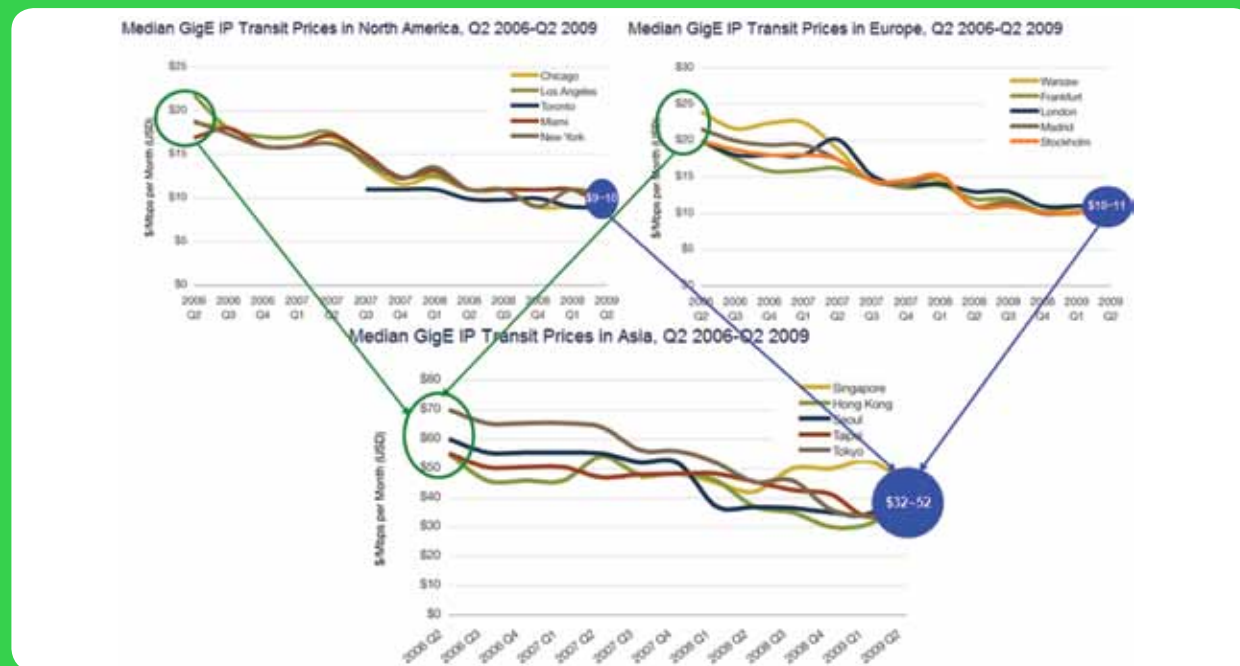


Figure 6: Asian, European and North American backhaul prices, 2006-2009 *Source: TeleGeography*

Abu also suggested the solution, an open-access terrestrial cable system he called LION (Longest International Open-Access Network) to complement the undersea cables that currently served Asia. He argued that Asia was the largest continent, yet it barely had any terrestrial cables. He said that the need for terrestrial fiber was even greater because earthquakes, fishing vessels, and possibly terrorists, had made submarine cables less reliable and the Somali pirates had made their repair and maintenance exorbitantly costly. He clinched the argument by showing evidence that three Indian carriers had laid aerial fiber across the Himalayas, through the Nathula pass into Tibet, to enable them to connect to the cable that ran along the Trans-Siberian Railroad and thus have a backup route into Europe.

The solution was to adapt the successful models of international cooperation exemplified by the SEA-ME-WE [Southeast Asia - Middle East - Western Europe] cable consortia (that include, for example, Pakistan and India). Since Grotius, the sea has been open to all. But to lay a consortium cable across land, permissions were needed from multiple countries. This could not be done by a private operator. The solution was to add a protocol on cable and conduits to the already existing inter-governmental agreement on the Asian Highway, an initiative of the United Nations Economic and Social Commission for the Asia-Pacific (UNESCAP). The road authorities had to own the cable to prevent dog-in-the-manger behavior by incumbent telcos.

With the kind encouragement of UNESCAP Executive Secretary Noeleen Heyzer, LIRNEasia began its engagement with the relevant units at UNESCAP, starting with the fortuitously timed bi-annual meetings of the ICT Committee in November 2010. The concept was presented to the committee and included in the final statement.

Since this time, the concept has been presented and discussed at industry and government fora, including the GSM Association annual meeting in Barcelona, the annual meeting of the South Asian Telecom Regulators' Council in Tehran, at the Policy and Regulatory Forum of the Asia-Pacific Telecommunity in Hanoi, and CommunicAsia in Singapore. The trade press is talking of LION. The salience of costly and unreliable backhaul in Asia has been raised. Progress is being made on an open-access fiber cable network in a mesh configuration running from Japan to Turkey. For a big idea that requires inter-governmental cooperation, the momentum so far exceeds our expectations.

Regulatory support for micro states in the Pacific

In line with the axiom that all problems are easy if we can solve the hardest ones, LIRNEasia has been interested in the problems of regulation in micro states. This is where capacity issues are most challenging. Dilini Wijeweera calculated based on benchmarks that Bhutan, a country with a population of 690,000, cannot have a regulatory agency with more than 25-30 people. The developing countries in the Pacific, except two, are smaller than Bhutan. The solution to the problem of effectively regulating with a staff of less than 25 deserves the equivalent of the Nobel in our field.

That is why we bid for the contract to establish and run a regulatory resource center embedded in the University of the South Pacific in Suva, Fiji. It will support the regulators in the Cook Islands (19,808 population), the Federated States of Micronesia (110,728), Fiji (849,218), Kiribati (98,045), Nauru (10,210), Niue (1,477), Palau (20,457), Papua New Guinea (6,732,159), Marshall Islands (62,041), Samoa (178,846), Solomon Islands (523,170), Tonga (103,976), Tuvalu (9,929), and Vanuatu (239,788). We were awarded the contract and Senior Policy Fellow M. Aslam Hayat relocated to Suva.

The Center has two years of funding from the World Bank. During that short start-up period, we must make the Center so useful to the member countries that they will make it their own and be motivated to contribute to its revenues. This is terribly hard. It is one thing to partake of club goods (a subset of public goods that are excludable but are not rivalrous) when offered free, but quite another when a price is put on them. The free-rider problem indicates there may be an



M. Aslam Hayat, Senior Policy Fellow of LIRNEasia and Director of the Pacific ICT Regulatory Resource Centre

outlier who will feel like taking the benefits without paying the fees. Within a political science frame, it will be the problem of collective governance that will pose the greatest threat. It is extremely rare for 14 countries to have a successful governance arrangement for anything. The University of the South Pacific, which is collectively governed, gives us hope.

More-than-voice at the bottom of the pyramid

The proliferation of affordable mobile phones with an ever increasing feature set make the mobile phone an economically viable tool for more-than-voice-applications for business, entertainment, finance, health and more. In its 2008-2012 research cycle, LIRNEasia explored two aspects of more-than-voice applications: specific mobile applications in agriculture, health, payments and delivery of government services that are directly applicable to those at the bottom of the pyramid (BOP); and the policy and regulatory aspects that affect such applications, such as frequency use, spectrum management and mobile number portability.

Within this thematic focus, LIRNEasia together with the Pakistan Telecom Authority (PTA) co-hosted an expert forum in Islamabad, 26-27 April 2010. The event brought together researchers, regulators, policy makers, mobile network operators, representatives from government agencies and media from nine countries across the Asia-Pacific as well as Africa. The rich set of presentations and panel discussions provided an ideal platform for those in the mobile business to learn from the experiences of their counterparts in other countries.



Sardar Muhammad Latif Khan Khosa, Advisor to Prime Minister on IT, Pakistan, speaking at the Welcome session of Expert forum meeting on "Mobile 2.0 Applications and Conditions", 26-27 April, 2010, Islamabad.

Seated left to right: Syed Nasrul Karim Ghaznavi, Pakistan Telecommunication Authority; Rashid Khan, Mobilink, Pakistan; Rohan Samarajiva, LIRNEasia; Naguibullah Malik, Ministry of Information Technology & Telecom, Pakistan; Abdul Rauf Chaudhary, Cabinet Division, Government of Pakistan; Mohammed Yaseen, Pakistan Telecommunication Authority; Yaseen Anwar, State Bank of Pakistan; Khawar Siddique Khokhar, Pakistan Telecommunication Authority.

Case study highlights

The sessions started off by addressing prospective business applications including payment schemes. Sriganesh Lokanathan made a presentation on the potential of using mobile applications to reduce information search costs incurred by farmers. Harsha de Silva spoke on a ticketing application for buses in Sri Lanka using near-field communication devices. Mobile business on the whole cannot progress without financial transactions occurring over the mobile platform. Muriuki Mureithi (Summit Strategies, Kenya) and Aamir Ibrahim (Telenor, Pakistan) spoke of their experiences with mobile payment schemes mPesa and EasyPaisa respectively. In both instances the mPayment mechanisms were operator-driven. Perhaps the most significant achievement was the displacement of informal remittances.

Ayesha Zainudeen's research on CellBazaar, a mobile-based electronic marketplace operating in Bangladesh, was also presented. Its simplicity makes it possible for mobile users with basic handsets to exchange information on products and services. Puree Sirasontorn's study on an advertising-funded mobile community called myGamma projected the importance of content provision being separate from connectivity provision. Subhash Bhatnagar's study on mobile based pension schemes

highlighted the barriers faced when transitioning from a paper-based system. The CEO of Pakistan's universal service fund (USF), Pervez Ifthikar, shared the experiences one of the world's rare successes in universal service fund disbursements.

Over the subsequent sessions Helani Galpaya and Payal Malik's work on efficient spectrum management as well as Tahani Iqbal's and Rohan Samarajiva's research on mobile number portability were presented along with the case of Pakistan's implementation of MNP. The importance of quality of service experience (QoSE) was highlighted by Chanuka Wattegama who introduced the AT-Tester methodology for measuring QoSE, designed by IIT-Madras and LIRNEasia. Wasim Tauqir, Director General, Strategy and Development of the PTA spoke of his agency's multi-pronged approach to address mobile QoSE.

The event closed with a panel discussion on the future of Mobile 2.0. The potential is immense, but the right business and policy environment are essential if it is to be realized.

Project Manager: Chanuka Wattegama

Real-time bio-surveillance program (RTBP)

The early detection of potential adverse health events can help governments to avoid large, unexpected demands on the healthcare system. However in countries such as India and Sri Lanka, inefficient, century-old disease surveillance and notification systems often mean that aggregated information on the number of complaints of specific symptoms concentrated in particular geographic areas is not available to epidemiologists early enough for mitigation and prevention. The 2007-08 outbreak of leptospirosis (leading to over 300 deaths) in Sri Lanka and the 2009 outbreak of chikungunya in the southern parts of Tamil Nadu are just two examples of outbreaks that could have been avoided if timely, accurate information was available. The current disease surveillance systems also fail to report life-style or non-infectious diseases (e.g. diabetes, hypertension, asthma, and arthritis).

Real-time bio-surveillance program (RTBP) action research introduced modern information and communication technologies to health professionals in India and Sri Lanka. It investigated the potential of software programs to detect patterns in public health data; and mobile phones to collect case data and to disseminate health alerts for rapid response. Health workers digitized relevant clinical health records using the *mHealthSurvey* mobile phone software, epidemiologists analyzed them in near-real-time with the T-Cube web interface (TCWI) time series and spatial statistics software and disseminated the detected adverse events through the Sahana Alerting Broker (SABRO) to the healthcare workers' mobile phones. The formative RTBP evaluation involved a replication study and parallel cohort study with a selected set of medical facilities and health departments in the State of Tamil Nadu in India and the Wayamba Province in Sri Lanka.

Some of the challenges included the full digitization of patient information in high-throughput patient care environments (where a doctor sees over 100 patients a day), corrupt data that could lead to false predictions, and language barriers in the rural settings. If these challenges can be overcome, efficiencies in health event detection can be greatly improved, with a reduction in the cost of more than 40 percent, in addition to optimized allocation of medical resources and improved planning.

The media attention received by the project caught the attention of health administrators in India and Sri Lanka. This has resulted in a public private partnership to study an expansion of the project to a second district.

Project Director: Nuwan Waidyanatha



Nuwan Waidyanatha observing the way Sarvodaya Suwadana Center Volunteers enter patient case records into their mobile phones, April 2009, Kurunegala District, Sri Lanka.

Innovation needs a champion.

Ours was Dr. R.M.S.K. Ratnayake (Wayamba Provincial Director of Health Services), who took the Real-time bio-surveillance program (RTBP) to the next level. Dr. Ratnayake was willing to speak out on the shortcomings of Sri Lanka's current disease surveillance system. He was quick to realize the potential efficiency gains from the program, and the benefits that the rich digitized data could offer in terms of public health monitoring and planning.

The action-research results were presented to the National Epidemiology Unit, who were enthused by the new ICT-enabled comprehensive syndromic and disease surveillance paradigm. However, the Epidemiology Unit challenged the RTBP to prove its scalability beyond the twelve Kurunegala district pilot hospitals.

Dr. Ratnayake persuaded Dialog Axiata PLC's corporate social responsibility division to donate 50 mobile phones and to design an affordable service package for the program. Dialog does not wish to profit from this public service, but it will recover the donated mobile handset cost through the revenue generated from the monthly data service fees. The handsets will be replaced by Dialog every two years. Dr. Ratnayake also convinced the government to provide funds to cover the monthly mobile data collection costs. As a result, the RTBP has been expanded in to 48 district hospitals in the Wayamba Province.

Teleuse at the bottom of the pyramid (Teleuse@BOP4)

Emerging markets are leading global mobile growth. These markets contain the largest concentrations of poor people. As such, growth necessarily involves the bottom of the pyramid (BOP). Innovations in technology, business models and policy are required to serve the BOP. The foundation for all is deep insight into the growing demand for telecom services at the BOP.

Teleuse@BOP4 is the fourth in the “teleuse at the bottom of the pyramid” series of demand-side studies by LIRNEasia. Teleuse@BOP investigates cutting edge issues, while also tracking general trends. The results from Teleuse@BOP3 (2008) showed a high level of use of mobiles for work-related, business or financial purposes at the BOP, suggesting potential existed to transform lives and livelihoods at the BOP, especially in light of the many new “more-than-voice” applications that are emerging. These uses will be further explored in the current study, looking into the use of mobiles for making / saving money against the backdrop of emerging knowledge-based economies.

The study is being conducted in India, Bangladesh, Pakistan, Thailand, Sri Lanka and Indonesia (Java) using quantitative and qualitative methods. In a first stage, representative-sample surveys of ICT use by the BOP (10,000 BOP individuals surveyed in six countries) are being conducted. In addition, a further 1,000 micro-enterprises in the agriculture sector are being surveyed in India, Bangladesh, Sri Lanka and Thailand to add insight into the use and potential of ICTs within the sector. The fieldwork is being conducted for LIRNEasia by Hansa Research (India). The survey findings are expected in 2011 Q3.

In a second stage (late 2011) qualitative research through group discussions, mini-ethnographies, depth interviews, etc., will be conducted to better understand how those at the BOP use ICTs to enhance livelihoods, as well as the knowledge gaps and information flows within micro-enterprises.

Project Manager: Ayesha Zainudeen

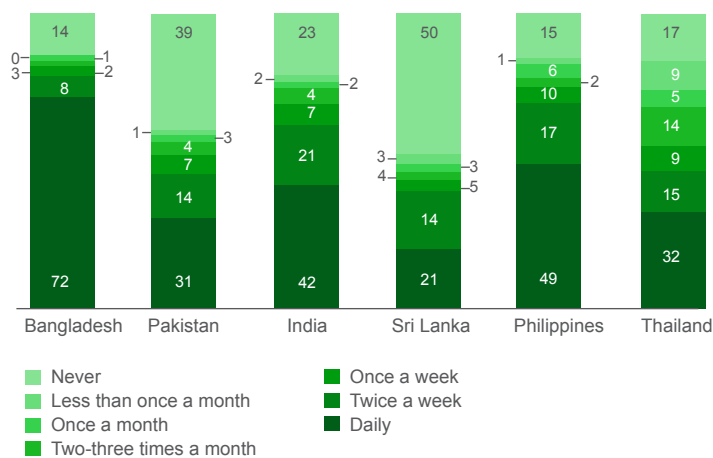


Figure 7: Use of the phone for financial, business or work-related purposes; (% of BOP mobile owners; 2008)

Source: Teleuse@BOP3 survey data

Capacity-building

Capacity-building is a central part of LIRNEasia's mission, with the aim of building "in-situ expertise" for ICT reform, regulation and policymaking in the Asia-Pacific. LIRNEasia's capacity-building activities thus include the conduct of the CPR*south* conference and associated tutorials for junior to mid-level scholars; regular teaching by researchers; provision of training-course scholarships; and provision of internship opportunities.

CPR*south*

CPR*south* is centered on an annual conference that develops capacity among up-and-coming ICT policy intellectuals in the Asia-Pacific for ICT policy and regulation. The fifth CPR*south* conference and tutorials were held in Xi'an, China, 4-8 December 2010. The event was hosted by the Xi'an University of Posts and Telecommunications, under the theme "Convergence: Infrastructure, services, policies." It was attended by 85 participants from 24 countries. In addition to seven paper sessions featuring 20 papers, the conference also featured panels examining donor and regional perspectives.

The CPR*south* tutorials which brought together 32 young scholars from 13 countries provided training in quantitative and qualitative research methods and communicating policy research. In addition the young scholars discussed research proposals with senior scholars.



Opening session at CPR*south*5, 4-8 December 2010, Xi'an, China.

Seated left to right: Lu Jianjun, Xi'an University of Posts and Telecommunications, China; Ma Sanhuan, Education Committee and Department of Shaanxi Provincial Government, China; Khaled Fourati, IDRC, Canada; Ashok Jhunjunwala, Indian Institute of Technology, Madras, India; Rohan Samarajiva, LIRNEasia; Chen Jinqiao, China Academy of Telecommunication Research; Dong Xiaolong, Xi'an University of Posts and Telecommunications, China.

Fruits of CPR*south* networking

Milagros Rivera, a founding Board member of CPR*south* and Chair of the Department of Communications and New Media of the National University of Singapore went on sabbatical leave, researching use of mobile networks by South African youth. Through CPR*south*, she had met Alison Gillwald of Research ICT Africa, who introduced her to Marion Walton from the Center for Film and Media Studies in the University of Cape Town.

This resulted in collaboration between Rivera and Walton on the research project, which examines mobile phone usage patterns

among economically disadvantaged black youth in a South African township. They interviewed 125 youth who are neither working nor enrolled in tertiary education.

According to Professor Rivera, "Dr. Alison Gillwald was the person who put me in touch with Dr. Walton. I thought of her after I was unable to find a collaborator with the University of Pretoria, University of Free State and University of Durban."

CPR*south* and Facebook

CPR*south*'s main activities are its annual conference and tutorials. Each conference brings together approximately 30 young scholars and 20 paper presenters who aspire to be policy intellectuals. The conference and tutorials give them a chance to interact and learn from each other, but what about interactions between conferences?

During CPR*south*1 and 2, the correspondence between participants was limited to group emails. While these were very active at the start, they fizzled out within weeks. This is when the administrators started a group on Facebook. The rationale being that most participants were already on Facebook. The group itself was not very active at the start. It was primarily used by the

administrators to make conference announcements and share other relevant information with members. However, the administrators started seeing increased interaction between the conference participants on a more informal and personal level in the form of comments on walls and photographs.

With time, the activity level of the group increased with members starting to seek information through the group. Others posted information they deemed were relevant to the community members. The first signs of a possible network of future scholars or policy intellectuals are emerging.

14th Executive course on telecom reform

LIRNE*Asia* provided 13 scholarships for senior to mid-level officials in regulatory agencies, media and civil society organizations to attend the 14th Executive course on telecom reform organized by Research ICT Africa and the University of Cape Town Graduate School of Business Management. The training course was held from 12-16 April 2010 in Cape Town, South Africa. Rohan Samarajiva and Helani Galpaya taught modules.

CPRafrica

Rohan Samarajiva and Helani Galpaya were invited to lecture and review papers at the inaugural CPRafrica conference and tutorials organized by Research ICT Africa. The first CPRafrica conference was held from 19-21 April 2010, Cape Town, South Africa. It included many features from CPR*south*, including a regional panel at which Helani Galpaya interrogated senior researchers from different regions on the commonalities and differences among the regions with respect to ICT policy and regulation.



CPRafrica, 19-21 April 2010, Cape Town, South Africa.
Seated left to right: Alison Gillwald, Research ICT Africa; William Melody, LIRNE.NET; Rohan Samarajiva, LIRNEasia

Young scholar tutorials and workshop on potential for Mobile 2.0 in emerging Asia

LIRNEasia, together with the Department of Communications and New Media, National University of Singapore, organized a tutorial for young scholars combined with a workshop on the potential for more-than-voice in emerging Asia on 21-22 June 2010 in Singapore. The event consisted of tutorials on communication policy research for the young scholars as well as presentations on LIRNEasia's more-than-voice research. Over 72 young scholar applications were received from 18 countries, of which 13 were selected. Ten were from civil society and academic institutions, while two were from regulatory agencies and one was from a media organization. The selected young scholars were given the opportunity to attend the 2010 International Communication Association (ICA) conference held in Singapore, 22-26 June 2010, with accommodation provided for the duration of the ICA conference and registration fees covered.



Young scholar tutorials, June 2010, Singapore

Internships

Juhee Kang, a PhD student in media and information studies at Michigan State University joined LIRNEasia in January 2011 for a six month internship.



Q: How did you hear about our internship?

A: I came to know about LIRNEasia through their academic publications. Then I participated in the young scholar tutorials and workshop in Singapore in 2010, and heard of the internship opportunity.

Q: What made you apply for the internship?

A: At the workshop, I was very excited to learn about their knowledge-based economies and Teleuse@BOP projects. It was clearly in line with my research interests and I couldn't wait to get more involved.

Q: What did you do during your internship?

A: I worked on two academic papers with LIRNEasia researchers that became journal articles, participated in designing the 4th round of the Teleuse@BOP survey, and conducted research on universal service policy in Asian countries. It was a busy six months!

Q: How did you find your internship?

A: Although I have lived in many other countries before, I was a little nervous before I came to Sri Lanka. However, everything worked out well – people at work were very friendly and fun, and the work was exciting. Also, fieldwork and travel in Sri Lanka were unforgettable experiences.

Q: What is your overall impression on LIRNEasia?

A: LIRNEasia is a terrific group. It's a dynamic and lean organization with highly motivated young researchers. I am so happy to be a part of the family!

Juhee is now back in the US but will continue to work with LIRNEasia on various projects.

Advocacy and dissemination

Systematic attention to moving research findings to policy and regulatory practice has been a signature of LIRNEasia's work. Key to our approach has been the development and implementation of project-specific communication strategies, flexibly and opportunistically. It has also sought to break out of the straitjacket of project funding, by intervening on topics whenever policy windows open.

Rapid response

Based on the idea of the teachable moment, LIRNEasia responds quickly to specific requests for advice by governments or other entities in the region. The response primarily takes the form of (a) a written submission (e.g., to a public consultation or to media); or (b) a country visit that includes one or more presentations. This year, the following rapid response interventions were made:

■ Payal Malik (Senior Research Fellow) participated at a seminar on “Interconnection in Mexico” at DIRSI’s (Regional Dialog on the Information Society) request, in October 2010 in Mexico City addressing urgent interconnection issues. The seminar was organized by the Centro de Investigación y Docencia Económicas, A.C. (CIDE/Mexico) and the Telecommunications Research Program (Telecom-CIDE). The seminar was attended by a select group of government, academic and civil society representatives. She made a presentation at the event, and also wrote an article based on the intervention which has been posted on the CIDE website and submitted for publication in India.

■ Dilini Wijeweera (Research Fellow and Knowledge Management Specialist) advised the Bhutan Info Comm and Media Authority (BICMA) on improving organizational performance and aligning physical facilities to improved organizational performance between October 2010 and February 2011.

■ Rohan Samarajiva (Chair and CEO) wrote an op-ed piece on the proposed establishment of 3G network(s) in Bangladesh in December 2010. Bangladesh was considering the issuance of 3G frequencies. The idea establishing a single 3G network that multiple operators would jointly own and use had been proposed by the CEO of Banglalink. In the op-ed piece, he explained why this was a theoretically good, but practically bad idea. The article was published in the Daily Star of Bangladesh in December 2010.

■ Harsha de Silva (Consultant Lead Economist) made a submission in response to the Bangladesh Telecommunication Regulatory Commission’s (BTRC’s) call for comments on draft guidelines on renewal of mobile licenses in Bangladesh in February 2011. The submission focused on economic efficiency, transparency and good governance. The guidelines proposed a license renewal fee of BDT 100 million from each operator. An additional fee of BDT 1.5 billion per MHz in the GSM 1800 and CDMA bands and BDT 3 billion per MHz in the GSM 900 band. Harsha questioned the arbitrary justifications for the fees. In a follow-up to this intervention, Harsha wrote an op-ed piece which was published in the Daily Star of Bangladesh in June 2011.

Values, regulatory performance and architecture in the Land of the Thunder Dragon

Ten years ago, Rohan Samarajiva spent time in Bhutan helping the government lay the foundation for the telecom regulator, Bhutan Info Comm and Media Authority (BICMA). The recommendations were followed, for the most part. Above-the-norm results for a low-income, mountainous and landlocked micro state were achieved in a short time, as shown by Figure 8, where the bubble sizes denote population.

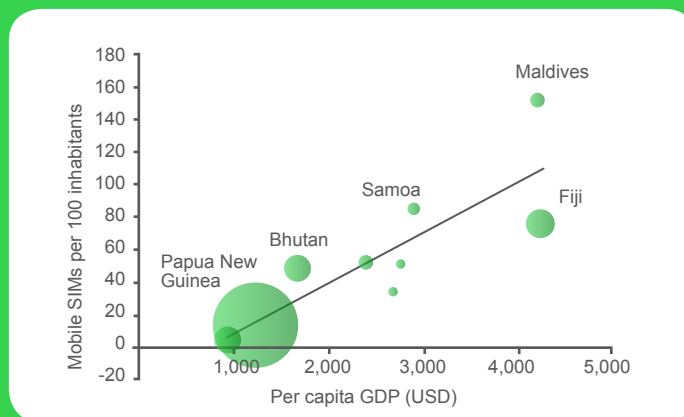


Figure 8: Bhutan, compared with micro states LIRNEasia will work in (data for 2009)

When LIRNEasia was told that the BICMA was considering a new building, the first question was whether an organizational overhaul would contribute to a new design. The end result was that LIRNEasia Research Fellow and Knowledge Management Specialist Dilini Wijeweera (who is also an architect) went to Bhutan for three weeks to recommend organizational changes and related design parameters for the building.

This was brand new territory for LIRNEasia and for BICMA. But Dilini did a great job. The design parameters recently issued by BICMA were qualitatively improved as a result: the office space will be conducive to cross-divisional collaboration. Most importantly, a conversation has been initiated within BICMA on organizational changes driven by commonly held values. Instead of the conventional approach of recommending the emulation of best practices or the acceptance of principles developed by others, Dilini worked from the inside out, identifying the core values of the staff and suggesting organizational design principles based on how they are operationalized in daily practice. In this assignment, our researcher synthesized knowledge from architecture, knowledge management and organizational theory, as well as telecom policy and regulation.

Most national regulatory agencies were established in the late 1990s. They are now 10+ years old. They were not perfect when they started, but at least they were malleable. By now, many are sclerotic. The reboot option tempts, but is not realistic. The solution appears to be something on the lines of what was initiated in Bhutan. Of course it is still too early to see if the redesign process catches, but from what we saw during the dissemination visit in May 2011, the prospects are good.

Media coverage

Media are indirect means of reaching LIRNEasia's target audiences (policymakers, regulators and industry leaders). Below is selected media coverage of LIRNEasia activities over the financial year, 2010-11. In total, LIRNEasia projects received 330 mentions in print, online, TV and radio media, including the internationally-acclaimed *Economist* and *TIME* magazines. For the full list from 2004 to date (including web links, where applicable), please visit <http://lirneasia.net/about/media-coverage/>.

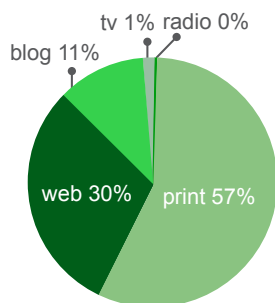


Figure 9: Media coverage received by media type (% of coverage received), 2010-11

Mobile phone for sending remittance

The Independent (Bangladesh), 9 April 2010

PTA's expert meeting on "Mobile 2.0 applications, conditions" concludes

Daily Business Recorder (Pakistan), 28 April 2010

Cell phone use yet to pick up in third world in absence of non-voice services

The Financial Express (Bangladesh), 3 May 2010

Mobile 2.0 applications and conditions for emerging telecom markets

State of Telecom Industry in Pakistan (Pakistan), 3 May 2010

Mobile phones offer hope to "bottom of the pyramid"

The Bangkok Post (Thailand), 12 May 2010

Two-thirds of poor in Lanka own phones

Asian Tribune, 29 May 2010

Sacred cows and orbital dreams in Sri Lanka

Groundviews (Sri Lanka), 16 June 2010

Mobile payments solution to benefit the poor: Study

The Daily Star (Bangladesh), 24 June 2010

Pilot study in using mobile technology for disease reporting shows promise

The Hindu (India), 7 July 2010

SL broadband: Long way to go

Voice & Data (India), 5 August 2010

Mobiles on health call: Real-time bio-surveillance using mobiles

The Hindu Business Line (India), 13 September 2010

Mobile payments: Central Bank guidelines should not kill innovations

The Sunday Times (Sri Lanka), 15 September 2010

Low, uniform telecom tariff within SAARC key to regional ties

Yahoo News India (India), 26 September 2010

Mobile phones can help fight against poverty, UNCTAD report urges governments (in Tamil)

Daily Virakesari (Sri Lanka), 29 October 2010

Telecom changing the face of Bangladesh

The Himalayan (Nepal), 13 November 2010

LIRNEasia broadband quality survey

Zee TV (India), 5 December 2010

Broadband cheap in India, but quality poor

The Financial Chronicle (India), 8 December 2010

War of words escalates in India's telecom scandal

TIME (USA), 14 December 2010

ISPs fail to deliver what they advertise

The Times of India (India), 14 January 2011

MNP not to show much impact on telecom operators: Study

The Economic Times (India), 26 January 2011

MNP not to show much impact on telecom operators: Study

NDTV Profit (India), 26 January 2011

Not just talk

The Economist, 27 January 2011

Interview with Sriganesh Lokanathan on the AgInfo project

Channel One (MTV): Biz 1st (Sri Lanka), 4 February 2011

Interview on the Japanese Tsunami

Ran FM (Sri Lanka), 14 March 2011

Tsunami detection improves

Asia Sentinel (Hong Kong), 18 March 2011

Lessons from Japan's tsunami warning system

The Hindustan Times (India), 19 March 2011

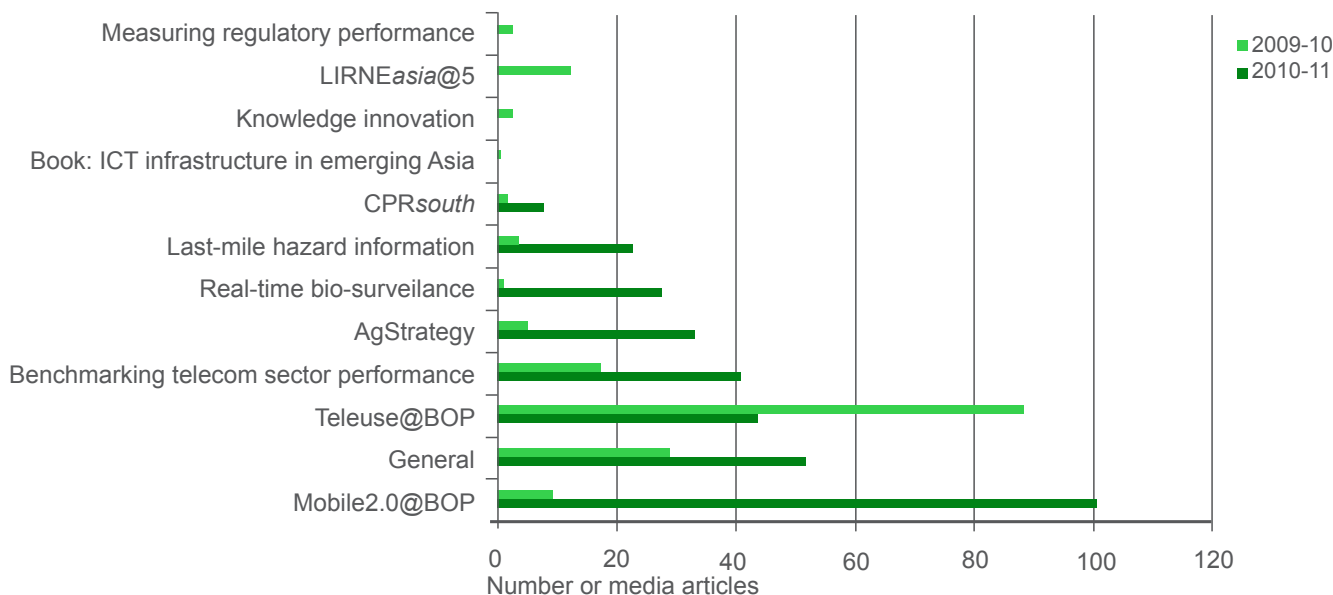


Figure 10: Media coverage received (print, web/blog, TV or radio) by research theme in 2009-10 and 2010-11.

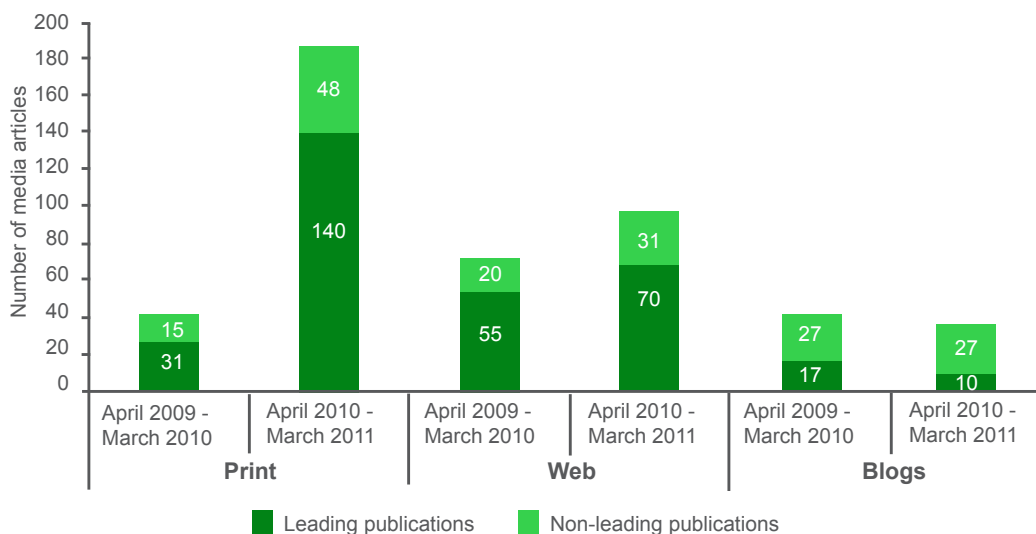


Figure 11: Media coverage by leading vs. non-leading publications. Print media were differentiated as leading and not, based on informed opinions of researchers from the countries we work in. Web and blog media were classified based on Alexa (<http://www.alexa.com/>) rankings: ranks from 1 to 200,000 were considered as leading.

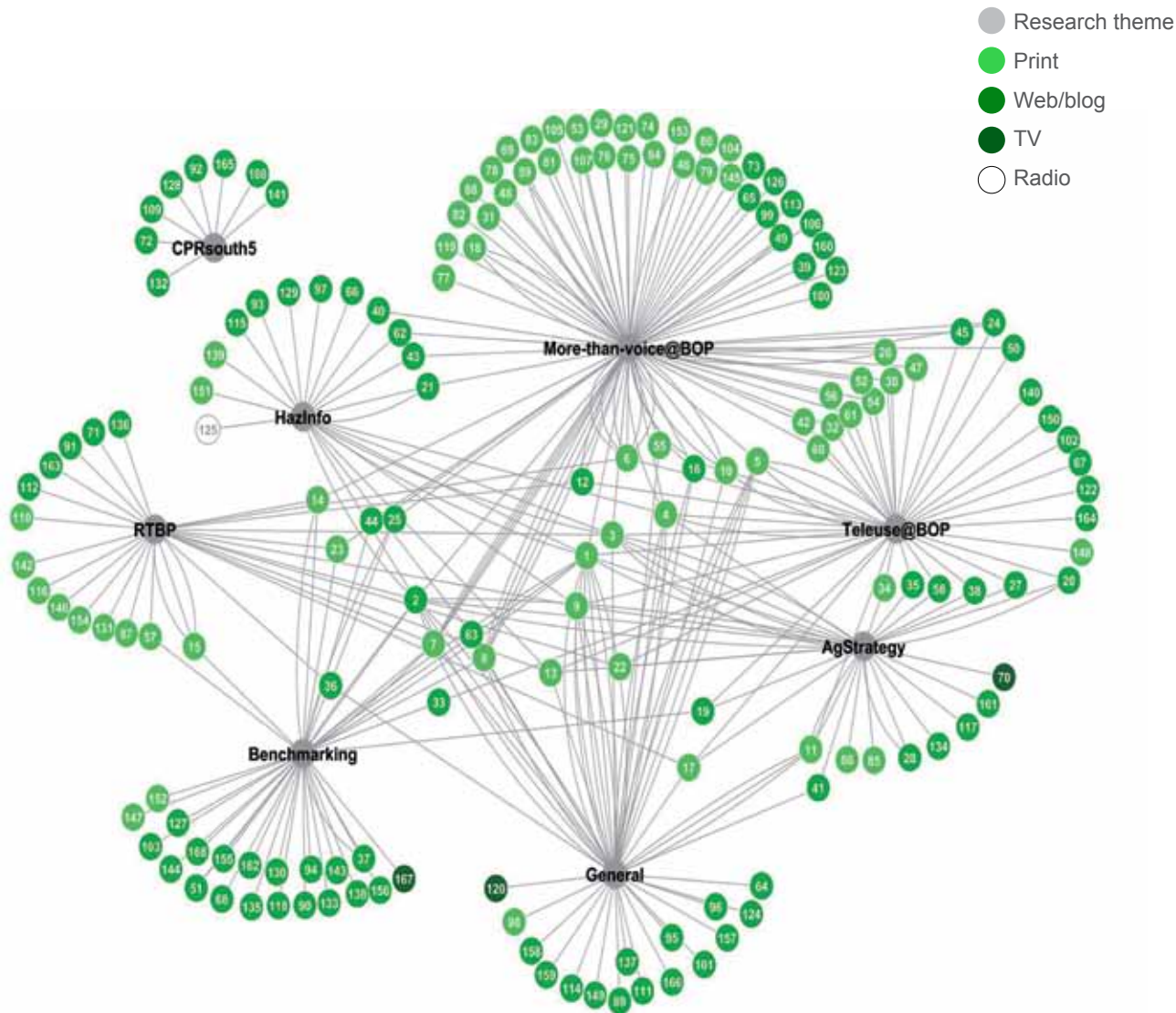


Figure 12: Media coverage received by research theme, 2010-11. The grey subject nodes indicate research themes. Each line extending from the subject node indicates coverage (print, web/blog, TV or radio). Each number represents a different publication (see Table 2 for a numbered list of publishers).

Credit: Cytoscape, <http://www.cytoscape.org/>

Table 2: Media that carried LIRNEasia stories, 2010-11

| ID | Publication, ranked by frequency | Location |
|----|--|-----------------|
| 1 | The Daily Mirror | Sri Lanka |
| 2 | Lanka Business Online | Sri Lanka |
| 3 | Daily Financial Times | Sri Lanka |
| 4 | The Sunday Times | Sri Lanka |
| 5 | The Daily Star | Bangladesh |
| 6 | The Hindu Business Line | India |
| 7 | Voice & Data | India |
| 8 | The Bangkok Post | Thailand |
| 9 | The Daily News | Sri Lanka |
| 10 | The Financial Express | Bangladesh |
| 11 | The Island | Sri Lanka |
| 12 | State of Telecom Industry in Pakistan | Pakistan |
| 13 | The Sunday Leader | Sri Lanka |
| 14 | The Financial Chronicle | India |
| 15 | The Hindu | India |
| 16 | The Independent | Bangladesh |
| 17 | The Nation (The Bottom Line) | Sri Lanka |
| 18 | Cnews | Bangladesh |
| 19 | IDRC | Canada |
| 20 | Invest Sri Lanka | Sri Lanka |
| 21 | R&D Magazine | International |
| 22 | The Sunday Observer | Sri Lanka |
| 23 | The Times of India | India |
| 24 | UK BD news | Bangladesh |
| 25 | Yahoo India | India |
| 26 | Daily Dawn | Pakistan |
| 27 | Azhar Razak | Sri Lanka |
| 28 | Building Livelihood Resilience in Changing Climate | India |
| 29 | Daily Asas | Pakistan |
| 30 | Daily Business Recorder | Pakistan |
| 31 | Daily Express | Pakistan |
| 32 | Daily Pakistan Observer | Pakistan |
| 33 | DIRSI (via YouTube) | Peru |
| 34 | Divaina | Sri Lanka |
| 35 | Express Business | Sri Lanka |
| 36 | Fast Company | International |
| 37 | India Report | India |
| 38 | Lanka Business News | Sri Lanka |
| 39 | NDTV.com | India |
| 40 | News Blaze | International |
| 41 | new SriLanka | Sri Lanka |
| 42 | Noakhali Web | Bangladesh |
| 43 | PhysOrg.com | International |
| 44 | Press Trust of India | India |
| 45 | Pro Pakistani | Pakistan |
| 46 | Prothom Alo | Bangladesh |
| 47 | Samakal | Bangladesh |
| 48 | Sangbad | Bangladesh |
| 49 | Tech Zoom | Bangladesh |
| 50 | Telecom News Bulletin | Pakistan |
| 51 | Telecompaper | The Netherlands |
| 52 | The Daily Inqilab | Bangladesh |
| 53 | The Daily Ittefaq | Bangladesh |
| 54 | The Daily Times | Pakistan |
| 55 | The Economic Times | India |
| 56 | The Editor | Bangladesh |
| 57 | The Financial Express India | India |
| 58 | The Living Labs Global Mobility Report | Denmark |
| 59 | The New Nation | Bangladesh |
| 60 | The Patriot | Pakistan |
| 61 | Thinking Aloud Magazine | India |
| 62 | TMCnet.com | International |
| 63 | Tops.lk | Sri Lanka |
| 64 | Adaderana | Sri Lanka |
| 65 | APEC Digital Opportunity Center | International |
| 66 | Asia Sentinel | Hong Kong |
| 67 | Asian Tribune | International |
| 68 | Bangladesh ICT News | Bangladesh |
| 69 | Business Standard | India |
| 70 | Channel One (MTV): Biz 1st | Sri Lanka |
| 71 | Chennai Online | India |
| 72 | China Education Daily | China |
| 73 | Chowk Yadgar: News and stories about Pakistan | Pakistan |
| 74 | Computer Barta | Bangladesh |
| 75 | Daily Aajkal | Pakistan |
| 76 | Daily Al-Akhbar | Pakistan |
| 77 | Daily Azkaar | Pakistan |
| 78 | Daily Din | Pakistan |
| 79 | Daily Jinnah | Pakistan |
| 80 | Daily Khabrain | Pakistan |
| 81 | Daily Mashriq | Pakistan |
| 82 | Daily Nawa-I-waqat | Pakistan |
| 83 | Daily Pakistan | Pakistan |
| 84 | Daily the Post | Pakistan |
| 85 | Daily Thinakkural | Sri Lanka |
| 86 | Daily Virakesari | Sri Lanka |
| 87 | Dinamina | Sri Lanka |
| 88 | E-Biz | Bangladesh |

| | | |
|-----|---|---------------|
| 89 | Events in time | International |
| 90 | EXAME.com | Brazil |
| 91 | Express Buzz | Sri Lanka |
| 92 | Fei Xiang Network | China |
| 93 | Free Malaysia today | Malaysia |
| 94 | GovernanceNow.com | India |
| 95 | Groundviews | Sri Lanka |
| 96 | Hawker | Bangladesh |
| 97 | HighBeam Research | International |
| 98 | Himal South Asian | Nepal |
| 99 | Hindustan Times | India |
| 100 | IBN Live | India |
| 101 | IKM@CTD-2010 | International |
| 102 | Inclusive Business Asia | International |
| 103 | Indian DTH | India |
| 104 | Irudina | Sri Lanka |
| 105 | iStockAnalyst | International |
| 106 | Jagdish Hathiramani's Portfolio | Sri Lanka |
| 107 | Jajjaiden | Bangladesh |
| 108 | Jinti.com | China |
| 109 | k666 Communications | China |
| 110 | Lakbima News | Sri Lanka |
| 111 | Lanka Business Talk | Sri Lanka |
| 112 | Marc Ellison- Photojournalist | Canada |
| 113 | Maximizing progress | International |
| 114 | Media Change & Innovation | Switzerland |
| 115 | Mims's Bits | International |
| 116 | Mint | India |
| 117 | Mmd4d | International |
| 118 | MSN India | India |
| 119 | Naya Diganta | Bangladesh |
| 120 | NDTV | India |
| 121 | New Age | Bangladesh |
| 122 | Pak Galaxy - Information & Telecom News | Pakistan |
| 123 | Pakistan Telecommunication Authority | Pakistan |
| 124 | Priyo | Bangladesh |
| 125 | Ran FM | Sri Lanka |
| 126 | Roboexpress | International |
| 127 | SaveOnDish | India |
| 128 | Shaanxi Daily News | China |
| 129 | Shan Herald | International |
| 130 | Silicon India News | India |
| 131 | Silumina | Sri Lanka |
| 132 | Sohu News | China |
| 133 | South Asia Blog | Bangladesh |
| 134 | StayingLive (via YouTube) | International |
| 135 | TaxGuru.in | India |
| 136 | TeaBreak | Pakistan |

| | | |
|-----|-------------------------------------|---------------|
| 137 | Techgoss | India |
| 138 | Technology News and Gadgets Updates | International |
| 139 | Technology Review | International |
| 140 | Technology Times: Pakistan | Pakistan |
| 141 | Telecologist | Pakistan |
| 142 | Telecom Live Magazine | India |
| 143 | Telecom Yatra | India |
| 144 | Telegucolours | International |
| 145 | The Daily Jugantor | Bangladesh |
| 146 | The Deccan Chronicle | India |
| 147 | The Deccan Herald | India |
| 148 | The Economist | International |
| 149 | The Global Herald | International |
| 150 | The Himalayan | Nepal |
| 151 | The Hindustan Times | India |
| 152 | The Indian Express | India |
| 153 | The Nation, Islamabad | Pakistan |
| 154 | The New Indian Express | India |
| 155 | The Sentinel | India |
| 156 | The Smart Techie | International |
| 157 | Thuppahi Blog | Australia |
| 158 | TIME | USA |
| 159 | University World News | International |
| 160 | UnnayanNews | International |
| 161 | Vimasuma | Sri Lanka |
| 162 | VisionWiz | International |
| 163 | Waidy's Spot-on Blogs | China |
| 164 | Worldnews | International |
| 165 | XUPT News | China |
| 166 | Yahoo | International |
| 167 | Zee Business | India |
| 168 | Zee News | India |

LIRNEasia research papers on SSRN

Since January 2010, 47 LIRNEasia research papers and reports have been uploaded to the Social Science Research Network, extending LIRNEasia's presence on the Web. From the downloaded numbers it appears that papers addressing more-than-voice services are the most popular.

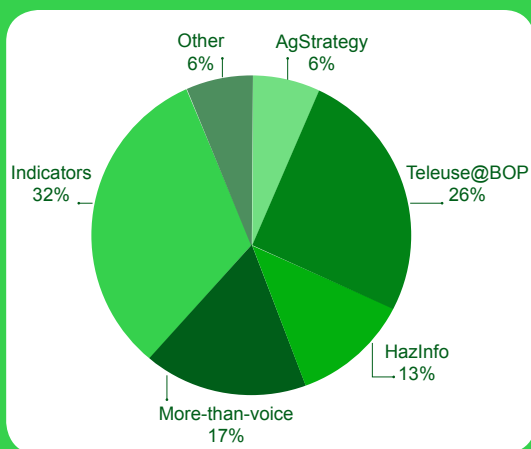


Figure 13: Number of LIRNEasia papers on SSRN by subject area as at 30 July 2011

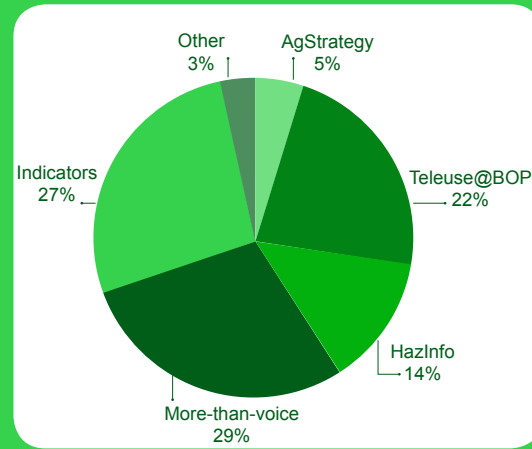


Figure 14: Number of downloads of LIRNEasia papers by subject area as at 30 July 2011

Conferences and workshops

Below is a selected list of conferences and workshops at which LIRNEasia research has been disseminated.

CPRafrica

Organized by Research ICT Africa
19- 21 April 2010, Cape Town, South Africa

Expert Forum Meeting on “Mobile 2.0 Applications and Conditions”

Organized by LIRNEasia in association with the Pakistan Telecommunication Authority
26-27 April 2010, Islamabad, Pakistan

ACORN-REDECOM Conference 2010

14-15 May 2010. Brazilia, Brazil

Pandemic Preparedness Forum

Organized by the UN System Influenza Coordination body (UNSIC)
10 June 2010, Bangkok, Thailand

LIRNEasia Young Scholar Tutorials and Workshop on potential for Mobile2.0 in emerging Asia

Organized by LIRNEasia and the Department of Communications and New Media, National University of Singapore
21-22 June 2010, Singapore

International Communication Association Conference 2010

22-26 June 2010, Singapore

International Telecommunications Society (ITS) Biennial and Silver Anniversary Conference

27-30 June 2010. Tokyo, Japan

Launch of National Competency Standards for Municipal Solid Waste Operation Assistants

Organized by LIRNEasia
29 June 2010, Colombo, Sri Lanka

APT Policy and Regulatory Forum and Business Dialogue

14-16 July 2010, Yogyakarta, Indonesia

International Seminar on Information and Communication Technology Statistics

Organized by the United Nations Statistics Division (UNSD), the United Nations Conference on Trade and Development (UNCTAD), the International Telecommunication Union (ITU) and the Statistical Office of the Republic of Korea (Statistics Korea) in cooperation with the Partnership on Measuring ICT for Development
19-21 July 2010, Seoul, Korea

International Fund for Agricultural Development (IFAD) Annual Portfolio Review of the Asia-Pacific Division

1-3 November 2010, Nanning, China

Telecommunications in Latin America: Persistent Gaps, Commitments and Opportunities

Organized by Dialogue on the Information Society
20 November 2010, Lima, Peru

ESCAP Committee on Information and Communications Technology (CICT) Expert Group Meeting

24-26 November 2010, Bangkok, Thailand

8th World Telecommunication / ICT Indicators meeting

Organized by the International Telecommunications Union (ITU)
24-26 November 2010, Geneva, Switzerland

CPRsouth5: Convergence: Infrastructure, Services, Policies

6-8 December 2010, Xi'an, China

ICTD 2010

Organized by Royal Holloway University of London
13-16 December 2010, London, England

34th Governing Council meeting of the International Fund for Agricultural Development (IFAD)

19-20 February 2011, Rome, Italy

12th South Asian Telecommunications Regulators' Council (SATRC) Meeting

27 February-1 March 2011, Tehran, Iran

LIRNEasia Consultant Lead Economist at IFAD Governing Council Meeting

Harsha de Silva LIRNEasia's Consultant Lead Economist, was among the invited speakers at the 34th Governing Council meeting of the International Fund for Agricultural Development. Held at IFAD headquarters in Rome, Italy in February 2011, the meeting drew delegates from 167 member states.

High-ranking government officials and emerging leaders spoke on various topics from ensuring food security to invigorating smallholder farming and supporting and encouraging rural youth. Harsha spoke on the need to improve the quality of life for young rural people and emphasized the need to improve the efficiency of rural agricultural and financial markets to fight rural poverty.

LIRNEasia CEO at SATRC Meeting

LIRNEasia CEO Rohan Samarajiva, was invited to speak at the 12th South Asian Telecommunications Regulators' Council (SATRC) Meeting in Tehran, Iran. He made presentations on intra-South Asian Association for Regional Cooperation (SAARC) roaming charges and broadband quality of service in the Asian region.

LIRNEasia has been involved in broadband quality of service testing in the Asian region. The most recent tests using AT-tester, a diagnostic tool developed by IIT-Madras and LIRNEasia, were conducted in October 2010.

Rohan showed that delivered speeds with the local domain were above those advertised, but the opposite was true in the international domain. Furthermore, broadband services in Asia offer lower value for money than in North America, due to high international backhaul costs.

The inaugural conference of the SATRC was held in Colombo in April 1998, hosted by the Telecommunications Regulatory Commission of Sri Lanka, then headed by Rohan Samarajiva. At present, SATRC has nine members: Afghanistan, Bangladesh, Bhutan, India, Iran, Maldives, Nepal, Pakistan and Sri Lanka.



Research outputs

Below are book chapters and journal articles by LIRNEasia researchers in the 2010-11 financial year. For conference papers and other research papers, please visit <http://lirneasia.net/about/annual-reports/2010-2011/>

Book chapters and journal articles

Alampay, E. & Bala, G. (2010). M-money for the BOP in the Philippines. *Information Technology and International Development*, 6(4), 77-92.

de Silva, H. & Ratnadiwakara, D. (2010). ICT policy based on a transaction cost approach: Some lessons from Sri Lanka. *International Journal of ICT Research and Development in Africa*, 1(1), 51-64.

Ganesan, M., Prashant, S., Janakiraman, N. & Waidyanatha, N. (2011). Real-Time Bio-Surveillance Program: Field Experiences from Tamil Nadu, India. In U.V. Somayajulu, C.P. Prakasam, N. Audinarayana, & K.E. Vaidyanathan (Eds.), *Health, poverty and human development: Perspectives and issues* (p. 367-382). Mumbai: Indian Association for Social Sciences and Health.

Gow, G. & Waidyanatha, N. (2011). Mobile phones and the challenge of sustainable early warning systems. In J. Katz (Eds.), *Mobile communication: Dimensions of social policy* (p. 63-74). New Brunswick, NJ: Transaction Publishers.

Lokanathan, S., de Silva, H., & Fernando, I. (2011). Price transparency in agriculture produce markets: Sri Lanka. In D.J. Grimshaw & S. Kala (Eds.), *Strengthening rural livelihoods: The impact of information and communication technologies in Asia* (p. 15-32). Ottawa: IDRC

Samarajiva, R. (2010). Enhancing the status of Colombo as a regional container shipping hub. *Economic Review (People's Bank)*, 37(3&4), 10-13.

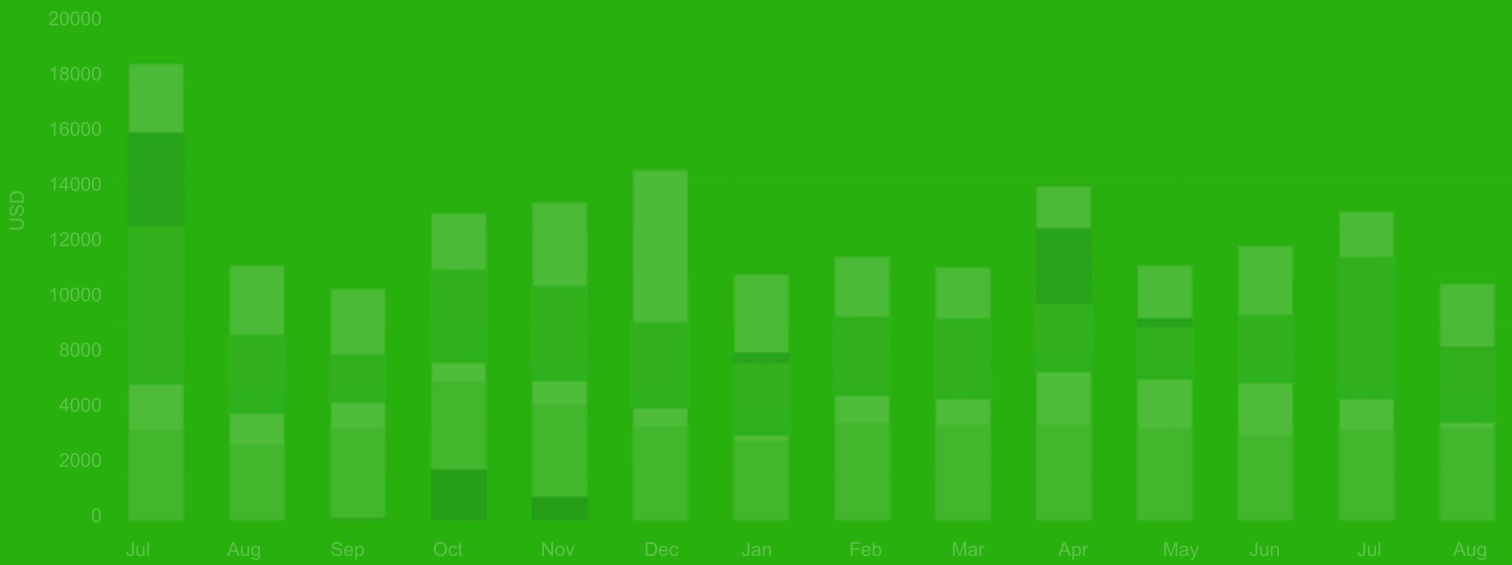
Samarajiva, R. (2010). Leveraging the budget telecom network business model to bring broadband to the people, *Information Technology and International Development*, 6, Special Edition, 93-97.

Waidyanatha, N. & Dekker, S. (2011). The RTBP: Collective intelligence driving health for the users. *International Journal of User-Driven Healthcare*, 1(2), 56-64.

Waidyanatha, N., Dubrawski, A., Ganesan, M., & Gow, G. (2011). Affordable system for rapid detection and mitigation of emerging diseases. *International Journal of E-Health and Medical Communications*, 2(1), 73-90.

Wattegama, C. & Kapugama, N. (2011). Volunteer computing model prospects in performance data gathering for broadband policy formulation. *Communication & Strategies*, 81, 153-174.

Zainudeen, A., Iqbal, T., & Samarajiva, R. (2010). Who's got the phone? Gender and the use of the telephone at the bottom of the pyramid. *New Media and Society*, 12, 549-66.



Financial Statements



Report of the auditors

To the members of LIRNEasia

Report on the financial statements

We have audited the accompanying financial statements of LIRNEasia, which comprise the balance sheet as at 31 March 2011, the income statement for the year then ended and a summary of significant accounting policies and other explanatory notes.

Management's responsibility for the financial statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with Sri Lanka Accounting Standards. This responsibility includes: designing, implementing and maintaining internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error; selecting and applying appropriate accounting policies; and making accounting estimates that are reasonable in the circumstances.

Scope of audit and basis of opinion

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with Sri Lanka Auditing Standards. Those standards require that we plan and perform the audit to obtain reasonable assurance whether the financial statements are free from material misstatement.

An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation.

We have obtained all the information and explanations which to the best of our knowledge and belief were necessary for the purposes of our audit. We therefore believe that our audit provides a reasonable basis for our opinion.

Opinion

In our opinion, so far as appears from our examination, the Association maintained proper accounting records for the year ended 31 March 2011 and the financial statements give a true and fair view of the Association's state of affairs as at 31 March 2011 and its result for the year then ended in accordance with Sri Lanka Accounting Standards.

Sgd.

Wijeyeratne & Company
CHARTERED ACCOUNTANTS
Colombo
20 July 2011

Statement of income

Year ended 31 March

| | Notes | 2011 LKR | 2010 LKR |
|------------------------------|-------|--------------|--------------|
| Turnover | 5 | 19,539,658 | 26,125,682 |
| Other income | 6 | 89,862 | 719,361 |
| | | 19,629,520 | 26,845,044 |
| Administration expenses | | (18,689,275) | (25,529,732) |
| Profit from operations | 7 | 940,245 | 1,315,311 |
| Finance cost | | (905,648) | (1,171,321) |
| Profit before taxation | | 34,597 | 143,991 |
| Taxation | 8 | (250,087) | (433,845) |
| Loss / profit after taxation | | (215,490) | (289,854) |

Balance sheet As at 31 March

| | Notes | 2011 LKR | 2010 LKR |
|-------------------------------------|-------|--------------------------|--------------------------|
| Assets | | | |
| Non-current assets | | | |
| Property, plant and equipment | 9 | 4,709,122 | 6,642,425 |
| Term deposit | 10 | | 7,807,659 |
| | | <u>4,709,122</u> | <u>14,450,084</u> |
| Current assets | | | |
| Trade and other receivables | | 4,184,053 | 5,240,817 |
| Cash and bank balances | | 39,154,539 | 11,066,294 |
| | | <u>43,338,592</u> | <u>16,307,111</u> |
| Total assets | | <u>48,047,714</u> | <u>30,757,195</u> |
| Equity and liabilities | | | |
| Reserves | | | |
| Profit and loss account | | (8,761) | 206,729 |
| | | <u>(8,761)</u> | <u>206,729</u> |
| Non-current liabilities | | | |
| Projects | 11 | 38,129,050 | 18,945,026 |
| Retirement benefit obligation | 12 | 1,250,851 | 946,711 |
| | | <u>39,379,901</u> | <u>19,891,737</u> |
| Current liabilities | | | |
| Trade and other payables | | 8,011,774 | 7,949,693 |
| Provisions for taxation | | 250,087 | 406,603 |
| Bank overdraft | | 414,713 | 2,302,434 |
| | | <u>8,676,575</u> | <u>10,658,729</u> |
| Total equity and liabilities | | <u>48,047,714</u> | <u>30,757,195</u> |

Signed on behalf of the board of directors:

Directors: Sgd.
Rohan Samarajiva
Chair and CEO

Sgd.
Luxman Siriwardena
Director

Cash flow statement Year ended 31 March

| | 2011 | 2010 |
|---|--------------------------|-------------------------|
| | LKR | LKR |
| Cash flow from operating activities | | |
| Net profit before taxation | 34,597 | 143,991 |
| Adjustment for | | |
| Depreciation | 2,674,112 | 2,648,510 |
| Gratuity provision | 304,140 | 946,711 |
| Profit from sale of property, plant and equipment | (72,755) | (67,614) |
| Cash generated from operating activities before working capital changes | <u>2,940,094</u> | <u>3,671,598</u> |
| Increase / decrease in working capital | | |
| Trade and other receivables | 1,056,762 | (2,313,501) |
| Trade and other payables | 62,081 | (20,778,469) |
| Cash generated from / (used in) operating activities | 4,058,937 | (19,420,372) |
| Tax paid | (406,603) | (82,413) |
| Cash flow from investing activities | | |
| Purchase of property, plant and equipment | (775,324) | (6,851,067) |
| Purchase of investment | 7,807,659 | 16,415,361 |
| Proceeds from sale of property, plant and equipment | 107,271 | 88,230 |
| | <u>10,791,940</u> | <u>(9,850,261)</u> |
| Cash flow from financing activities | | |
| Funds received from project | 19,184,025 | (24,140,735) |
| Net (decrease) / increase in cash and cash equivalents | 29,975,965 | (33,990,996) |
| Cash and cash equivalents at the beginning of the year | <u>8,763,861</u> | <u>42,754,857</u> |
| Cash and cash equivalents at the end of the year (Note A) | <u><u>38,739,826</u></u> | <u><u>8,763,861</u></u> |

Cash flow statement (cont.) Year ended 31 March**Note A**

| | 2011 | 2010 |
|--|-------------------|------------------|
| Cash and cash equivalents at the end of the year | | |
| Bank and cash balance | 39,154,539 | 11,066,294 |
| Bank overdraft | (414,713) | (2,302,434) |
| | <hr/> | <hr/> |
| | 38,739,826 | 8,763,860 |
| | <hr/> <hr/> | <hr/> <hr/> |

Statement of changes in equity Year ended 31 March

| | Profit and loss account LKR | Total LKR |
|-----------------------------|---------------------------------------|---------------------|
| <hr/> | | |
| Balance as at 1 April 2009 | 496,583 | 496,583 |
| Net profit for the year | (289,854) | (289,854) |
| | <hr/> | <hr/> |
| Balance as at 1 April 2010 | 206,729 | 206,729 |
| Net loss for the year | (215,490) | (215,490) |
| | <hr/> | <hr/> |
| Balance as at 31 March 2011 | (8,761) | (8,761) |
| | <hr/> <hr/> | <hr/> <hr/> |

Notes to the financial statements Year ended 31 March

1. Fundamental accounting assumption and policies

General accounting

The Financial Statements of the association have been prepared in accordance with generally accepted accounting principles in conformity with the Sri Lanka Accounting Standards.

2. Assets and bases of their valuation

2.1. Property, plant and equipment

Cost incurred in acquiring, improving or extending a property, plant and equipment have been treated as capital expenditure. Property, plant and equipment have been recorded at cost.

2.2. Depreciation

Depreciation is to be calculated in order to write-off the cost of property, plant and equipment less than residual value on straight-line basis over the expected useful lives of the concerned assets.

Depreciation is provided proportionately in the year of purchase and in the year of disposal of assets. The principal annual rates for depreciation has been used as given below:

| | |
|------------------------|-----|
| Computers | 25% |
| Furniture and fittings | 25% |
| Equipment | 25% |
| Vehicle | 25% |

2.3. Other receivables

Other receivables have been stated at their amounts estimated to be realized.

3. Liabilities and provisions

All known liabilities have been accounted for in preparing the Financial Statements.

4. Income and expenditure

Incomes and expenditures have been accounted on an accrual basis.

Notes to the financial statements (cont.) Year ended 31 March

5. Turnover

Turnover has been defined as income receivable in respect of project management fees provided during the year.

| | 2011 LKR | 2010 LKR |
|-----------------|--------------------|--------------------|
| Income received | 19,539,658 | 26,125,682 |

6. Other income

Profit on disposal of property, plant and equipment
Interest income

| | |
|---------------|----------------|
| 72,755 | 67,614 |
| 17,107 | 651,747 |
| <u>89,862</u> | <u>719,361</u> |

7. Profit from operations

The following items have been charged in arriving at operating profit.

| | | |
|------------------|-----------|-----------|
| Audit fees | 22,000 | 20,000 |
| Consultancy fees | 2,336,486 | 1,760,562 |

8. Taxation

Provision for taxation has been made for the year computed in accordance with the Inland Revenue Act No. 10 of 2006

| | 2,011 | 2,010 |
|------------------------|----------------|---------------|
| Provision for taxation | 239,534 | 53,752 |
| Under provision | 10,553 | 27,242 |
| | <u>250,087</u> | <u>80,994</u> |

Notes to the financial statements (cont.) Year ended 31 March

9. Property, plant and equipment

| | Furniture and fittings LKR | Computers LKR | Equipment LKR | Motor Vehicle LKR | Total LKR |
|---------------------------------|-------------------------------|------------------|------------------|----------------------|-------------------|
| Cost | | | | | |
| As at 1 April 2010 | 968,482 | 3,249,912 | 1,408,940 | 6,300,000 | 11,927,334 |
| Additions | 576,867 | 190,147 | 8,310 | | 775,324 |
| Disposals | (296,533) | (151,906) | | | (448,439) |
| As at 31 March 2011 | <u>1,248,816</u> | <u>3,288,153</u> | <u>1,417,250</u> | <u>6,300,000</u> | <u>12,254,219</u> |
| Accumulated depreciation | | | | | |
| Balance as at 1 April 2010 | 846,241 | 2,322,338 | 732,668 | 1,383,662 | 5,284,909 |
| Charge for the year | 230,551 | 653,790 | 218,664 | 1,571,107 | 2,674,112 |
| Disposals | (289,898) | (124,026) | | | (413,924) |
| Balance as at 31 March 2011 | <u>786,894</u> | <u>2,852,102</u> | <u>951,332</u> | <u>2,954,769</u> | <u>7,545,097</u> |
| Net book value | | | | | |
| As at 31 March 2011 | <u>461,922</u> | <u>436,051</u> | <u>465,918</u> | <u>3,345,231</u> | <u>4,709,122</u> |
| As at 31 March 2010 | <u>122,241</u> | <u>927,574</u> | <u>676,272</u> | <u>4,916,338</u> | <u>6,642,425</u> |

10. Term deposit

| | 2011 LKR | 2010 LKR |
|--------------|-------------|------------------|
| Cash deposit | - | - |
| HSBC Bank | - | 7,807,659 |
| NTB Bank | - | - |
| | <u>-</u> | <u>7,807,659</u> |

Notes to the financial statements (cont.) Year ended 31 March

11. Projects

| | 2011 | 2010 |
|---------------------------------|-------------|-------------|
| | LKR | LKR |
| California / IMTFI project | - | 581,387 |
| Knowledge to innovation project | (1,537,110) | 6,006,949 |
| IDRC Bio Serve | - | 9,296,779 |
| GGC CORE project | 36,232 | (227,553) |
| Action research pilot project | - | 2,357,877 |
| IDRC 2008/2010 project | - | (6,878,071) |
| Telenor project | 2,917,723 | 7,807,659 |
| IDRC 2010/2012 project | 34,454,452 | - |
| CPR <i>south</i> 2010/2012 | 2,257,752 | - |
| | <hr/> | <hr/> |
| | 38,129,050 | 18,945,026 |
| | <hr/> <hr/> | <hr/> <hr/> |

12. Provision for retiring gratuity

| | | |
|--------------------------------------|-------------|-------------|
| Balance at the beginning of the year | 946,711 | - |
| Add : Provision made during the year | 304,140 | 946,711 |
| | <hr/> | <hr/> |
| Balance at the end of the year | 1,250,851 | 946,711 |
| | <hr/> <hr/> | <hr/> <hr/> |

13. Directors' interest in contract

Professor Rohan Samarajiva who is a Director of the organization received a sum of LKR 2,891,604.05 from LIRNE*Asia* as consultancy fees during the year.

Statement of income

Year ended 31 March

| | Schedules | 2011 LKR | 2010 LKR |
|-------------------------------------|-----------|-------------------------|--------------------------|
| Turnover | | | |
| Income received | | 19,539,658.35 | 26,125,682.21 |
| Other income | 1 | 89,861.99 | 719,361.41 |
| | | <u>19,629,520.34</u> | <u>26,845,043.62</u> |
| Less: Expenses and outgoings | | | |
| Administration expenses | 2 | 18,689,274.59 | 25,529,732.34 |
| Finance cost | 3 | 905,647.57 | 1,171,320.73 |
| | | <u>(19,594,922.16)</u> | <u>(26,701,053.07)</u> |
| Profit for the year | | <u><u>34,598.18</u></u> | <u><u>143,990.55</u></u> |

Schedules to the statement of income

Year ended 31 March

| | 2011 LKR | 2010 LKR |
|---|------------------|-------------------|
| 1. Other income | | |
| Interest income | 17,107.05 | 651,747.41 |
| Profit on disposal of property, plant and equipment | 72,754.94 | 67,614.00 |
| | <u>89,861.99</u> | <u>719,361.41</u> |

Schedules to the statement of income (cont.) Year ended 31 March

2. Administration expenses

| | | |
|---|----------------------|----------------------|
| Audit fees | 22,000.00 | 20,000.00 |
| Consultancy and research fees | 2,336,486.21 | 1,760,561.63 |
| Courier charges | 45,499.79 | 75,937.41 |
| Training and educational expenses | 190,216.63 | 21,535.10 |
| Professional fees | 104,893.77 | 607,334.04 |
| Furniture fittings hiring and maintenance charges | 482,770.52 | 761,088.80 |
| Printing and stationary | 973,464.75 | 1,090,593.87 |
| Telephone charges (local and international) | 769,141.56 | 1,204,396.15 |
| General expenses | 29,785.67 | 205,920.81 |
| Water | 56,204.83 | 46,297.57 |
| Travelling expenses | 917,625.94 | 1,021,334.75 |
| Accounting charges | 4,797.84 | 17,000.00 |
| Staff welfare | 860,928.55 | 754,017.86 |
| Casual wages | 91,218.76 | 95,433.28 |
| Office maintenance | 396,434.32 | 1,012,385.72 |
| EPF | 421,532.87 | 295,962.65 |
| ETF | 114,898.40 | 74,520.05 |
| Salaries | 3,569,928.82 | 2,469,903.55 |
| Business development and improvement expenses | 984,296.31 | 1,813,034.78 |
| Web maintenance | 368,368.06 | 360,335.31 |
| Insurance | 930,666.06 | 1,301,983.28 |
| Newspaper / magazine, advertising | 122,181.32 | 96,232.17 |
| Rent | 636,793.81 | 672,964.77 |
| Electricity | 463,007.50 | 494,174.76 |
| Depreciation | 2,674,112.00 | 2,648,509.72 |
| Subscription | 102,558.68 | 50,784.57 |
| Computer repairs | 474,436.72 | 426,382.94 |
| Vehicle maintenance | 162,660.99 | 361,496.21 |
| Gratuity provision | 304,140.09 | 946,710.60 |
| Strategy development | | 2,553,300.00 |
| Staff development provision | | 2,269,600.00 |
| USB stock write off | 78,223.82 | |
| | <u>18,689,274.59</u> | <u>25,529,732.34</u> |

Schedules to the statement of income (cont.) Year ended 31 March

3. Finance cost

| | | |
|-------------------|-------------------|---------------------|
| Interest expenses | 19,258.00 | 566,367.33 |
| EPF surcharges | | 1,009.97 |
| Bank charges | 533,912.04 | 281,667.57 |
| Exchange loss | 292,766.11 | 253,677.19 |
| Debit tax | 59,711.42 | 68,598.66 |
| | <u>905,647.57</u> | <u>1,171,320.73</u> |

Schedules to the balance sheet As at 31 March

LKR

1. Trade and other receivables - LKR 4,184,052.60

| | |
|--------------------------------|---------------------|
| Deposit for cooler and bottles | 21,609.15 |
| Rent deposit | 251,680.39 |
| Staff and other receivables | 55,768.54 |
| Credit card deposit | 208,363.00 |
| Prepayment (Schedule 1.1) | 3,132,460.37 |
| Other receivables | 357,378.43 |
| Staff loan | 156,792.72 |
| | <u>4,184,052.60</u> |

1.1. Prepayment - LKR 3,132,460.37

| | |
|--------------------|---------------------|
| Ceylinco insurance | 328,888.86 |
| Other prepayments | 196,983.96 |
| Office rent | 2,606,587.55 |
| | <u>3,132,460.37</u> |

Schedules to the balance sheet (cont.) As at 31 March

2. Bank balance - LKR 39,154,539.02

| | |
|---|---------------|
| HSBC-domestic foreign currency account | 37,335,398.35 |
| Cash in hand | 203,014.71 |
| HSBC- local currency account | 1,007,894.73 |
| NTB- local currency account | 221,662.20 |
| HSBC - Bio Survey- local currency account | 386,569.03 |
| | <hr/> |
| | 39,154,539.02 |
| | <hr/> <hr/> |

3. Trade and other payables - LKR 8,011,774.12

| | |
|-------------------------------------|--------------|
| Accrued expenses (Schedule 3.1) | 4,966,198.70 |
| Direct non-related project expenses | 3,045,575.42 |
| | <hr/> |
| | 8,011,774.12 |
| | <hr/> <hr/> |

3.1. Accrued expenses - LKR 4,966,198.70

| | |
|-----------------------------|--------------|
| Telephone bills | 25,192.87 |
| Water | 3,441.21 |
| Electricity | 43,394.21 |
| EPF, ETF and PAYE | 224,541.48 |
| Withholding tax payable | 9,156.89 |
| Audit fee payable | 22,000.00 |
| Other payables | 1,305,287.47 |
| Staff development provision | 2,226,600.00 |
| CONNECTasia | 1,106,584.57 |
| | <hr/> |
| | 4,966,198.70 |
| | <hr/> <hr/> |

4. Bank overdraft - LKR 414,713.28

| | |
|----------------------|-------------|
| HSBC current account | 414,713.28 |
| | <hr/> <hr/> |

