

Final Technical Report

Turning Evidence into Digital Policy in Sri Lanka, India and Myanmar

Reporting period: 1 May 2018 – 31 January 2020

IDRC Project Number: 108826-001

Submitted to IDRC by:



LIRNEasia is a regional ICT policy and regulation think tank active across the Asia Pacific. It is incorporated as a non-profit company under Sri Lankan law.

On 31 January 2020

IDRC Project number: 108826-001

IDRC Project Title: Turning Evidence into Digital Policy in Sri Lanka, India and Myanmar

Reporting period: 1 May 2018 – 31 January 2020

Countries: Sri Lanka, India and Myanmar

Full Name of Research Institution: LIRNEasia

Address of Research Institution: 12 Balcombe Place, Colombo 00800, Sri Lanka

Contact Information: info@lirneasia.net (e), 0094112671160 (v), 0094112675212 (f)

Research team: Helani Galpaya (Chief Executive Officer, LIRNEasia; Project leader); Prof. Rohan Samarajiva (Chair, LIRNEasia, Project Advisor); Ayesha Zainudeen (Senior Research Manager, LIRNEasia); Tahani Iqbal (Senior Research Manager, LIRNEasia); Isuru Samaratunga (Researcher, LIRNEasia); Ramathi Bandaranayake (Researcher, LIRNEasia); Prof. Vigneswara Ilavarasan (Senior Research Fellow); Dr. Sabina Fernando (LIRNEasia Alumnus); Pamudu Tennakoon (LIRNEasia Alumnus); Gayani Hurulle (LIRNEasia Alumnus); Chiranthi Rajapakse (LIRNEasia Alumnus); Htaike Htaike Aung (Myanmar ICT Development Organisation, MIDO); PhyuPhyu Thi (MIDO); Dr. Rajov Aricat (Nanyang Technological University, NTU Singapore); Dr. Rich Ling (NTU Singapore); Dr. Andrea Calderaro (Cardiff University); and David Madden (Phandeeyar).

This report is presented as received from project recipient(s). It has not been subjected to peer review or other review processes.

This work is used with the permission of LIRNEasia.

Copyright 2020, LIRNEasia.

*Disseminated under Creative Commons Attribution License
(<http://creativecommons.org/licenses/by/4.0/>)*

Table of Contents

1	Executive Summary.....	4
2	The research problem.....	6
	2.1 Rationale.....	6
	2.2 Objectives.....	6
	2.3 Changes in scope.....	7
3	Progress towards milestones.....	7
4	Synthesis of research results and development outcomes.....	9
	4.1 Activity 1: Continuing ICT sector growth trajectory in Myanmar.....	9
	4.2 Activity 2: Modelling the impacts of digitization in developing country jobs.....	10
	4.3 Activity 3: Exploring opportunities and challenges posed by ICTs to attracting and keeping women in the labour force.....	11
	4.4 Activity 4: Capitalizing on policy window for drafting broadcast licensing policy in Sri Lanka.....	12
5	Methodology.....	13
6	Project Outputs.....	14
7	Problems and Challenges.....	14
8	Administrative Reflections and Recommendations.....	15

1 Executive Summary

This grant draws together four distinct areas of work related to policy development and influence in Asia, bringing together, continuing or wrapping up several ongoing themes of research LIRNEasia has engaged in over the past 5 years. The objectives of this project were as follows:

1. To produce a peer reviewed publication that analysed Myanmar's ICT sector reforms so far and prioritized the actions needed to ensure that the growth and inclusion trajectory continues. The book is intended to be a resource for practitioners, policy makers and researchers interested in ICT reforms, and in taking research to policy. (Activity 1);
2. To systematically map the availability of labour data that is essential to modelling how ICTs are impacting labour in India and Sri Lanka, and to use statistical methods to quantify the extent of this impact. (Activity 2);
3. To systematically gather the data and map the literature related to women's labour force participation, with a particular focus on women's jobs and ICTs. This work is the first step in understanding how ICTs can be used to bring and keep more women into the workforce. (Activity 3); and
4. To respond to a policy window in Sri Lanka and draft a new broadcasting policy. (Activity 4).

The efforts detailed in this final technical report submitted to IDRC covers work done in Myanmar, India and Sri Lanka.

Activity 1: Myanmar ICT Sector Reforms: Since sector reforms and market liberalization policies were introduced in Myanmar in 2013, LIRNEasia has engaged actively with policymakers to share and build up the requisite regulatory capacity, provide best practice policy guidance and assist the Government's vision for a connectivity and digital access. Work has involved extensive, nationally representative quantitative surveys on household and individual ICT use, and qualitative studies exploring in depth issues faced by specific marginalized groups including women and persons with disabilities (PWDs). This research has shown that gaps and challenges exist in ICT development. A book/publication bringing together these findings was deemed to be useful as a resource for those interested in Myanmar, its ICT sector reforms and in taking research to policy; as a reflective guide to Myanmar's policy makers and practitioners on the next wave of actions needed to continue the momentum in the ICT sector.

- **Output(s):** 10 chapters covering the economic, social and political aspects of Myanmar's digital journey have been drafted and will be finalised once a publisher has been identified.

Activity 2: Impact of automation on jobs: Computerization and automation are changing the nature of work and several seminal studies have been conducted in this area, but focusing on data and implications on developed countries. The narrative for automation is poor in developing countries, particularly in Asia. This is not only because existing literature has focused heavily on the global north, but also because of the lack of sufficient job-related data needed to replicate these existing models. The starting point for LIRNEasia was therefore to understand the availability and shortcomings in labour force data in Asia. If data is available, the second step was the replication (of sorts) of some of the heavily cited models that attempt to quantify the impact of automation on labor markets in one or two Asian countries. The ongoing effort suggests that some predictive modelling based on available data is possible, though full replication is limited due to data unavailability.

This research theme is a continuation of our previous IDRC funded research which examined (digital) platform mediated work and its potential to include previously excluded groups in the labor market.

- **Output(s):** *Report on the impact of automation on the workforce in Indian economy has been completed.*

Activity 3: ICTs and female labor force participation: Female labour supply is both a driver and an outcome of development. As more women enter the labour force (i.e. input of labour is higher), economies can grow faster. Yet many of the countries that LIRNEasia carries out research in tend to have low women's labour force participation. The reasons for low participation by women are many and it is important to lay the foundation for future research on strategies for attracting and keeping women in the workforce using ICTs. This study examined all published literature related to the female labor force participation, with a particular focus on what ICTs can do to increase it.

- **Output(s):** *A literature review of 250 scientific articles was conducted, to identify trends in female labour force participation, key determinants of those trends, the influence of ICTs on female labour force participation, and finally to critique the data collection methods in this area of work.*

Activity 4: Responding to policy windows in Sri Lanka: Responding to policy windows in Sri Lanka allows us to provide direct inputs to policies for consideration by the Government of Sri Lanka. During the period of this Grant, LIRNEasia has the opportunity to do so through the drafting of the Broadcasting Act and the National Digital Policy. Shaping Sri Lanka's broadcasting policies and laws have far-reaching implications – not only is it about good governance in the allocation of a scarce resource for broadcasting, but it is also about realizing the economic value (to the government) of this resource.

LIRNEasia also had the opportunity shape Sri Lanka's first National Digital Policy (for 2020-2025). This document provides critical direction on how Sri Lanka should holistically embrace and develop digital technologies and related services for the benefit of the economy, government and its citizens. The work was submitted to the Ministry of Digital Infrastructure and Information Technology, for consultations, and subsequently for approval by the Cabinet of Ministers.

- **Output(s):** *1) Report and draft text for Sri Lanka's Broadcasting Regulatory Commission Bill, and 2) Draft text and framework for Sri Lanka's National Digital Policy (2020-2025).*

2 The research problem

2.1 Rationale

LIRNEasia has completed five years of research to policy engagements in Myanmar, aimed at improving the overall Internet ecosystem. The extensive quantitative and qualitative surveys conducted describes the progress made and the challenges remaining in the ICT sector since liberalization started. The research will naturally be of interest to researchers who want to understand the research to policy process in the context of Myanmar. But the more important contribution of this work would be to articulate to policy makers and practitioners, the priorities that must be set in order to continue the momentum achieved so far in the sector.

LIRNEasia has also completed a study which looked at the potential for microwork and online freelancing in three Asian countries. The research shows such work increase employment opportunities for women, and that the overall benefits (for men and women both) look different compared to developed countries. The proposed activities under this grant will put this research in the broader context of how technology is changing work in developing countries and impacting women's jobs. Literature and data on these two topics will be explored for South Asia.

Funding was also sought to respond to an important policy window in Sri Lanka by drafting a new broadcasting policy. It had the potential to significantly impact the ICT sector, through the efficient use of a scarce resource (spectrum).

2.2 Objectives

The overall objective of LIRNEasia's work is to catalyze evidence-based policy change in order to improve the lives of people in the Asia Pacific, through the use of information, knowledge and technology where appropriate. LIRNEasia's inputs to policymakers in the region are guided by in-depth, policy-relevant research conducted on timely issues of interest in emerging Asian countries.

This project support grant is expected to facilitate the consolidation and dissemination of such research carried out by LIRNEasia, and set the stage to develop new research areas that are relevant to the region.

To achieve this objective, LIRNEasia identified the following activities:

1. To produce a peer reviewed publication that analyses Myanmar's ICT sector reforms so far and prioritizes the actions needed to ensure that the growth and inclusion trajectory continues. The book is intended to be a resource for practitioners, policy makers and researchers interested in ICT reforms, and in taking research to policy. (Activity 1);
2. To systematically map the availability of labour data that is essential to modelling how ICTs are impacting labour in India and Sri Lanka, and to use statistical methods to quantify the extent of this impact. (Activity 2);
3. To systematically gather the data and map the literature related to women's labour force participation, with a particular focus on women's jobs and ICTs. This works is the first step in understanding how ICTs can be used to bring and keep more women into the workforce. (Activity 3); and
4. To respond to a policy window in Sri Lanka and draft a new broadcasting policy. (Activity 4).

2.3 Changes in scope

Activity 1

In December of 2018, LIRNEasia was asked by IDRC to host a meeting for all the Cyber Policy Think Tank initiatives existing and imminent grantees. This included participants from six organizations from Latin America, Africa and Sri Lanka, including LIRNEasia. The meeting was held in Negombo, Sri Lanka. IDRC requested that the cost of this meeting (including airfare for participants, hotel costs, meeting organizer's fees etc., all of which amounted to USD 50,249) be borne by this project in the interim, until IDRC could complete the paperwork and re-imburse the project by this amount. However, after incurring the costs and hosting the meeting, we were informed that IDRC would be unable to reimburse us for the cost. This reduced the total amount of funds available for the originally planned activities listed in the proposal. The project team therefore made some modifications, primarily to Activity 1.

In light of these changes, the scope for the book publication was reconsidered to fit the revised budget now available under the Grant (see paragraph above). The most significant change was that the manuscript(s)/book could no longer be translated into the Myanmar language. Translation of any chapter/paper/the whole book into Myanmar language can only be done if funds are obtained from other sources. The second implication is that there is no longer funds available to make the whole book open access with the potential publisher.

Activity 2

The first stage of research confirmed that there is a lack of sufficient labour data to replicate the Frey & Osborne (2013) labour automation computational model for Sri Lanka. Accordingly, LIRNEasia was to undertake a qualitative study instead, focusing on automation trends in Sri Lanka, and covering sector-wise case studies on the risk/potential of automation will be compiled, through key informant interviews with relevant local stakeholders and desk research, to identify trends, opportunities and challenges faced by businesses in the country. Some of the questions to be asked were: What is the likelihood of automation in (your) industry? What kind of jobs would be impacted first by automation? Evidence of roles/tasks becoming obsolete or being merged into other roles? What are the factors which are enabling/hindering these transitions? And mitigation/approaches taken to address changes in job/tasks.

Activity 4

In addition to the Broadcasting Act drafted under Activity 4, LIRNEasia was asked to support the development of a National Digital Policy for Sri Lanka in March 2019. The Policy drafting work commenced in March 2019 and was completed by July 2019. The work was commissioned by the Ministry of Digital Infrastructure and Information Technology, and LIRNEasia researchers' time (salary) towards drafting of the policy was funded through this Grant. This was a new activity added to this Grant.

3 Progress towards milestones

Objective 1: To produce a peer reviewed publication that analyses Myanmar's ICT sector reforms so far and prioritizes the actions needed to ensure that the growth and inclusion trajectory continues. The book is intended to be a resource for practitioners, policy makers and researchers interested in ICT reforms, and in taking research to policy. (Activity 1).

The publication attempts to provide a reflective take on Myanmar's ICT sector reforms and prioritizes the policy actions needed to ensure that the growth and inclusion trajectory continues. The chapters are based on quantitative and qualitative research findings acquired through over five years of research to policy engagements in Myanmar by LIRNEasia, and a few others from practitioners and partners engaged in policy work in Myanmar. A total of 10 chapters covering the economic, social and political aspects of Myanmar's digital journey have been drafted. **[Annex 1]**

A book review meeting was held in Sri Lanka from 24-26 January 2020 to discuss the narratives and feedback from the author peer-review process conducted over October, November and December 2019. This discussion was useful to fine-tune the quality of submissions to be included in the publication. During this creative meeting, it was decided that 4 additional chapters should be included to round off the discussions contained within the book. These chapters need to be drafted and potential authors have already been contacted.

A publisher is yet to be identified. The style of the overall manuscript/publication will depend on the type of publisher LIRNEasia will be able to sign up with. At present, several potential publishers of interest have been shortlisted and will be approached in due course.

Objective 2: To systematically map the availability of labour data that is essential to modelling how ICTs are impacting labour in India and Sri Lanka, and to use statistical methods to quantify the extent of this impact. (Activity 2).

A research study on the quantification of labour automation in India was completed during the course of the Grant period. The model developed by Frey & Osborne (2013) was applied to Indian labour to calculate and identify the sections of the workforce across the Indian economy which are most vulnerable to job losses caused by automation. **[Annex 2]**

The proposed study in Sri Lanka was not conducted as the timelines got pushed back following the April 2019 Easter attacks, and due to resource constraints and a lack of funds left in the Grant during the latter part of 2019.

Objective 3: To systematically gather the data and map the literature related to women's labour force participation, with a particular focus on women's jobs and ICTs. This works is the first step in understanding how ICTs can be used to bring and keep more women into the workforce. (Activity 3).

A research study examining all published literature related to the female labour force participation, with a particular focus on what ICTs can do to increase it, was completed during the Grant period. The study involved a literature review of 250 scientific articles, to identify trends in female labour force participation, key determinants of those trends, the influence of ICTs on female labour force participation, and finally to critique the data collection methods in this area of work. **[Annex 3]**

Objective 4: To respond to a policy window in Sri Lanka and draft a new broadcasting policy. (Activity 4).

LIRNEasia had the opportunity to shape Sri Lanka's broadcasting and digital policies during the period of this Grant. **[Annex 4]**

The text of the draft Broadcasting Act and a corresponding report were submitted to the relevant committee of stakeholders appointed to review and reform the existing Act.

LIRNEasia also developed the country's first National Digital Policy (2020-2025) which was submitted to the Ministry of Digital Infrastructure and Information Technology, for consultations, and subsequently for approval by the Cabinet of Ministers.

Progress on these two issues has stalled since the change in Government in November 2019, but may be taken up once the General elections are held in the early part of 2020.

4 Synthesis of research results and development outcomes

4.1 Activity 1: Continuing ICT sector growth trajectory in Myanmar

Until the requested extension to the grant period was approved in May 2019, work on the book was halted, because LIRNEasia could not enter into contracts with the non-salaried chapter authors without certainty.

The book is, to some extent, based on research already conducted by LIRNEasia and affiliated researchers. For example, the findings from already-completed research/outputs from previous grants will serve as input to some of the chapters:

- Factors affecting women's ability to purchase mobile phones in Myanmar, 2016.
- GSMA Connected Women-LIRNEasia study on Mobile phones, internet, and gender in Myanmar, 2016.
- Enabling the disabled: the role of ICTs in the lives of persons with disabilities in Myanmar, 2018.
- Identity, harassment and rights online: Myanmar, 2018.
- Engagement in online discourse on the line in Myanmar?

In addition, 3 non-LIRNEasia affiliated researchers who have published on Myanmar ICT issues have contributed chapters. Another external researcher/practitioner has been identified to contribute chapters. The proposed chapters are detailed in Table 1.

Table 1: Proposed chapters

Chapter	Brief description	Authors	Status
1. Introduction: The Myanmar Miracle?	What changed in connectivity? Who benefited – gender vs income vs urban-rural data? What changed in internet?	Helani Galpaya	To be drafted
2. How did Myanmar get there?	Political economy, actors, process, what was missed in terms of opportunities	Rohan Samarajiva	Drafted
3. Internet Governance: Reform and Pitfalls in Myanmar	What capacity existed for internet governance? What changed? What is needed / what worked?	Andrea Calderaro	Drafted
Economic aspects			
4. Building Myanmar's Tech Ecosystem	Why did it matter? What Phandeeyar did? What worked, what did not?	David Madden	Drafted
5. Mobile financial services in Myanmar	What was the situation? Story of adoption and use? What was done in the policy space?	Phwint Htun	To be drafted

6. Digital work in Myanmar	Myanmar vs world on job platform use; story unique to Myanmar – Chate Sat But not silvery bullet, demand and supply discussion	Ramathi Bandaranayake	Drafted
7. Instrumental and expressive uses of mobile phones in Myanmar's brick kilns	Small and medium business use angle – where phone are a blessing aiding business implementation, but also helps to “control” employee	Rajiv Aricat & Rich Ling	Drafted
Social aspects			
8. Mobile phone networks and migration in Myanmar	Impact evaluation to measure the changes in migration and access to phones	Ayesha Zainudeen & Jorge Garcia-Hombrados	Drafted
9. The digital gender gap: Explaining the contradictions	Connectivity is high, but the gender gap is an area where Myanmar has not achieved much progress - women are 28% less likely than men to own a mobile phone. Even when women do get online the types of problematic behaviour they face is based on their gender	Ayesha Zainudeen & Chiranthi Rajapakse	Drafted
10. Digital solutions for accessibility: a roadmap for persons with disability (PWDs) in Myanmar	Transformative potential ICTs can have in the lives of PWDs, and identifying roadblocks that need to be circumvented to make ICTs accessible for all	Gayani Hurulle	Drafted
Political aspects			
11. Ethno-religious media context and how the internet changed that	Providing the context for the section. Discusses the entry of Facebook as central platform in Myanmar's digital journey. The growth of hate speech / misinformation / disinformation using three case studies	Rohan Samarajiva & Htaike Htaike Aung	To be drafted
12. Multiple identities for multiple purposes: Facebook use in Myanmar	How users respond to these issues/challenges with fake pseudo IDs when online	Gayani Hurulle	Drafted
13. Countering hate online	What civil society did to mitigate the impacts of hate speech / misinformation / disinformation, including recommendations	Htaike Htaike Aung & Phyu Phyu Thi	Drafted
14. Looking to the future	Reflections/Recommendations	Helani Galpaya	To be drafted

It is expected that this book will be useful to document the liberalisation process that took place in Myanmar, and will be written and organised in a way that highlights the economic, social and political changes and implications face through access to digital connectivity. The narrative is such that this publication could be useful for a market looking to learn about the various issues an emerging, under-developed market has to consider when liberalising their telecoms sector.

4.2 Activity 2: Modelling the impacts of digitization in developing country jobs

a) Quantification of labour automation risks in India

The model developed by Frey & Osborne (2013) was applied to Indian labour to calculate and identify the sections of the workforce across the Indian economy which are most vulnerable to job losses caused by automation. Assumptions and reconfigurations were made to work within the data sources available on India, but this is the first of its kind study in the country quantifying the impact of automation.

The limitations on over-estimation of automation percentages and risks, and the failings of the model used, are discussed in detail in the report and relevant disclaimers have been made.

Some of the main findings from the study are as follows:

- 48% of the entire workforce in the Indian economy face a high-risk of automation;
- “Clerks” (~83%), “Elementary” (77%) and “Skilled agricultural and fishery workers” (72%) occupations face the highest risk of job automation.

Considering 26% of the workforce is engaged in “Skilled agricultural and fishery” jobs, and 20% in “Elementary” occupations, the implications of automation will be significant and policy recommendations and related solutions are to be addressed in the final version of the report.

Other findings include:

- “Professionals” have the lowest average automation probability at ~15%;
- 61% of the total female workforce faces high risk of automation compared to males (44%);
- Rural workers (52%) at a higher risk than urban workers (25%); and so on.

The report was finalised and shared with an external reviewer, presented over two colloquiums for discussion internally, to strengthen the assumptions used in the modelling and the style and presentation of the findings. LIRNEasia Senior Research Fellow, Vigneswara Ilavarasan, led this study, attached in Annex 2.

b) Labour automation risks and trends in Sri Lanka

The proposed study on labour automation trends in Sri Lanka was due to commence in May 2019 but has been postponed to June 2019, due to unforeseeable local events in April-May. It was not feasible to set up and conduct interviews due to the volatile environment.

4.3 Activity 3: Exploring opportunities and challenges posed by ICTs to attracting and keeping women in the labour force

Across the existing literature, the gap between the male and female labour force participation rates is evident. This gap is prevalent across both developed and developing nations, even though research shows that this gap evolves with economic development. An extensive literature review of 250 scientific articles was conducted, to identify trends in female labour force participation, key determinants of those trends, the influence of ICTs on female labour force participation, and finally to critique the data collection methods in this area of work. Only articles published following 1995 were included in this review. However, for those articles that focused solely on the critique of methods, the year extended back to 1980.

Some of the findings from the literature review are as follows:

- The most prevalent argument surrounding the relationship between economic development and female labour force participation (FLFP), known as the U-curve hypothesis, proposes that FLFP drops

as a country initially begins to develop economically and then increases as the country's development continues. However, research conducted at a country level does not provide such strong support for this hypothesis and proposes negative and positive relationships between economic development and FLFP.

- The review also found that the primary demand-side factors are wages, the nature of the work, and taxation, while the supply-side factors included nature of the work (the industry and the demand for female workers).
- Household income was another factor that impacted FLFP: married and unmarried women living in low-income households were more likely to join the labour force out of economic necessity.
- Age, education and work-family balance are also determinants of FLFP.

The literature review was carried out by LIRNEasia Alumnus, Pamudu Tennakoon and can be found in Annex 3.

What were the main outcomes of the project? How did the project contribute to:

4.4 Activity 4: Capitalizing on policy window for drafting broadcast licensing policy in Sri Lanka

The work done in Activity 4 on the Broadcasting Licensing and the National Digital Policy provided LIRNEasia with a significant opportunity to shape and influence Government policies and bills in Sri Lanka. Such engagements lend credibility to LIRNEasia's vision, mission and related activities to catalyse and impact policy in the region.

a. Broadcast Licensing Policy

In January 2018, LIRNEasia was presented with the opportunity to support the Ministry of Finance and Media to draft the new Broadcasting Act. LIRNEasia Chair Rohan Samarajiva was appointed as the Chair of the Working Committee to Regularize Issuance of Radio and TV Licenses.

The proposed legislation prepared for the Ministry sets out the reforms for licensing including:

- the creation of three types of licenses (Type 1 for broadcasting services utilizing the electromagnetic frequency, Type II for satellite and cable based distribution services, and Type III for services related to broadcasting that do not utilize spectrum designated for broadcasting services and/or provide satellite and cable broadcasting services), issued through competitive, fair, non-discriminatory and transparent process where appropriate;
- broadens the scope of licensing to cover new digital technologies, and
- brings into play current media landscape in Sri Lanka.

The draft legislation, based on international best practices, also addresses the way spectrum is to be assigned for broadcasting and how content is to be regulated through codes of practice.

External consultant and LIRNEasia Alumnus, Dr. Sabina Fernando, conducted the research and drafted the report and Broadcasting Regulatory Commission Bill for presentation to the Committee. The report was completed in August 2018. The final version presented is attached in Annex 4.

b. National Digital Policy

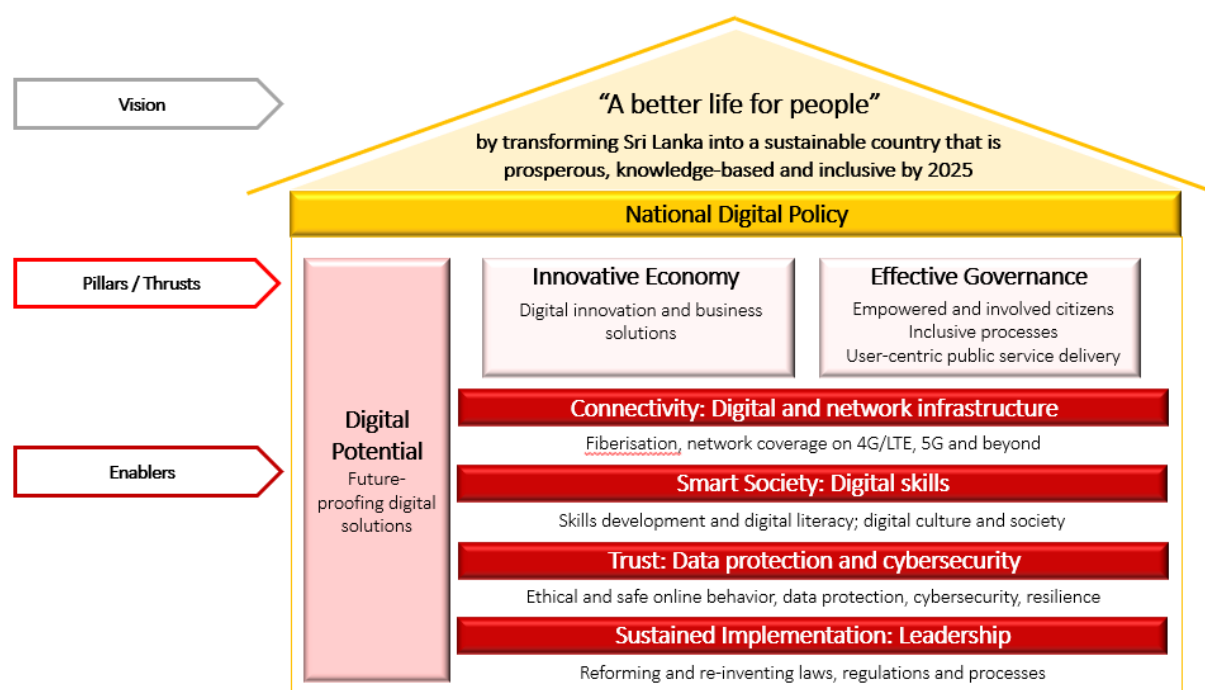
LIRNEasia was presented with another opportunity to prepare a draft of the National Digital Policy for Sri Lanka. The Policy was intended to be the principal policy document outlining the vision and way forward to achieving Sri Lanka's national digital transformation plans.

The policy outline and structure were based on desk research, comparative analysis and benchmarking of other well-established digital policies and strategies, including Singapore’s Smart Nation framework, UK Digital Strategy, the Digital Finland Framework, the Digital Agenda 2020 for Estonia, and Digital Agenda for Norway.

For now, three pillars have been identified that are relevant to the Sri Lankan context:

- innovative economy (digitalizing businesses, digital entrepreneurship, e-commerce and related initiatives),
- effective governance (e-government strategy including the national strategic government-led digital projects in finance, identification, transport, healthcare, and education),
- digital potential (ethical uses of data for artificial intelligence and internet of things and so on).
- The four critical enablers that have been identified are as follows: connectivity (digital and network infrastructure), smart society (digital skills), trust (data protection and cybersecurity), and sustained implementation (leadership).

Figure 1: Proposed framework for National Digital Policy



Work was completed by July 2019 and submitted to the Ministry of Digital Infrastructure and Information Technology. A series of public consultations were conducted and the document refined. This was subsequently sent for approval by the Cabinet of Ministers, but a decision remains to be taken on this.

The Policy and related documents were drafted by LIRNEasia Senior Research Manager, Tahani Iqbal, with support from LIRNEasia Alumnus Gayani Hurulle, under the supervision of LIRNEasia Chair Rohan Samarajiva.

5 Methodology

No research was conducted under Activity 1.

For Activity 3 and 4, desk research, comparative analysis and benchmarking approaches were utilised for both the National Broadcast Act and National Digital Policy.

Activity 2 included research methods and analytical techniques. In fact, for Activity 2, the method used was a novel approach. The seminal work of Frey and Osborne (2013)¹ to calculate the risk of job automation in the United States (US) economy using US job data, was applied to Indian occupation data. This was done by mapping occupations between India, i.e. National Classification of Occupations (NCO) and the US, i.e. (Standard Occupational Classification), estimating of the average automation probability for various occupations in India in order and to gauge the impact of job losses. In line with Frey and Osborne study, occupations with more than 70% automation probability were defined as high-risk, occupations with 30-70% automation probabilities were defined as medium risk, and those that had less than 30% of average automation probability were defined as low-risk occupations. A limitation of this approach is that it was an occupation-based risk assessment, which has been criticised as overestimating the percentages of automation in an economy. The critiques of Frey and Osbourne's approach has been critiqued widely, and it is the OECD's² method of measuring automation risk based on a task-based approach which is deemed to be the better of the two. However, due to the lack of such granular data in emerging Global South countries, this approach could not be adopted.

6 Project Outputs

Table 2: Outputs

	Description	Status
Activity 1	Myanmar book publication	Final manuscript to be ready for submission to selected publisher by April 2020
Activity 2	Quantification of labour automation risks in India	Completed in December 2019
Activity 3	Women in the labour force literature review	Completed in March 2019
Activity 4	a. Broadcasting Act	Completed in August 2018
	b. National Digital Policy	Completed in July 2019

7 Problems and Challenges

In Activity 1, the discussions and ideas that emerged from the authors during the book chapter review meeting, will result in a delay in getting the manuscript finalised as planned. The inclusion of at least 3 more chapters and the significant revisions required in some of the existing drafts – so that they can fit in with the wider theme and narrative of the book – will mean that the timeline is extended beyond

¹ Frey, C. B., and Osborne, M. (2013). *The future of employment: How susceptible are jobs to Computerisation?* Oxford, UK: Oxford Martin School.

² Arntz, M., T. Gregory and U. Zierahn. (2016). *The Risk of Automation for Jobs in OECD Countries: A Comparative Analysis*, OECD Social, Employment and Migration Working Papers, No. 189, OECD Publishing, Paris. <http://dx.doi.org/10.1787/5jlz9h56dvq7-en>

January 2020. LIRNEasia envisages that the publication can realistically be launched towards the last quarter of 2020.

On Activity 2, dissemination of the report has been delayed due to the Lead Researcher's (Prof. Vigneswara Ilavarasan) health situation. This will be addressed as soon as possible.

On Activity 4, the draft Broadcasting Act was to be circulated for consultation among relevant stakeholders, but this was derailed by the Sri Lankan Constitutional Crisis in October 2018. Since then there have been no discussions or opportunities to take this work forward as the Minister and officials have changed. LIRNEasia will have to wait for further directions from the new Minister and Secretary.

Similarly, progress on the National Digital Policy (2020-2025) has stalled since the change in Government in November 2019, but may be taken up once the General elections are held in the early part of 2020.

8 Administrative Reflections and Recommendations

The fact that part of the funding that was allocated for this Grant were utilised by IDRC for other unplanned meetings (i.e. the Negombo Cyber Policy Think Tank meeting in January 2018), took away a large part of the funds available for LIRNEasia to carry out some of the activities/research that it had planned. Specifically, the following two items were not completed:

- The Sri Lanka labour automation study could not be done due to lack of funds
- The finalization of the book was not done, and money has not been allocated to making all chapters open-access. The chapters are completed and it is hoped that after negotiations with the publisher, funds can be sought to make the book open access