

FINAL TECHNICAL REPORT / RAPPORT TECHNIQUE FINAL SIRCA III YEAR 3 FINAL TECHNICAL REPORT

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IDRC Small Grants Programme for ICTD Research Capacity Building

**Strengthening Information Society Research Capacity Alliance III
(SIRCA III)**

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1. Executive Summary

SIRCA III is a theory and capacity building research programme that began in April 2015 and ran for a period of two years and nine months. SIRCA III funded six theory-building research projects led by teams of two senior researchers and/or practitioners investigating cross-cutting open development themes. Another six research projects were selected to empirically test the theoretical frameworks in developing countries in Asia and sub-Saharan Africa. The programme has now been completed and the majority of the teams have submitted high-quality book chapters for an edited volume to be published by MIT Press in 2018.

SIRCA III is an expansion of its predecessors, SIRCA I (a research capacity-building programme in Asia, started in August 2008) and then SIRCA II (research capacity-building across Asia, Africa and Latin America, started in 2011). The succession exemplifies the International Development Research Centre's (IDRC) and the Singapore Internet Research Centre's (SiRC) mutual commitment to pursue and promote excellence in information society/ICTD research in its target regions. The SIRCA programme achieved its programmatic goals due to the following operational achievements:

First, it has supported six theory-building projects instead of the four initially planned due to outstanding quality and spread of the proposals.

Second, it selected six empirical projects to test each of the cross-cutting theoretical frameworks in priority countries in sub-Saharan Africa and Asia. SIRCA has also fostered connections throughout the open development community across the globe through research dissemination and collaboration networks. These aspects continue the SIRCA programme tradition of strongly emphasising research capacity building.

Third, it has enabled collaboration and mentorship to build between research teams and with wider policy-maker and practitioner audiences despite the 8% decrease in the total grant amount received by SIRCA due to the fluctuating Canadian currency exchange rate. The Singapore Internet Research Centre has ensured that all teams had the opportunity to attend collaboration workshops through contributions, both in kind and through monetary support. It has provided for additional collaboration opportunities, which enabled the teams to complete research activities on time, and to expand research activities beyond the SIRCA programme.

Fourth, it has ensured that the empirical teams had the adequate resources and guidance to fulfil research objectives and capacity building needs effectively. The programme was granted extension until December 2017, which enabled SIRCA to fulfil its two core objectives to: 1) develop cross-cutting, interdisciplinary theoretical frameworks, generating seminal output for Open Development; and 2) disseminate findings in an edited book, thus strengthening the body of theoretically-based, methodologically sound, and inter-disciplinary research.

Research Projects

SIRCA has funded 6 theory-building research projects led by teams of 2 to 3 inter-disciplinary senior researchers across the globe (better known as Theory Primary Investigators or Theory PIs). The selected projects focused on developing cross-cutting open development theory across multiple domains. Themes were selected to cover a spread of complementary topics in open development including elements of trust in open development, stewardship of open data, a critical capabilities approach, an organisational approach to open development centred on power distribution, understanding divergent outcomes of open development, and situated learning and the production of identities within open development initiatives.

All theoretical frameworks were ideally positioned for rigorous evaluation and testing. In 2016, six teams of Empirical PIs pursued collaborative research to respond to each theoretical framework. Empirical projects included case studies on the Kenya Open Data Initiative, Municipal Land Records Management and municipal services (Chennai, India), evaluating Tanzania's Open Data Initiative using the critical capabilities approach in the education sector (Tanzania), a mobile agricultural open data information service for farmers (Sri Lanka), a climate change weather mapping initiative (Bengal, India), and trust issues between citizen groups and municipal government surrounding open development initiatives for urban services improvement (Chennai, India). Empirical projects were supported by the SIRCA Secretariat and via regular mentorship meetings with Theory teams. Empirical teams communicated their progress by submitting refined research design proposals, empirical snapshots, and book chapter drafts and revisions.

Upcoming

The SIRCA programme has completed a successful and highly impactful third iteration. Building on a programme model underpinned by an open approach to research and collaboration, SIRCA is increasingly fostering a dynamic and inter-disciplinary network to achieve its aims. A primary contribution of the SIRCA programme includes the completion of an edited volume, which has been accepted for publication by MIT Press as one volume of a two-part set. The SIRCA volume will provide a major theoretical backing to wider programmatic outcomes.

Snapshot of SIRCA III Programme and Achievements:

Theory Projects	Empirical Projects	Programmatic Outputs and Outcomes
Understanding divergent outcomes of open development by Marion Walton, University of Cape Town, Andy Dearden, Sheffield Hallam University, Melissa Densmore, University of Cape Town	Does sharing agricultural data lead to inclusive access? A Sri Lankan case study By Chiranthi Rajapakse and Piyumi Gamage, LIRNEasia	<ul style="list-style-type: none"> - SIRCA PI Arul Chib and Research Associate Caitlin Bentley published a literature review on the impact of open development in the EJISDC, an exploration of capability and accountability outcomes in the Journal of Community Informatics, and have another two articles currently under review. - Workshops solidified collaborative mentorship between scholars, and facilitated the achievement of the final programmatic objective to deliver a book in 2018. - The six Theory teams produced high quality cross-cutting thematic theoretical frameworks. - Five Empirical projects submitted case studies that empirically interrogate the theoretical frameworks. - SIRCA members contributed substantively to advancing the field of open development through additional research outputs and additional initiatives to influence public opinion
Trust and open development by Rich Ling, Nanyang Technological University, John Traxler, University of Wolverhampton	Can citizen science enhance trust in city governance and advance urban informatics? By Satyarupa Shekhar Swain and David Sadoway, Citizen Consumer and Civic Action Group	
A Critical Capability Approach to Open Development by Yingqin Zheng, Royal Holloway University of London, Bernd Carsten Stahl, De Montfort University	Using the critical capability approach to empirically analyse Tanzania's open government initiative in the education sector By Goodiel C. Moshi and Deo Shao, University of Dodoma	
Open institutions and their "relevant publics" - A democratic alternative to neoliberal openness by Parminder Jeet Singh and Anita Gurumurthy, IT for Change	Digitisation as 'openness'? Mapping electronic governance and shifting politics of land in West Bengal, India By Sumandro Chattapadhyay and Himadri Chatterjee, The Centre for Internet and Society	
A Stewardship Approach to Theorizing Open Data for Development By Katherine Reilly and Juan Pablo Alperin, Simon Fraser University	Assessing the Strengths and Shortfalls of Kenya Open Data Intermediation Strategies Towards Open Development By Jean-Paul Van Belle and Paul Mungai, University of Cape Town	
Learning as development: Open practices and the production of identities By Janaki Srinivasan and Bidisha Chaudhuri, International Institute of Information Technology Bangalore	Learning as Development in Practice: A case study of a weather information system in West Bengal, India By Purnhaba Dasgupta and Linus Kendall, Development Research Communication & Services Center, India	

2. Programme Overview

2.1 IDRC Support and Its Rationale

The International Development Research Centre (IDRC), a Canadian organisation supporting research activities in developing countries, created the programme “Networked Economies” before the start of SIRCA III. Key objectives within this programme seek to capitalise on new digital innovations to improve entrepreneurship, education and democracy, to actively connect marginalised people to economic opportunities and to improve cyberspace governance.

Prior research, including major publications published by the IDRC¹, has established that new forms of digitally enabled openness can contribute to a variety of social, political and economic outcomes. However, progress in the area has been siloed, and researchers and practitioners have focused on specific forms or applications of digitally-enabled openness, such as open source software, open educational resources or open government data. This has led to two major difficulties. Firstly, research has tended to explore instrumental uses of open techniques or applications without making connections to outcomes related to entrepreneurship, education and democracy. Secondly, siloed research in this area has failed to disentangle the cross-cutting features and conditions of digitally-enabled openness as a means to translate increased understanding into policies and practice.

In order to address these gaps, SIRCA led discussions at two key events that brought together several experts to flesh out potential cross-cutting themes and the key needs and directions for a programme on open development. At the first event in Cape Town, South Africa in 2013, 22 experts debated an initial open development framework and the potential research design to address it. In the follow-up meeting in Seattle, 2014, the main concerns and outcomes stemming from initial discussions were taken into consideration to finalise the programme and build consensus around potential cross-cutting themes and desired outcomes.

The SIRCA III programme focuses on generating cross-cutting thematic projects that investigate issues of openness, practice and institutionalisation in the context of Open Development. It has generated seminal output and interdisciplinary theory for Open Development that was tested and critiqued through empirical fieldwork in developing and priority countries and regions. At the same time, the programme built on capabilities and capacities established in previous SIRCA iterations to drive impacts beyond academia.

2.2 About SIRCA

The Strengthening Information Society Research Capacity Alliance (SIRCA) programme started as an ICTD and information society research capacity building project aimed at young and emerging researchers in Asia (SIRCA I) and the Global South (SIRCA II).

¹ <http://www.idrc.ca/EN/Resources/Publications/openebooks/541-1/index.html>
<http://www.itidjournal.org/index.php/itid/article/viewFile/692/290>

The reason for engaging in such a programme was because of the immense need and relevance in these regions for sustained, mentorship-based capacity building efforts aimed at select groups of scholars. The programme intended to address the lack of scholars in this field and achieve a balance in the primarily Western-centric research emerging from the region.

SIRCA I & II provided research grants through a competitive selection process and provided the selected grantees with sustained training and mentorship throughout their research experience. In the second iteration of the programme, SiRC partnered with the University of Western Cape (UWC)², South Africa, and Instituto de Estudios Peruanos (Institute of Peruvian Studies- IEP), Peru. Through these partnerships, SIRCA created greater synergy for research capacity building within each continent and across the three continents.

SIRCA has been housed at the Singapore Internet Research Center (SiRC), Wee Kim Wee School of Communication and Information, Nanyang Technological University. In addition to the continued support of its diverse networks and partnerships, SiRC gained critical expertise concerning the design and direction of theoretically-based, methodologically sound, and interdisciplinary research programmes. This is evidenced by two volumes of high-impact research (see also Section 6.1). Recently, SiRC organised the 3M workshop, an international scholarly forum for researchers and practitioners, to explore the roles of information communication technologies, particularly mobiles, in the lives of migrants worldwide. Also of significance is SiRC's demonstrated commitment and success in creating opportunities for mentorship between established international researchers and researchers from the Global South.

2.3 SIRCA III: Open Development

The discourse around Open Development, and its related issues of inclusion, access and rights have deep ramifications for society, global politics and development. SIRCA III created a vibrant interdisciplinary approach to Open Development, leading the field by enhancing current understanding of an Open ICT-mediated world and how to take advantage of it.

SIRCA III focused its efforts on conceptual development, overlaying capacity building efforts on top of this conceptual foundation. Six teams of at least 2 senior researchers have generated rigorous, interdisciplinary methodologically-sound conceptual frameworks for research into cross-cutting themes of openness. These projects were coordinated by the SIRCA Secretariat, and by a senior advisory committee.

This conceptual work acted as a foundation for concurrent field work in developing and priority countries. SIRCA III awarded six teams of researchers from developing countries with grant support and capacity building to conduct field research to empirically test theoretical frameworks developed by the Theory teams.

² The initial institution of collaboration was University of Kwazulu-Natal (UKZN) based in Durban, South Africa. With the regional collaborator's transfer to UWC, the partnering organisation has changed accordingly.

The existing SIRCA programme framework has been re-aligned to offer greater support to thematic research projects, and to develop an integrated mechanism for interdisciplinary research in the field. While theory projects formed the theoretical core of SIRCA's work, the second phase of SIRCA featured high-quality programming for capacity building and rigorous empirical research design.

SIRCA III also featured a reflexive learning approach to its programme framework – by continually monitoring, adapting and tweaking its operations and activities through a real-time process of feedback and data gathering.

2.4 SIRCA III Programme Phases and Milestones

SIRCA III was split into two programme phases: Phase I constituted the theory phase while Phase II was the empirical phase. During Phase I, six senior research teams developed cross-cutting theoretical frameworks and a research agenda in cross-cutting thematic areas of open development. Teams collaborated with the SIRCA Secretariat and SiRC Principal Investigator (PI) through workshops and online shared resources. The purpose of working across all research teams in this manner was to develop high-quality and interdisciplinary research outputs as a means to synthesise frameworks across themes. Through a shared commitment to openness, Theory teams worked together to provide intellectual leadership for the academic community, to engage with public opinion and to influence policy-makers.

Phase I milestones included:

1. Theory-building workshop in September 2015;
2. Publishing the refined project proposals;
3. Publishing a white paper of the theoretical frameworks on the SIRCA website;
4. Delivery of a quality theoretical paper for an edited book.

Phase II tested and/or verified theory developed in Phase I. SIRCA III launched a second call for research proposals in February 2016 to select, with guidance from the Theory teams, up to two scholars from a developing country. These scholars conducted research (including data gathering through fieldwork) to empirically test the cross-cutting theoretical frameworks in their country.

Phase II milestones included:

1. Collaboration workshop in June 2016 at ICTD Michigan, USA;
2. Submission of a refined project proposal;
3. Submission of empirical snapshots of gathered data;
4. Submission of a draft book chapter;
5. Final publication workshop in May 2017 at IFIP WG 9.4 Yogyakarta, Indonesia;
6. Delivery of a quality empirical chapter for an edited book.

2.5 Programme Timeline

Refer to Appendix 1 for the programme timeline.

2.6 SIRCA III PIs and Projects

In July 2015, six theory teams were selected to develop cross-cutting theoretical frameworks, instead of four as initially planned. This provided greater opportunity to address a broader reach of open development issues, but required extra budgetary attention and support. Between April and June, 2016, Theory teams were each paired with an Empirical team. Empirical teams were selected based on the capacity of the project to respond to the theoretical framework, the research design and qualifications of the applicants. Both the Theory and Empirical teams represent different regions and are composed of an even gender mix. Details of the projects are outlined in Table 1.

Table 1 Detailed overview of the SIRCA projects

Cross-cutting Theme	PI Names	Institution and Country	Country of Research	SIRCA Volume Chapter Title	Grant Amount (in SG\$)	Project Duration
Stewardship of open data	Katherine Reilly & Juan Pablo Alperin	Simon Fraser University, Canada		A stewardship approach to theorizing open data for development	\$ 26,018.00	29 months
	Paul Mungai & Jean-Paul Van Belle	University of Cape Town, South Africa	Kenya	Assessing the strengths and shortfalls of Kenya's open data intermediation strategies towards open development	\$8,000.00	17 months
Trust	Rich Ling & John Traxler	Nanyang Technological University, Singapore & University of Wolverhampton, United Kingdom		Trust and open development	\$ 24,080.00	29 months
	Satyarupa Shekhar Swain & David Sadoway	Citizen Action Group, India & Nanyang Technological University, Singapore	India	Trust in the governance of urban services in India: Examining openness in the provision of public services in Chennai	\$ 11,000.00	17 months
Critical Capabilities	Yingqin Zheng & Bernd Stahl	Royal Holloway University of London & De Montfort University		A critical capability approach to evaluate open development	\$ 21,065.46	29 months
	Goodiel C. Moshi & Deo Shao	University of Dodoma, Tanzania	Tanzania	Applying the critical capability approach to empirically analyze Tanzania's open government data initiative in the education sector	\$ 7,936.00	17 months

Cross-cutting Theme	PI Names	Institution and Country	Country of Research	SIRCA Volume Chapter Title	Grant Amount (in SG\$)	Project Duration
Situated Learning	Janaki Srinivasan & Bidisha Chaudhuri	International Institute of Information Technology Bangalore, India		Learning as development: Open practices and the production of identities	\$ 23,374.05	29 months
	Purnabha Dasgupta & Linus Kendall	Development Research Communication and Services Centre, India & Sheffield Hallam University, United Kingdom	India	Learning as development in practice: A case study of a weather information system in West Bengal, India	\$7,920.00	17 months
Divergent Outcomes	Marion Walton*, Andy Dearden^ & Melissa Densmore*	*University of Cape Town, South Africa & ^Sheffield Hallam University		Understanding divergent outcomes in open development	\$ 23,689.33	29 months
	Chiranthi Rajapakse & Piyumi Gamage	LIRNEasia, Sri Lanka	Sri Lanka	Does sharing agricultural data lead to inclusive access for farmers? A Sri Lankan case study	\$6,823.27	17 months
Open Organisations	Parminder Jeet Singh, Anita Gurumurthy & Nandini Chami	IT for Change, India		Open organisations and their “relevant publics” – A democratic alternative to neoliberal openness	\$ 23,967.30	29 months
	Sumandro Chattapadhyay & Himadri Chatterjee	Centre for Internet & Society, India	India	Digitisation as ‘openness’? Mapping electronic governance and shifting politics of land in West Bengal, India	Incomplete submission	

2.7 Contributions of the SIRCA III Secretariat

The SIRCA Secretariat prepared a proposal for SIRCA III in November 2014. The SIRCA administrative team submitted necessary documents to IDRC in November 2014 which eventually resulted in a contract for SIRCA III in February 2015.

Whilst preparing the proposal, the Secretariat compiled a literature review on Open Development, laying the groundwork for both the research contributions and grant call of the coming months. The SIRCA team also reflected on the successes and failures of past iterations to strengthen the programme design, workflow and support to researchers. Moreover, we received considerable feedback and guidance surrounding the scope of research and open development concepts from Matthew Smith, Senior Programme Officer, IDRC, a founding expert in this field.

Upon acceptance of the SIRCA III programme, the Secretariat hired two programme staff, Project Officer Sandy Pek and Research Associate Caitlin Bentley. The SIRCA team collaborated on the following items at the start of the programme:

- Production of grant call for proposals for both phases
- Creation of grant application review process
- Developing grant review form and matrix
- Developing a webpage to support the roll out of the programme

These were essential steps preparing for the new programme which would be more global and grander in scale than its predecessor.

SIRCA staff then had the following responsibilities in addition to everyday operational responsibilities:

- Dissemination of call for application
- Grant review
- Grant award and disbursement
- Collecting and sharing open development resources
- Monitoring research progress and providing support
- Publication planning and manuscript preparation
- Research workshop planning and design

The above activities have been covered in detail in the first and second technical reports, and the outputs of these activities are still attached as Appendices to this report for consultation. This final technical report will cover the period from April 2016 to December 2017, during which period the SIRCA administrative staff have had the following responsibilities:

- Tracking research progress and awarding disbursement of remaining grant amount
- Publication workshop planning and design
- Publication planning and editorial review

- Programme wrap-up and project closing
- Planning for SIRCA IV

The Secretariat staff members have held regular weekly administrative meetings in Singapore to discuss and plan the details of the programme and meet the needs of PIs (minutes recorded and available upon request).

3. Administrative System and Process

3.1 Theory-Building Process

The following three sub-sections discuss the selection of the cross-cutting themes for theory building, the support given to Theory teams for theory-building, the benefits and drawbacks of empirically interrogating the theoretical frameworks, theory-building process outcomes and feedback from the PIs about the process.

Selection of practical and widely-applicable cross-cutting themes

The Secretariat set forth an ambitious objective to draw in leading scholars in open development and related fields to develop cross-cutting theoretical frameworks. The condition that teams were composed of two scholars from different disciplines was meant to encourage innovation in thinking and inter-disciplinarity. This would ensure that cross-cutting themes could be treated to respond to the needs of various domains. As outlined in the first technical report, the Secretariat applied a rigorous evaluation of submitted proposals, selecting teams based on the importance of the cross-cutting theme, the quality of the proposal, the proposal's relevance to the programmatic research design, and the qualifications of the scholars.

The number and scope of quality proposals received pays tribute to the level of competition and selectivity that was required. We had initially planned to select four teams, but chose six due to the potential for the SIRCA programme to cover a wider range of cross-cutting themes. The six teams selected met our objectives relating to cross-cutting themes and inter-disciplinarity (Table 2).

Table 2 Overview of cross-cutting themes, PIs and their disciplines

Cross-cutting theme	Co-PI	Discipline
Situated learning and identity formation	By Janaki Srinivasan (International Institute of Information Technology, Bangalore)	Information Systems
	Bidisha Chaudhuri (International Institute of Information Technology, Bangalore)	e-Government, Sociology
Understanding divergent outcomes	By Marion Walton (University of Cape Town)	Media and Communications Studies
	Andy Dearden (Sheffield Hallam University) / Melissa Densmore (University of Cape Town)	Human Computer Interaction
Trust	By Richard Ling (Nanyang Technological University) /	Sociology
	John Traxler (University of Wolverhampton)	Mobile learning/ educational technology
Critical capabilities	By Yingqin Zheng (Royal Holloway, University of London) /	Information studies
	Bernd Carsten Stahl (De Montfort University)	Critical theory of technology
Organisational norms and power redistribution	By Anita Gurusamy /	Intersectional feminism, critical theory
	Parminder Jeet Singh (IT for Change)	e-Governance, critical theory of technology
Stewardship of open data	By Katherine Reilly /	Communications Studies, political economy
	Juan Pablo Alperin (Simon Fraser University)	Publishing studies

Theory-building support

The theory-building process was supported in four key ways:

1. **The theory-building workshop**, detailed in Technical Report 1, provided a means to agree upon a common definition of open development, which gave scope to the teams regarding how their theory frames were to contribute.
2. The Secretariat conducted a thorough literature review of open development studies, and shared the 269 articles of this review with the teams to facilitate their more targeted analysis. The Secretariat consistently **shared resources** through a DropBox folder throughout the course of the programme.
3. In December 2015, teams were required to submit a **white paper** of their theory frames which were to be distributed online for public consultation and that empirical scholars used to create their proposals. This encouraged teams to be decisive and produce their theory frames for public consumption early in the process and to build their theory in an iterative fashion.
4. Teams then submitted upwards of three more revisions of their theoretical frames, receiving **editorial review and empirical input** to further improve and contextualise their theories. We observed numerous improvements and refinements in the theoretical frames due to the interaction between the Theory teams and both the Secretariat and the empirical scholars, detailed below.

Benefits and drawbacks of empirical interrogation of theory

The SIRCA research design is the first of its kind in ICT4D research. On one hand, this approach has proven to be useful in contributing to our objective to produce inter-disciplinary and practical cross-cutting theory. It also strengthened our ability to position our contribution to knowledge, due to the innovative nature of the research design. On the other hand, this design introduced some complexity into the theory-building process, as some teams struggled either to face practical realities, or to abstract sufficiently from it. Indeed, this constant struggle is what some teams found to be the most valuable aspect of the theory-building process.

Benefits

- Selecting and focusing the theory-frame on concepts that resonated with scholars and practitioners in the field.
- Clarifying the writing and organisation of the theory-frame so that scholars from other backgrounds and disciplines can easily understand and apply it.
- Strengthening the contribution by removing or changing aspects of the theory that are not relevant within development contexts.

Drawbacks

- Relying too heavily on the empirical context to build theory, which affects its wide-ranging applicability in various practical contexts.
- Bias and commitment towards existing theoretical traditions, which was challenging for some scholars from other backgrounds or disciplines to understand and engage with these discourses effectively.

- Asymmetrical power relations, and varied academic and cultural backgrounds, between theoretical scholars and empirical scholars was a possible barrier to a free exchange of opinions. Junior scholars sometimes deferred to the seniors without completely understanding the implications, or failed to voice their opinions, leading to potential misunderstandings between the groups.

Theory-building process outcomes

All theory teams have completed the programmatic objectives, and have delivered a high-quality book chapter for inclusion within the SIRCA volume, to be completed in 2018. The theory-building outcomes are summarised according to our contributions to knowledge in Section 5. We focus primarily on the process outcomes in this sub-section.

Helpful aspects of the theory-building process

In general, the PIs conveyed that the workshops, and continuous feedback through editorial review and interaction with the empirical teams were the most helpful aspects of the theory-building process. The Collaboration workshop and editorial reviews provided scope and direction for theory construction. In contrast, interaction with the empirical teams provided more practical and context-specific insight into theory-building needs. All PIs found that the workshops were helpful for moving forward, whereas some teams responded to empirical interrogation more than others.

Progress and challenges observed

Most of the challenges experienced by the Theory teams reflected the lack of definitional clarity that existed in the Open Development field in 2015. At the first Collaboration workshop, we encouraged teams to push core concepts forward, agreeing primarily to work towards a common social transformation objective. Yet, only one of the Theory teams engaged with core concepts of Open Development, whereas the remaining teams left interpretation wide and fluidly constructed. As a result, and in concert with the publication of key resources published by the editors in 2016 (Bentley and Chib's literature review, and Smith and Seward's open praxis framework), Theory teams were encouraged to reduce further ambiguity by building on a common frame. This facilitated the theory-building process considerably because many of the PIs were experts in their disciplines, with deep knowledge in social theories that they then applied in a novel, programmatically coherent, way.

Feedback from PIs

Andy Dearden, Marion Walton and Melissa Densmore

Our initial objective was to develop an (extensible) frame of reference that could be used to analyse the situated learning encounters and socialisation practices that are supported in specific initiatives for open development. We hoped that our new framework would be usable in Phase 2 to investigate how development

outcomes might be affected by strategies and practices for promoting inclusion in open development initiatives. The objective is achieved through a new framework that combines the insights of Activity Theory with those of New Literacy Studies, highlighting how 'literacy events', 'reading relationships' and 'writing relationships' are worked out in practice when people appropriate new open technologies and weave them into their day-to-day activities.

The framework has been used effectively to undertake a qualitative study of the adoption of an open development initiative of the Sri Lankan Department of Agriculture. This mainly qualitative study by Chiranthi Rajapakse and Piyumi Gamage has revealed significant insights into the diverse ways that farmers have appropriated the technology offered by the Department of Agriculture and used it to enrich their networks of practice. The work has highlighted opportunities for the initiative to be extended and developed to enhance its impact by further embracing open principles of two-way communication, peer learning and open networking.

Rich Ling and John Traxler

In general, the work on this theoretical portion of the project proceeded as expected. There were several instances when the specification of the area under consideration were changed due to discussion within the broader project. For example, the inclusion of the normative focus on open development "for social justice" was not really a part of the original conception.

Parminder Jeet Singh and Anita Gurumurthy

We attended various workshops held by the SIRCA team, which helped us greatly to shape our perspectives and frameworks, through discussions and spoken and written feedbacks. We ourselves contributed to the group's development of some common understandings of the idea of "open development".

As a result of all these intellectual exercises, and our own in-house discussions at IT for Change, we then came up with a considerable evolved conceptualization and framework of "open development"... We hope that this work will make an important contribution to the field of "open development", and to that of development itself. We also see it contributing to theories of democracy, especially participatory democracy, and to study of public institutions. We ourselves plan to take forward the insights and theoretical frameworks that we were able to develop during this research into these fields of our theoretical interests, as well as their practical implementation.

Katherine Reilly

I personally learned an enormous amount about how theory might be 'read' by empirical researchers and practitioners in the field, and was wowed by the generous feedback I received about my work while in Indonesia. As a result of this,

I feel that the theoretical framework I developed does indeed offer novel ways of thinking about open development.

I am sceptical about how much success I had in developing other people's research capacity through the project. I feel that I offered extensive mentorship, and multiple opportunities for growth throughout this project, both in my own institution and with my partner grantees. However a number of constraints limited the potential for realizing the outcome of increased research capacity, including limited budgets, differences in research culture, differing expectations of what the grant should be used for, and contradictory demands on time and resources. In addition, I had hoped to develop collaborations directly between grad students at SFU and at UCT, but I vastly overestimated capacity and budget to support this type of initiative.

Janaki Srinivasan and Bidisha Chaudhuri

We had not expected... that our two-day meeting in Bangalore with the empirical team would lead us to question the matrix we had presented in our first draft of the framework and start to question how Communities of Practice might be hard to study. Nor did we expect that we would co-author papers. Our framework too has been greatly reshaped in conversations with the empirical team... We are also very pleased with our working relationship with the empirical team, and hope to take it forward as the team continues its work in West Bengal. Since the empirical team is closely embossed with the organisation whose innovations in open systems it is studying, we expect that our work will flow back into the organisation. In turn, we hope this will enrich the conversations that are already taking place about how 'open' their systems really are, and how they can better involve a more diverse cross-section of the farmers and households they work with in West Bengal.

3.2 Empirical Research Process and Mentorship Model

The following four sub-sections discuss the selection of the empirical projects and the general progress of fieldwork, the research support and mentorship model enacted, empirical research and publication process outcomes and feedback from the PIs.

Selection and progress of high importance case studies

As outlined in the second technical report, many of the proposed empirical projects were exploratory in nature, such that PIs intended to research a particular context or population in order to see what open activities were taking place. The SIRCA Secretariat focused instead on the selection of high importance case studies, within which open development activities were already taking place. Of course, the qualifications and quality of the proposal were also taken into consideration. Moreover, there were no proposals to engage with two of the six theoretical frameworks. The Secretariat made suggestions regarding which of the unselected case studies could be amenable to testing these orphaned frameworks, and one of the empirical projects agreed to refocus. For the remaining orphaned theoretical frameworks, an

invited call for proposals was used to select the final case study. Overall, we achieved a good mix of regional coverage and domain of open development. Table 3 gives an updated account of the projects, according to the expected and actual fieldwork activities completed. Empirical research progress is discussed in detail in the remaining sub-sections.

Table 3 Project summary and fieldwork progress

Project	Research questions	Proposed Fieldwork	Completed Fieldwork
How do farmers' digital literacy levels influence their ability to benefit from open data? By Chiranthi Rajapakse and Piyumi Gamage, LIRNEasia	1. To what extent do Sri Lanka cucurbit farmers interact with the GAP standards and agricultural knowledge resources currently? 2. How does the availability of open resources through a mobile app affect participation and access with respect to the "identity" of these farmers?	Mixed methods research design: <ul style="list-style-type: none"> Baseline survey of 140 farmers Two focus group discussions In depth interviews of a cross-section of participants 	A first phase of research consisting of: <ul style="list-style-type: none"> Baseline survey of 130 farmers Two focus group discussions totalling 7 participants Two in-depth interviews A second phase of research consisting of: <ul style="list-style-type: none"> 5 in-depth interviews
Can citizen science enhance trust in city governance and advance urban informatics? By Satyarupa Shekhar Swain and David Sadoway, Citizen Consumer and Civic Action Group	1. What is the perception of trust that exists in four categories of relationships and why: a) within government; b) between government and citizens; c) between civil society organisations and citizens; and d) among citizens. 2. How and why do these trust relations influence success of open urban service delivery initiatives.	Qualitative case study, comprising interviews with: <ul style="list-style-type: none"> 11 NGO representatives 2 Head office 3 Regional office 3 Ward councillor 3 Ward engineer 3 Zone office 	Interviews with representatives from: <ul style="list-style-type: none"> 10 NGOs 1 Head office 2 Regional office 3 Zone office 3 Ward engineer 2 Parastatal officials (retired) 3 Ward Councillors
Using the critical capability approach to empirically analyse the design and implementation of the open government initiative on education sector in Tanzania By Goodiel C. Moshi and Deo Shao, University of Dodoma	The research objectives are: <ul style="list-style-type: none"> a) to unpack the power structures, namely, ideological, political and institutional forces, underlying two TOGI open data education initiatives; b) to analyze how the open data initiatives (ODI) have evolved, and how technology and ODI stakeholders have shaped each other; c) to critically examine how the evolution of the open data initiative has impacted the well-being and agency of the participants. 	Two qualitative case studies: <ul style="list-style-type: none"> Interviews with data producers, implementers, civil society representatives, and beneficiaries. 	Interviews with: <ul style="list-style-type: none"> 7 open data producers 9 open data implementers 8 open data end-users
Digitisation as 'openness'? Mapping electronic governance and shifting politics of land in West Bengal, India	The study explores two aspects of 'open development' in the context of electronic governance of land records in West Bengal, India. Firstly, it documents the operationalisation of the transition to the digital land records management system	Ethnography and interviews with two sets of actors and contexts <ul style="list-style-type: none"> Context 1: the governmental implementing institutions 	<ul style="list-style-type: none"> Two rounds of field work were completed.

By Sumandro Chattapadhyay and Himadri Chatterjee, The Centre for Internet and Society	and its location within a wider push for transparency through electronic governance systems and services. Secondly, it studies the citizen's reception of this process of opening up land records and related administrative processes, and how the technological affordances and emerging norms reconfigure the management and resolution of land related disputes. The project seeks to centrally address the issue of land dispute resolution mechanisms and how the public access to land records <i>open up</i> and impact the field of legal resolution of local land disputes.	<ul style="list-style-type: none"> Context 2: the community of influence. 	
Understanding the structures and mechanisms that foster stewardship in open development By Jean-Paul Van Belle and Paul Mungai, University of Cape Town	What open data stewardship processes and struggles between the various stakeholders, according to Reilly & Alperin (2016) five models of intermediation as a lens, are emerging within KODI, and how do they impact on open development?	Qualitative case study: <ul style="list-style-type: none"> Participant observation at 2 open data conferences in Kenya Some expansion of dissertation work on the KODI initiative Interviews with open data users and KODI Officials Embedded case studies of key open data intermediaries: KODI Platform, Map Kibera, Ushahidi, Ma3Route, NMG Newsplex' Deadly Force Database 	<ul style="list-style-type: none"> 4 interviews with KODI officials 6 interviews with KODI intermediaries: Nation Media Group, Development Initiatives Mzalendo – Eye on Kenyan Parliament, Open Institute, Code4Kenya
Openness, Learning & Development in an agricultural weather information system in West Bengal, India Purnabha Dasgupta and Linus Kendall, Development Research Communication and Services Centre	What are the linkages between openness, learning and development within a case study of an information system focused on the dissemination of weather information and agricultural advice?	Ethnography and interviews <ul style="list-style-type: none"> During a period of six months, field visits in five villages were conducted monthly lasting approximately one week each. These have been complemented by collecting project documentation and photographs from field sites. 	Mapping phase: <ul style="list-style-type: none"> Interviews with project management staff Workshops with organisational staff to determine site selection Ethnographic phase: <ul style="list-style-type: none"> Site visits to 5 villages lasting a week each over the course of 3 months Interviews with village staff and volunteers Informal interviews with citizens and

			citizen groups in each village.
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Research support and mentorship/collaboration model

The empirical teams and the capacity building process were supported in five key ways:

- Teams were required to submit **plans to communicate with their respective theory team** periodically. Most teams arranged frequent Skype meetings, face-to-face meetings and regular email communication to stay in touch.
- **The collaboration workshop**, detailed in Technical Report 2, was the first major opportunity empirical teams had to present their work, receive feedback, and work with senior scholars to design their research and to create their research instruments.
- The empirical teams had the same access to SIRCA's **shared resources** through a DropBox folder throughout the course of the programme. They were also provided with updated copies of the theoretical frameworks when these became available.
- Teams were required to submit **periodic deliverables** to the Secretariat including: a) revised research proposal; b) empirical snapshot of research progress, including raw data; c) draft research report; and d) revised research report. These enabled consistent oversight of progress by the Secretariat.
- Research reports received multiple **peer and editorial reviews** to improve the quality and coherence of the resultant output. In some cases, teams required extra writing support, provided by the Secretariat.
- Three of the six teams were offered extra **in-field support**. However, only two teams accepted the offer. These visits focused on research support in order to ensure that empirical scholars inexperienced in qualitative research methods received adequate skills training. One team chose instead to offer a **postdoctoral fellowship** at the theoretical team's institution.

Analysis and reflection

Overall, given the delays and setbacks of the empirical projects, along with a host of personal illness and difficulties occurring, it is impressive that the majority of the teams have successfully completed their projects. They have delivered case studies for a book to be published by MIT Press, a well-respected peer-reviewed university press. This publication will indeed be a major credit to their CVs, and this experience has been truly formative for them.

In relation to the research process outcomes, the majority of the empirical teams experienced significant hurdles in the research phase of their project, with many having to re-conceptualise research designs, learn new research skills and confront barriers out of their control. The mentorship and collaboration relationships facilitated the empirical teams in different ways, with each pair of teams developing their own unique relationships and ways of working. The theory teams generally had limited time to support the empirical teams, and in a few cases the Secretariat stepped in to fill in where needed. Teams were also offered in-field support when needed.

Regarding the publication process outcomes, all of the empirical teams struggled to engage with the theoretical frameworks in their writing. The majority of the teams likewise needed considerable support to produce quality research. This can be expected, as we targeted emerging researchers who could benefit from capacity building activities. While the publication workshop provided an opportunity to receive targeted feedback and to participate in the mutual construction of the book's core themes and arguments, some of the empirical researchers required much more intensive publication training and support. However, the theory teams lacked sufficient time to coach the empirical researchers with their writing. The theory teams also lacked the editorial insight needed to direct the revisions in an appropriate manner. It should also be noted that the theory teams received four rounds of reviews over the course of two years, which undoubtedly enabled a higher quality chapter to be delivered. The empirical researchers were not as experienced as the senior scholars and would have benefitted from more time to develop their writing skills, and to learn to engage with the theoretical material.

Finally, information disclosure problems were experienced between some of the theory and empirical teams, and between the pairs of teams and the Secretariat. These problems were a significant hindrance in some instances. SIRCA did not mandate monthly reports, but may consider incorporating more formal reporting procedures when there is a need to do so.

Feedback from PIs

Purnabha Dasgupta and Linus Kendall

In terms of what we sought to empirically test from the framework, we focused on substantive/instrumental learning as opposed to the CoP matrix. These changes were agreed with the theoretical team as they also developed their theoretical framework. This followed the data encountered in the field, as it was difficult to differentiate any clear boundaries between these different forms of interactions. In general, in the final discussion, the emphasis on communities of practice was reduced following what was observed in the field – where communities of practice might emerge but could not clearly as yet be identified as part of the project.

The research project has contributed a better understanding of the relationship between the practices that have developed around the system, the structural factors influencing the impact of the system as well as the way in which users have used their individual agency to draw impact and benefits from the system. This was especially evident in the way that gender played a part in the impact of the system, which will have an important impact on how the system is further developed. Finally, the research project had an impact on the internal culture and understanding of research within the organisation. Research outputs were documented and shared within the organisation in order for them to be able to use it to develop their programme.

Goodiel C. Moshi and Deo Shao

The study reveals initiatives are based on assumption about users' benefits, without any critical engagement on the users. Efforts have been done on supply of data, and a littler on users. Consequently, it is difficult to guarantee sustainability and developmental outcomes of the initiatives. Surprisingly, the Government emerged as the leading consumer of the open data portal as various members of parliament use open data portal to rise [sic] arguments that holds the government accountable. Through discussions with policy makers, the project highlighted the emergency of Government as the main consumer of the initiative, which calls for more efforts on this group as it has tools to push for changes in the society.

Paul Mungai

I joined SIRCA as an empirical researcher focusing on the intermediation models and factors promoting stewardship of open data in Kenya and integration of the country into a networked society. This resulted in great opportunities for a young researcher including workshops with leading scholars in Michigan and Yogyakarta, and a Post Doctorate Fellowship at Simon Fraser University (SFU). The fellowship was facilitated and supervised by Associate Professor Katherine Reilly. This was an excellent opportunity to improve my empirical chapter by having more frequent face-to-face meetings with Katherine, who happens to be the author of the theoretical framework for my research. In addition, I got the chance to teach an

undergraduate course on communication for development in the fall 2017 semester. I am also grateful to International Research Development Centre (IDRC) for providing a grant to support my Post Doctorate Fellowship at SFU. SIRCA helped me improve my research skills, expand my research networks, get a once in a lifetime chance to teach in North America, and publish a book chapter aimed at making an empirical contribution in open data research and practice. I am very grateful to SIRCA, IDRC and Prof Katherine Reilly, and it is my sincere hope that this initiative will remain active for the benefit of upcoming researchers like me.

Chiranthi Rajapakse and Piyumi Gamage

With relation to the first research question, our results showed the wide diversity of information sources that are accessed by farmers. A common theme was the reliance placed on information given by extension workers (formal sources). However along with these formal sources, informal sources in the shape of family members were crucial for many. Challenges came about when there were conflicts between the guidelines recommended by extension workers and practical situations faced by farmers. In such cases some farmers communicated their difficulties to the extension workers, but many did not, simply opting to not follow the guidelines in some cases instead. These findings raise interesting implications. Should there be more channels of communication between farmers and government institutions? Should farmers be encouraged more to give their feedback? Another interesting aspect was how common reading and writing relationships were between farmers. However competition sometimes played a disruptive role – farmers living in close proximity were sometimes unwilling to share information.

The results of the second round of interviews conducted after the intervention, showed several interesting features. Notable was the way in which certain farmers who adapted quickly to the use of the mobile app were able to offer thoughts on further development. This reflects the value of taking user experience and feedback into account in developing initiatives of this kind. Quite apart from the provision of information, the fact that the app helped build new contacts was seen as important, perhaps a reflection of the high value that is placed on social interactions in the respondents' communities. And though the baseline digital skill levels of the respondents played a role in how successfully they were able to learn to use the app, respondents with lower starting skill levels also improved their knowledge through the use of the app and the phone.

Sumandro Chattapadhyay and Himadri Chatterjee

The study has allowed the two researchers to explore the history and present legal-technological transformations in land administration and transparency of governance in West Bengal, India. We expect to undertake further studies in these topics, especially on the linkages between development of technologies of openness, national policy making, state level programme implementation, and the

implications of such open development initiatives on experiences of citizenship and accessing public services.

Satyarupa Shekhar Swain and David Sadoway

We had initially expected to focus on road infrastructure, and to examine perceptions of trust in official information about roads, and the credibility of government and citizens as data producers. There was also a component of creating an ICT tool to create data and to partner with an NGO in Chennai to use it. However, the partnership could not be established nor the mobile app developed.

In response to this, we chose to focus on two interrelated research questions applied in the context of a fast-changing Chennai: How are public services and infrastructural provisions being governed? And what possibilities exist for building trust and opening-up the role of citizens in the governance of public services and infrastructures? To explore these questions, we conducted 24 interviews (in 2016-17) with a diverse group of Chennai-based government officials or staffers, elected councillors and civic association intermediaries from NGOs, CSOs, and RWAs.

3.3 Real-time learning, scope for improvement and lessons learned

The programmatic structure and research design, number of teams selected and budget significantly affected the way that the teams functioned, interacted and collaborated. Whilst some aspects of the programme were flexible, such as the number of teams selected, other aspects were less so. This section discusses how SIRCA engaged in real-time learning to adapt to changing needs and circumstances given the constraints. We discuss each programmatic objective in turn, namely the programmatic research design, capacity-building, and influencing public opinion and policy-influence. We end the section by summarising key recommendations regarding the scope for improvement.

Concerning the programmatic research design, the theory phase envisioned inter-disciplinary and cross-domain theory-building by combining and engaging with existing theory and literature. However, we did not mandate a specific process for teams to follow, and we needed to learn about and adapt the programme to the needs and practices of the teams to a certain extent. In order to learn about the team's needs, Theory teams filled in a survey regarding their preferences and practices for knowledge-sharing and collaboration at the start of the programme. The idea was to encourage the circulation of ideas and literature and to strengthen a common frame of reference of open development within the group through the use of group collaboration tools. The overall sentiment indicated by the teams was that they had little interest to adopt new tools, or to dedicate much time to cross-team collaboration activities. This was likely because the senior scholars were already over-extended with their regular professorial and executive directorship duties. This sentiment was later confirmed by the theory teams within the first theory-building workshop. We adapted the programme by servicing the teams with resources, and by checking up on the team's progress regularly on an individual basis. In many cases, SIRCA's research associate held research meetings via

Skype and in person with each team's research assistant, who invariably had more time to collaborate and discuss progress.

Likewise, the second empirical phase envisioned testing the theoretical frameworks across multiple domains and contexts as well. We received one proposal that sought to respond to theoretical frameworks across domains. Our decision to adapt the programme to reduce the scope of the empirical research was necessary in the light of these events. Ultimately, the reduced budget available to empirical teams given the increase in both Theory and Empirical teams to 12 instead of 8 meant that there was limited capacity to hire additional research assistants in the empirical phase, and most of the empirical scholars conducted the research themselves. Moreover, whilst there was enough time to complete the research activities, many of the teams struggled to engage with the theoretical frameworks in the writing. More time was needed to facilitate this process. In the future, it would help to plan the same amount of time for both phases, and to allocate similar budgets to both Theory and Empirical teams, allocating some of the additional budget for empirical teams to more publication support.

SIRCA's real-time learning approach to managing and facilitating the programme's capacity-building objectives was largely successful. We encouraged direct collaboration between the Theory and Empirical teams through the proposal writing stage and Collaboration workshop. However, SIRCA followed up on each relationship following these activities to understand how the mentorship relationship was progressing. As noted above, many of the Theory teams did not have adequate time to provide the amount of support needed. In these cases, SIRCA became more involved in mentoring the Empirical scholars. Based on progressive indicators of success, SIRCA evaluated the deliverables submitted to the Secretariat in order to determine which teams needed extra support. In three instances, SIRCA organized additional mentorship activities to provide this extra support. First, Director Chib met with the Tanzania team (In conjunction with IDRC I&N workshop) to support the team's qualitative research skills development. Second, SIRCA sanctioned funds to support a field visit to Chennai for David Sadoway, who supported the Chennai-based practitioners with qualitative research skills development and writing. Third, Research Associate Bentley planned a field visit with the Sri Lankan team to facilitate a writing workshop, but due to personal extenuating circumstances of the Sri Lankan team, this failed to arise. Eventually, the team completed writing skills training online both via Skype and asynchronous feedback.

Lastly, at each stage of the SIRCA programme, we publicized research progress and engaged with relevant open development communities. SIRCA also encouraged teams to engage with their respective networks. Early into the programme SIRCA enabled Theory teams to listen to the practical concerns of policy-makers, and by the mid-point of the programme they had received feedback both from the empirical project proposals, and at the ICTD open session. Section 6.3 also details additional activities that the teams carried out to influence policy-makers and public opinion. However, most of the teams expressed that the research process required the full length of the programme, and it was not possible to crystalize specific policy objectives or asks when the core arguments and findings of the research were not yet available. As Parminder Jeet Singh remarked:

we have had no interaction at this stage with policy makers. In fact, the subject matter was treated at a theoretical level which is more appropriate, and likely, at this stage to impact the thinking of academics and researchers. However, as we do more work on methodologies of evaluation and project/ program/ organizational design, following from this work, we expect such direct policy and programmatic impacts at some later stage.

That being said, SIRCA members provide strong voices in public fora, and plan to continue to influence their networks.

Moreover, the SIRCA Secretariat continues to promote prior research of SIRCA I and II. In future SIRCA programmes, perhaps specific policy objectives could be introduced relating to prior programmes separately, rather than attempting to usurp the natural selection of policy-objectives based on empirical evidence.

3.4 Success Stories and Impact

There have been many success stories within the SIRCA programme experienced by early career researchers. The Theory teams all employed research assistants to contribute to their theoretical frameworks, receiving capacity-building support from the senior researchers:

- Dearden, Walton and Densmore employed 2 early career female researchers.
- Ling and Traxler employed two early career female researchers. Anuradha Rao is now first author of the Theory chapter, and has begun a postdoctoral fellowship at National University of Singapore.
- Zheng and Stahl employed two early career female researchers, Beck Faith is now a Research Fellow at the IDS, University of Sussex, United Kingdom.
- Reilly and Alperin employed four research assistants, and managed to obtain a postdoctoral fellowship for Paul Mungai at Simon Fraser University, Canada.
- Srinivasan and Chaudhuri employed one female and one male research assistant, Onkar Hoysala is now a co-author of the Theory chapter and has completed his MSc degree at IIT Bangalore under the co-supervision of the PIs.

A number of collaborations between SIRCA teams and employees emerged, paying tribute to the benefits of supporting research networks. Srinivasan, Chaudhuri, Dasgupta and Kendall have co-authored conference papers, and plan to continue their collaboration into the future. Mungai and Reilly are collaborating on journal articles for an upcoming special issue of EJISDC on critical realism and ICT4D, to be edited by Dr. Richard Heeks. Reilly, Mungai and Van Belle met in Seattle in August 2017 to discuss possible future collaborations, which are to include publications on the basis of Paul's dissertation work and funding applications in the area of open government data for development. Moreover, SIRCA Research Associate Bentley, as well as Reilly have received new grants to progress their research on openness within IT for Change's new research programme on *"Moving Openness to Inclusion within the Platform Economy"*. Bentley met her research collaborator at the IFIP conference, supported by SIRCA, due to her poster presentation on *Accountability Concepts for Open Development*. Bentley completed her PhD during the course of the SIRCA programme.

4. SIRCA III Publication Workshop

SIRCA organized the final Open Development Publication Workshop, in Yogyakarta, Indonesia on May 20th and 21st, 2017. The Workshop was a critical milestone within SIRCA's [open development theory building programme](#). The Strengthening Information Society Research Capacity Alliance (SIRCA) III has two phases – [a theory building phase and an empirical testing phase](#). This workshop was an opportunity for the theory and empirical teams to develop an over-arching meta-framework, core themes and arguments of the forthcoming SIRCA book, *Critical Perspectives on Open Development: Empirical Investigation of Theory*. The workshop was focused on providing feedback (both peer and editorial) for improvement and increased integration of individual book chapters, enabling greater cohesion between theoretical and empirical team chapters. A second goal of the workshop was to develop cross-cutting themes, and to acknowledge and address conceptual conflicts. The workshop was attended by at least [one member from each theoretical and empirical project team](#) (see Figures 1 and 4).

Figure 1 Director Chib introduces the objectives of the workshop to the group



Day One of the workshop consisted of peer-review sessions (Figure 2). Each peer-review group consisted of two sets of teams and one editor. The main goal was to compare/contrast theory and empirical papers to suggest improvements and cohesion between chapters. A designated reporter within each group took minutes to document suggestions for improvement and cohesion, as well as, to document themes emergent from discussion. The group gathered to report back on top themes, and suggestions for improvement at the end of the day.

The morning of Day Two was devoted to the discussion of the over-arching meta-framework, core themes and arguments of the book to begin group discussions (Figure 3). The objectives were to allow teams to draw out cross-cutting thematic and theoretical insights and reflect on methodological strengths and weaknesses. Teams were asked to write a two-page synthesis note to highlight the main thematic insights that resonated with their book chapter.

Figure 2 Peer review sessions in small groups



Figure 3 Synthesizing themes and core arguments of the book



Figure 4 Group photo of the workshop attendees



5. Advancing the Field of Open Development: SIRCA III Thematic Research Progress

Critical Perspectives on Open Development: Empirical Interrogation of Theory Construction explores cross-cutting open development themes and raises issues about the legitimacy and overall purpose of open development. This volume represents a remarkable evolution in the conceptualisation and application of digitally-enabled openness to influence positive social transformation. *Critical Perspective on Open Development* pushes past a theoretical level of engagement with open development and puts the SIRCA III authors' ideas and theories to the test. In this ground-breaking research, cross-cutting themes were empirically tested in Asia and sub-Saharan Africa and the authors reflect on how to improve proposed theoretical lenses. *Critical Perspectives on Open Development* therefore combines theoretical views with their practical application. The authors likewise critically reflect on such an approach, yielding a valuable source of reference for this emerging area of research. The book also proposes a new model of research within the area of ICT for development as a means to reduce the growing disparities between the potential and realities of how and whether digitally-enabled sharing contributes towards a process of positive social transformation.

A first of its kind, this volume deepens our understanding of open development in three significant ways:

1. It focuses on generating cross-cutting theory that is widely applicable and contextually relevant. This contribution departs from the dominant functionalist approach in the field. It also centers on themes that have broad utility across a range of practice domains and institutions.
2. It emphasizes a transformational lens, such that power, marginalization, and the social-embedded nature of open development are core elements within theoretical development. This addresses a need in open development research to not only identify structural inequalities within development processes, but to constructively address them at a fundamental level.
3. It takes a two-stage approach to confirm, test, deconstruct, modify, and improve proposed theory. Our approach offers significant empirical insights into open development by examining new and mature initiatives in four countries. It also enables a critically reflexive approach to theory building, which is grounded in realities faced by poor and marginalized people.

The following sections outline the theoretical chapters of the book, accompanied by the empirical contributions that appear as case studies.

5.1 Stewardship of open data

Theoretical framework

A Stewardship Approach to Theorizing Open Data for Development

Katherine M. A. Reilly & Juan Pablo Alperin, Simon Fraser University

Early open development work assumed that the Internet and openness decentralized power and enabled public engagement by disintermediating knowledge production and dissemination. However, over time, new intermediaries have become involved in the delivery of open information and in the stewardship of open knowledge. We have identified four models of intermediation in open development work: arterial, ecosystem, bridging and communities of practice. The goal of this chapter is to outline how the stewardship approach can be used to understand trends in intermediation across open data research. The stewardship approach gives rich insight into how intermediaries add value, for whom, and where value is accruing. It also draws attention to whether and how intermediation serves to maintain openness and facilitate public engagement, or creates new power structures. The stewardship approach helps to identify common trends or tendencies in how different types of intermediaries take on the stewardship of open information across the different domains of open development work.

Empirical interrogation of theory

Assessing the Strengths and Shortfalls of Kenya Open Data Intermediation Strategies Towards Open Development

Paul Mungai & Jean-Paul Van Belle, University of Cape Town

Open Data is critical in the realisation of open development and helps in promoting citizen engagements towards greater democracy. This study focuses on Kenya, which embarked on the journey of implementing open data in 2011, after securing buy-in from the then President, H.E Mwai Kibaki. The purpose of this study is to identify the prevailing intermediation models based on Reilly & Alperin (2016), and how the existing stewardship processes and struggles affect the realisation of open development in Kenya. In addition, this study helps in identifying the connection between supply and use of open data, and the gaps between intentions and reality. This study looks at several cases from government, civil society and private sector. Upon examination of these cases, it becomes clear that Kenya is being shaped by more than one stewardship regime, and that the presence of laws and policies does not automatically result in the institutionalization of open data.

5.2 Trust

Theoretical framework

Trust and Open Development

Anuradha Rao, National University of Singapore, Priya Parekh, Nanyang Technological University, John Traxler, University of Wolverhampton & Rich Ling, Nanyang Technological University

This chapter examines the role of trust in the creation and use of open systems in open development with a focus on the domains of education and urban services. Based on a review of the relevant literature, the chapter develops a model of stakeholders associated with open development initiatives and their positions in an ecosystem of trust. The chapter examines the

various relationships between stakeholders and the role of trust in their interactions. The chapter also outlines a number of issues that need to be addressed in the analysis of trust in open systems. The chapter closes by posing the question as to how and why understanding trust can increase the efficacy of open systems towards a process of positive social transformation.

Empirical interrogation of theory

Trust in the Governance of Urban Services in India: Examining Openness in the Provision of Public Services in Chennai

David Sadoway, Kwantlan Polytechnic & Satyarupa Shekhar, Citizen Action Group

This chapter examines how and why Rao et al.'s trust model relates to the governance of urban public services and infrastructures in the city of Chennai, India. It focuses on uncovering the main trust issues between the actors in the local urban services and governance sphere, and investigates whether understanding trust issues identified by Rao et al. may help to identify critical success factors that shape potential open development initiatives. We argue that there are some benefits of the trust model, as it clearly delineates the visible and hidden actors underpinning open development initiatives. However, the model misses the larger contextual complexities needed to understand local service needs and provisioning priorities. For instance, open practices are not a significant priority to Chennai local government officials, and neither is developing more responsive public service mechanisms with citizens. These findings confirmed that open development initiatives will sustain difficulty proceeding in this context. Although the trust model is context driven, its reduction of open development initiatives to a particular open system is also problematic. We suggest a more integrated approach to understanding urban service issues at a more structural level is needed. In other words, our approach to trust focuses on the power/structural issues within local governance and seeks to make these structures more transparent and democratic.

5.3 Situated learning and the production of identities

Theoretical framework

Learning as Development: Open Practices and the Production of Identities

Bidisha Chaudhuri, Janaki Srinivasan & Onkar Hoysala, IIT Bangalore

This chapter proposes a theoretical framework to analyse how learning takes place among users of open information systems (OIS). In our analysis, we treat learning as indicative of positive social transformation and development. We draw on practice-based theories of learning and critical development studies to understand how such learning takes place for different social actors. We study learning as an everyday practice that shapes individual identity which can be then leveraged to negotiate varied life situations beyond the immediate learning of how to use an OIS. Based on this understanding of learning, we develop a framework that critically examines different levels of learning associated with the open

practices of production, distribution and consumption around an information system. We also suggest a role for communities of practice in enabling such learning. The broader objective of this framework is to unearth the different opportunities of learning (as development) that open practices provide which were hitherto unavailable to its users.

Empirical interrogation of theory

Learning as Development in Practice: A Case Study of a Weather Information System in West Bengal, India

Linus Kendall, Sheffield Hallam University & Purnabha Dasgupta, Development Research Communication & Services Center

In this chapter, we investigate linkages between openness, learning and development through a case study of an information system focused on the dissemination of weather information and agricultural advice. We investigate openness as realised through a set of practices, resulting in development outcomes through processes of informal and situated learning. This contrasts with much of the existing empirical research which locates openness as a property of the system or the information provided through it. We illuminate how the weather system has been adopted by communities in their everyday practices as well as how and why openness influences social practices of learning created, enabled or supported by the system. By doing so, we move towards an analysis of the mechanisms of change in the intervention along with various characteristics of that mechanism rather than focussing merely on the outcomes of the intervention. Thus, we operationalise parts of Chaudhuri, Srinivasan and Hoysala's theoretical framework. Specifically, we examine their concepts of instrumental and substantive learning to uncover the various ways in which an intervention results in change for individuals and communities. In this context, we explore openness as social praxis within the weather information system.

5.4 Understanding divergent outcomes of open development

Theoretical framework

Understanding Divergent Outcomes in Open Development

Andy Dearden, Sheffield Hallam University, Marion Walton & Melissa Densmore, University of Cape Town

A truly inclusive and democratic vision of open development implies not only that people use open initiatives to support their activities, but that people can also debate and shape the direction of development themselves. However, engaging with and taking advantage of open information, tools and facilities, whether that is open government data, open source software, openly shared cultural products, open educational content, or any other openly shared digital materials, involves people applying specific skills, tools and supporting infrastructures. They must then apply these services and content to respond to their concerns and challenges. Relevant tools and infrastructures include not only technical elements (e.g. computers, mobile

phones, network connections, bandwidth and airtime), but also social infrastructures (e.g. family, friends, peers or social contacts) who support people in accessing, interpreting, engaging with, manipulating and applying open initiatives. Inequalities in access to the resources and tools results in differentiated access. Participation in open initiatives depends on the contexts in which people acquire the social and technical skills to apply these services within their own activities. Further, learning should address not only how to apply open initiatives in reading relationships, but also how to interact with open initiatives in writing relationships as authors and creators. This chapter draws upon two cases from Cape Town, South Africa, #feesmustfall and Open Gazettes to illustrate and theorize these concepts.

Empirical interrogation of theory

Does Sharing Agricultural Data Lead to Inclusive Access for Farmers? A Sri Lankan Case Study

Chiranthi Rjapakse & Piyumi Gamage, formerly of LIRNEasia

We sought to understand how different farmers learned to use and benefit from a mobile phone application that publicly shares agricultural information. Our case study centres on the experience of a LIRNEasia initiative to address issues Sri Lankan farmers are experiencing to export their produce to foreign markets. Whilst the impact of sharing agricultural information on agricultural outputs and revenue is important to understand, such figures could not explain how outcomes for different farmers changed due to different aspects of identity such as gender, education, socio-economic status, or digital literacy. Moreover, Dearden et al. argue that equal importance needs to be given to ‘writing relationships’ as ‘reading relationships’, if open development is to be inclusive and democratic. This challenged our existing conceptualisation of openness, and the design of the information sharing app in and of itself. Thus, we explore: 1) how and why digital literacy levels, socio economic status and gender of farmers affected their ability to fully utilize the open resources provided through the app; 2) the benefits and challenges of prioritising the writing rights of the farmers in our initiative; and 3) how and why the project unfolded as it did due to the interplay of the farmers’ and the project’s activity systems. In order to investigate these aspects, we conducted participant observation with the Sri Lankan Department of Agriculture, and focus groups and interviews with 9 farmers.

5.5 Critical capabilities

Theoretical framework

A Critical Capabilities Approach to Open Development

Yingqin Zheng, Royal Holloway University of London & Bernd Stahl, De Montfort University with contributions from Becky Faith, IDS, Sussex University

Drawing upon the critical theory of technology/information systems and Sen’s capability approach, the Critical Capability Approach (CCA) serves as a conceptual basis for a research framework that could be applied to assess the design, implementation and evaluation of open

development projects. Instead of measuring the achievement of technological or political goals, we propose sets of research questions that seek to explicate the ideological and political foundations of openness, and the extent to which openness enhances users' well-being and agency freedom. The evaluative framework aims to equip researchers with some conceptual guidance and methodological suggestions to carry out independent evaluation of open development initiatives, and in this process start a dialogue with policy makers, donors and designers, to engage with all key stakeholders and to protect the interests of the marginalised and disadvantaged. The CCA Evaluative framework is not sector specific and can be applied to any open development project. Researchers are encouraged to select, adapt and integrate some of the suggested research questions in accordance to the context and conditions of a particular project.

Empirical interrogation of theory

Using the Critical Capability Approach to Empirically Analyse Tanzania's Open Government Data Initiative within the Education Sector

Goodiel C. Moshi & Deo Shao, University of Dodoma

Governments are promoting openness through publication of open data, believing that it will result in participatory policy-making and enable positive returns to society. Tanzania adopted the Open Government Data Initiative in 2011. It carried out its open government partnership (OGP) Action Plan I in 2012-2013, and was implementing the OGP Action Plan II during the time of research. In the current phase, the government of Tanzania is committed to publishing its data on prioritised sectors particularly Health, Education and Water on its open data portal (www.opendata.go.tz). This study investigates the critical capability approach to evaluate the design and implementation of Open Data Initiative in Tanzania within the education sector. Our research analyses whether the design and implementation of the programme was responsible for bringing in a wide range of actors into policy processes and debates. We found that the wide-ranging number of stakeholders common to open initiatives pose a significant CCA operationalization challenge. This is especially true when the project has existed for such a long duration.

5.6 Open organisations and power redistribution

Theoretical framework

Open Institutions and their "Relevant Publics" - A Democratic Alternative to Neoliberal Openness

Parminder Jeet Singh, Anita Gurumurthy & Nandini Chami, IT for Change

We propose an institutional definition of "open development" as *the use of ICTs for organisational redesigning to bring about structural changes that enhance transparency (or information sharing), participation and/or collaboration, in a manner that is primarily motivated by (and contributes to) public interest.* Greater transparency (through information sharing),

participation and/or collaboration causes a better distribution of power in favour of the community of stakeholders that an organisation caters to. This enhances the achievement of public interest inherent in the social function of that organisation, and reduces its capture by insiders or holders of powerful roles. The chapter outlines the changes and strategies organisations can adopt to achieve more ‘open’ social arrangements. A new social arrangement with ‘open organisations’ in intensive interaction with their relevant publics will not be considered open because they minimise prior public rules or institutionalization in favour of flexible ‘pragmatic’ relationships, which is the neoliberal model. They will be open because they are fundamentally designed with an outward orientation for an effective control by their relevant publics, and against capture by insiders.

6. SIRCA Impact and Dissemination

6.1 Research Outputs

The following outputs relate to SIRCA programme and SIRCA PIs’ research related to open development and research funded by SIRCA only.

Book

Chib, A., Smith, M. L. & Bentley, C. M. (Eds.) (Under contract). *Critical Perspectives on Open Development: Empirical Interrogation of Theory Construction*. Cambridge: MIT Press.

Journal articles

Published

Bentley, C.M, Chib, A., & Poveda, S. (forthcoming). Exploring capability and accountability outcomes of open development. Manuscript accepted at *The Journal of Community Informatics*.

Chib, A., Wardoyo, R. J., & Lai, C-H. (forthcoming). Differential OER impacts of formal and informal ICTs: Employability of female migrant workers. Manuscript accepted at *The International Review of Research in Open and Distributed Learning*.

Bentley, C. M., & Chib, A. (2016). The Impact of Open Development Initiatives in Lower-and Middle Income Countries: A Review of the Literature. *The Electronic Journal of Information Systems in Developing Countries*, 74(6), 1-20.

Reilly, K., & Alperin, J. P. (2016). Intermediation in Open Development: A Knowledge Stewardship Approach. *Global Media Journal -- Canadian Edition*, 9(1), 51–71.

Under review

Bentley, C.M., Chib, A., & Poveda, S. Understanding openness through the eyes of Foucault and Bruner: The case of open development. Manuscript under review at the *Information Systems Journal*.

Bentley, C. M., Chib, A., & Wardoyo, R. J. Open collaboration as a set of relations: open practices of migrant domestic workers studying at Open University Indonesia. Manuscript under review.

Conference Proceedings

Published

Bentley, C. (2017). An Analysis of Accountability Concepts for Open Development. In *Information and Communication Technologies for Development* (2nd ed., Vol. 504, pp. 793–802). Cham: Springer, Cham. http://doi.org/10.1007/978-3-319-59111-7_64

Chaudhuri, B., Dasgupta, P., Hoysala, O., Kendall, L., & Srinivasan, J. (2017). Actor-Networks and “Practices” of Development: Impact of a Weather Information System in West Bengal. In *Information and Communication Technologies for Development* (4 ed., Vol. 504, pp. 809–815). Cham: Springer, Cham. http://doi.org/10.1007/978-3-319-59111-7_66

Chaudhuri, B., Kendall, L., Srinivasan, J. & Dasgupta, P. (2017). Understanding capabilities through everyday practice: The case of a weather information system for farmers in West Bengal. The 9th Information and Communications Technologies and Development Conference, Lahore, Pakistan, November 16-19, 2017.

SIRCA II Book

Since the launch of the SIRCA II Volume ‘*Impact of Information Society Research in the Global South*’ in 2015, the online version of the SIRCA II book has seen over 50,500 combined chapter downloads and 65 online mentions on Facebook and Twitter social media platforms. This is a 23% percentage increase in downloads from last year. All printed copies of the book have now been distributed. Approximately 300 copies of the SIRCA I & II volumes were disseminated at the ICTD conference in 2016, IFIP conference in 2017 and international academic conferences and workshops attended by Director Chib. Whereas, another 100 copies were distributed at the ITU’s World Telecom Exhibit in Bangkok, November, 2016. At this venue, research associate Caitlin Bentley provided academics, government officials, IT representatives and policy-makers, with the SIRCA Annual Report. Most recently, SIRCA II books were disseminated to well-known universities such as Queensland University of Technology, Indian Institute of Technology Delhi, U.P. Open University Philippines and Digital Media Research Centre Australia.

6.2 Online Presence

880 Likes were achieved on the SIRCA Facebook page, the social media platform used to disseminate current events and news updates, with 856 people following posts regularly. Likewise, SIRCA taps into other ICT4D groups on Facebook, namely IPID, ICTD OUI-ITD, and the ICT4D group which has 4,500 members. Outside of Facebook, the Google group on

“Human-Computer Interaction for Development” is used to reach HCI researchers who publish ICT4D research in HCI venues.

Additionally, the activities of the SIRCA III programme are updated on the SIRCA website (<http://sirca.org.sg>). SIRCA members, including the past programmes’ principal investigators, collaborators, mentors, participants, and SiRC partners and collaborators are regularly updated via this online resource. The programme has access to over 1,500 individuals on its mailing list. For instance, the call for proposals for Phase I was broadcast through the mailing list with a reach of 1,521 subscribers while the Phase 2 call had a reach of 1,538 subscribers.

6.3 Influencing Policy and Public Opinion

SIRCA members actively shared their research and findings with policy-makers and the public:

- **Yingqin Zheng** gave a talk at the Development Studies Association Conference, Oxford, UK on *Open development: What have we learned so far?*
- **Katherine Reilly** presented *Platform cooperativism: Alternatives to the sharing economy and collaborative consumption* at the Groundswell Community Learning Space, in Vancouver, in January 2016. **Katherine Reilly** also lectured with **Paul Mungai** at the University of Cape Town about *Stewardship of Open Government Data? The Kenyan Open Data Initiative* in March, 2017.
- **Deo Shao** presented at the 2nd Scientific Conference, Tanzania organized by the Consortium of Tanzanian Universities Libraries on *The road towards industrialization in Tanzania: Role of open data*.
- **Chiranthi Rajapakse** and **Piyumi Gamage** presented at the CPR South Conference, held in Yangon, Myanmar, August, 2017 about *Negotiating access to information: The case of Sri Lankan Curcubit Farmers*.
- **Caitlin Bentley** co-chaired a conference track at the IFIP WG 9.4 conference on *Open and ICT Innovations for Development*.

Other SIRCA members participated in more extensive policy-influencing activities such as:

- **Marion Walton** restructured the training of undergraduate journalism students at the University of Cape Town, where insights into identity have informed the design and development of a new curriculum in open data, data journalism and research skills at the Centre for Film and Media Studies, and at Ikamva Youth in Khayelitsha.
- **Marion Walton** and **Melissa Densmore** ran three workshop sessions for a host of open development practitioners focused on reporting taxation and illicit financial outflows. The workshop was organized by the Tax Justice Network and the Open Society Foundation and took place in June 2016. The workshops they presented provided a critique of open data sources, highlighted representational issues, and problems of communicating numerical data and arguments to broader publics, both as a result of local infrastructure and communicative practices.
- **Linus Kendall** and **Purnabha Dasgupta** attended a farmers’ forum in July 2016 held by the organization responsible for managing the case study of their research. They

discussed with farmers and organisation representatives about the project and the weather reporting system. At this event, policy-makers from NABARD (government organization) which are hosting the project were present and informal conversations were held to discuss their research.

- **Goodiel C. Moshi** shared the findings of their research with Tanzania's National Bureau of Statistics, outlining various aspects to consider, which they are consulting prior to preparing their next Open Data Policy.

6.4 SIRCA's commitment to gender equality in and through research

While gender was not a research focus, the SIRCA III programme (and even the earlier iterations) had gender equality in participation, capacity building, and administration as an internal objective of both our investigators and administrative teams. In terms of administration, the programme lead is currently shared with Caitlin Bentley, while in SIRCA II this role was performed by Roxana Barrantes leading the Latin America group. In terms of capacity building and mentorship, 7 of 13 PIs in the conceptual teams (6) are female, and 3 of the 12 empirical researchers (6). 2 teams (of 12) were composed entirely of women, while a majority (7 of 12 teams) were led by a female investigator. The female investigators were from diverse nationalities and were based all over the globe, including Canada, China, the U.K., Singapore, Sri Lanka, South Africa, with the majority comprising Indians.

Further, the formal IDRC focus on gender mainstreaming in research occurred midway through the programme at the Tanzania Partners Meeting. We are particularly proud of having supported, over the years, a gender focus in research via our own publications as seen in this selection:

Kendall, L., & Dasgupta, P. (forthcoming). Learning as Development in Practice: A Case Study of a Weather Information System in West Bengal, India. In *Critical Perspectives of Open Development: Empirical Interrogation of Theory*. Massachusetts: MIT Press.

Melissa, E., Hamidati, A., Saraswati, M. S., & Flor, A. (2015). The Internet and Indonesian women entrepreneurs: Examining the impact of social media on women empowerment. In A. Chib and R. Harris (Eds.) *Impact of Information Society Research in the Global South*. (pp. 203-222). New York: Springer.

Cruz, E. M., & Sajo, T. J. (2015). Cybersex as Affective Labour: Critical Interrogations of the Philippine ICT Framework and the Cybercrime Prevention Act of 2012. In A. Chib and R. Harris (Eds.) *Impact of Information Society Research in the Global South* (pp. 187-202). New York: Springer.

Olivera, P., Komathi, A. L. E., & Chib, A. (2015). (Un) Balanced Conversations: Participatory Action Research in Technology Development in Peruvian Primary Schools. In A. Chib and R. Harris (Eds.) *Impact of Information Society Research in the Global South*. (pp. 147-165). New York: Springer.

Furthermore, suggesting the gender focus of our selected researchers for capacity building and mentorship, in the recent work (conducted simultaneously during SIRCA, but unsupported directly) on gender and technology published by our current (female) investigators in leading peer-reviewed journals:

Gurumurthy, A., Chami, N., & Thomas, S. (2016). Unpacking Digital India: A Feminist Commentary on Policy Agendas in the Digital Moment. *Journal of Information Policy*, 6(1), 371-402.

Oreglia, E., & Srinivasan, J. (2016) ICT, Intermediaries, and the Transformation of Gendered Power Structures. *MIS Quarterly*, 40 (2), 501-510.

Zheng, Y., Hatakka, M., Sahay, S. & Andersson, A. (2017). Conceptualizing development in information and communication technology for development (ICT4D). *Information Technology for Development*.

Pallitt, N., & Walton, M. (2015). The Scripted Sandbox: Children's Gameplay and Ludic Gendering. In *Critical Perspectives on Technology and Education* (pp. 105-125). Palgrave Macmillan US.

SIRCA III is in many respects a continuation of the commitment to capacity building for female researchers in the Global South. The list is really long, so please read about this in the annual report of “*SIRCA: 10 Years of Excellence*”, noting their achievements (possibly a reflection on the capacity building inputs of SIRCA, hopefully a significant factor amongst others) in the sections “*Where are they now*” (Pgs. 6 & 8). Further note the acceptance of the SIRCA III volume “*Critical Perspectives on Open Development*” by the MIT Press, given the gender equality, leadership, and participation of female researchers in the SIRCA III programme. Read about other publications amongst our network on Pg. 26 of the [SIRCA Annual Report](#), noting once again the gender leadership exhibited.

Finally, note that the SIRCA administration and management across all 3 iterations has always been predominantly female (Caitlin Bentley, Grace Kwan, Laura Leon, Joanna Tan, Kathleen Diga, Roxana Barrantes, Sandy Pek, Tahani Iqbal, and Yvonne Lim), with administrative alumni going on to better and brighter things. Read about their achievements in the “Where are they now” section of the Annual Report.

Appendix 1 - Programme Timeline

	2015												2016												2017														
	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12							
Phase I																																							
Call for proposal																																							
Proposal submission																																							
Project selection																																							
Project begins (including signing of MoU) - Phase 1																																							
Project fund disbursement (1st tranche) - theory teams																																							
Theory workshop																																							
White paper submission - theory teams																																							
Project fund disbursement (2nd tranche) - theory teams																																							
Phase II																																							
Call for proposal for empirical scholars																																							
Selection of scholars																																							
Project begins (including signing of MoU and fieldwork by scholars) - Phase II																																							
Project fund disbursement (1st tranche) - empirical teams																																							
Collaboration workshop and ICTD 2016																																							
Submission of 1st draft chapter - theory and empirical teams																																							
Project fund disbursement (3rd tranche) - theory teams																																							
Research output workshop and IFIP 2017																																							
Submission of final empirical research paper (project ends)																																							
Project fund disbursement to theoretical and empirical teams (final tranche)																																							
SIRCA III closes																																							

Appendix 2 – SIRCA III Original Project Abstracts

Theme 1

Theoretical Project

1. Open and/or Apolitical? A critical re-examination of Open Information Systems

By Janaki Srinivasan / Bidisha Chaudhuri (International Institute of Information Technology, Bangalore)

This project proposes a theoretical framework to analyse the phenomenon of learning among users of open information systems (OIS) in which learning is taken to be indicative of positive social transformation. In order to understand how learning takes place in the context of OIS use through the interaction of structures and agency, we draw on practice-based situated theories of learning and critical information studies. Such theories prompt us to adopt a broader processual view of learning as an everyday practice that shapes individual identity which can be then leveraged to negotiate varied life situations beyond the immediate learning of how to use an OIS. Based on this understanding of learning, we develop a framework that will critically examine different levels of learning occurring within a matrix of communities of practice (CoPs) specifically in the context of OIS use. The broader objective of this framework is to unravel the different opportunities of learning (as development) that OIS provide which were hitherto unavailable to its users.

Empirical Project

2. Exploring the role of “learning as development” in open information systems – a case study from West Bengal, India

By Purnabha Dasgupta / Linus Kendall (Development Research Communication and Services Centre)

Our project is a case study of an open information system providing weather recommendations and crop advisory to support climate change adaptation for marginal and small-holder farmers in the Purulia and Bankura districts of West Bengal, India. Specifically, we are interested in the impact of open content and open processes within the system with regards to learning. Following the framework developed by Srinivasan and Chaudhuri we aim to explore the ways in which the system enables different forms of learning through different modes of interaction – face-to-face, digital/ICT-enabled, synchronous, asynchronous, mediated and direct. Using practice based theories of learning as a basis, we will look at the role of the system in relation to existing or potentially new communities of practice. We will aim to uncover whether the openness of the system is enabling learning going beyond the use of the system itself – impacting identity, agency, power and institutions among actors involved. Methodologically, we will use an ethnographic, mixed-method approach involving observation, semi-structured interviews with users of the system’s different modalities. Through this project, our contribution will be an improved understanding of how learning and development interacts within the context of open information systems.

Theme 2

Theoretical Project

3. Resources, Learning and Inclusion in Open Development

By Marion Walton (University of Cape Town) / Andy Dearden (Sheffield Hallam University) / Melissa Densmore (University of Cape Town)

Engaging with open development (OD) necessitates learning in which people appropriate and adopt new technologies and socio-technical practices. This typically involves informal learning (i.e. outside of formal education), and will differ between reading relationships (as a user of OD resources) and writing relationships (for full ownership or authorship of OD). If potential participants are unable to connect with existing learning networks, OD initiatives will have limited impact. Communities that aim to be ‘open’ may exclude people by virtue of race, language, literacies, gender, sexuality, phone/computer ownership, access to Internet or other aspects of identity. This project will explore the situated material conditions and informal learning practices that surround processes of inclusion in (and exclusion from) OD initiatives. The project will develop more detailed ethnographic and socio-material accounts of the informal learning processes and outcomes in such encounters. It will foreground the ways that global

inequities of infrastructure, default identities and the cultural practices often associated with openness can “format” participation in subtle but significant ways.

Empirical Project

4. How do farmers’ digital literacy levels, socioeconomic status, literacy, gender and land ownership status, influence their ability to benefit from open data?

By Chiranthi Rajapakse / Piyumi Gamage (LIRNEasia)

This research explores the factors and informal learning practices that influence inclusion in, and exclusion from, an open data initiative to engage farmers in the effective use of crop advisory agricultural information in Sri Lanka. Walton, Dearden and Densmore (2016) argue that the design of gateways will have an effect on the degree of inclusion within open development initiatives. Mobiles are regularly assumed to be accessible vehicles of open development, but in reality there are many informal learning processes, individual attributes and community dynamics that affect uptake. These aspects can also determine the extent and form by which marginalised people contribute as passive or active users. Our project investigates these claims within an open development initiative that provides crop advisory information to farmers. Qualitative research methods will be used to assess the learning processes by which farmers access the information provided through the mobile app, the effect that factors such as digital literacy, socioeconomic status, literacy, gender, and land ownership status has on their interaction with this information, and the extent that they contribute back to their communities and the system.

Theme 3

Theoretical Project

5. Elements of Trust in an Open Model: Exploring the Role and Place of Trust in Open Education and Urban Services in the Global South

By Richard Ling (Nanyang Technological University) / John Traxler (University of Wolverhampton)

The success of open development and open access critically hinges on the trust shared by the various actors. While open development has the potential to facilitate access to a wide variety of services and information in the Global South, it will founder unless users, developers and other stakeholders have a basic trust in the material and services. This is particularly the case with open health and open learning. We intend to examine trust in openly developed education and health applications. Both of these sectors have key social functionality that is being digitalised. Further both institutions share a focus on knowledge management and authoritative information. Thus, the issues of trust in openly developed and openly accessible services have implications for the management of professional knowledge under the purview of expert practitioners.

Empirical Project

6. Can citizens’ ability to access, participate and collaborate in urban services make the urban governance system more trustworthy?

By Satyarupa Shekhar Swain (Citizen consumer and civic Action Group) / David Sadoway

Our project adds to the discourse on the importance of citizen science in enhancing the trustworthiness in the governance of urban services. This research responds to Ling and Traxler’s theoretical framework by assessing the openness – as defined by access, participation and collaboration – of one key urban service, namely the road and pedestrian infrastructure in Chennai, India. We will examine the extent to which the urban infrastructure governance system has been designed to be ‘trustworthy’. To assess trustworthiness, we will employ an analytical framework that is based on the principles of transparency, accountability and participation. Second, we will assess the perceptions of trust among stakeholders, and attempt to answer how – rather than whether – open access, participation and collaboration influences citizens’ perception of the trustworthiness in government. Third, we will assess the role that an ICT tool may play in improving trust and trustworthiness of the system and stakeholders, including the trust government gives to citizen-generated data.

Theme 4

Theoretical Project

7. A Critical Capability Approach to Open Development

By Yingqin Zheng (Royal Holloway, University of London) / Bernd Carsten Stahl (De Montfort University)

Drawing upon the critical theory of technology/information systems and Sen's capability approach, the Critical Capability Approach (CCA) serves as a conceptual basis for a research framework that could be applied to assess the design, implementation and evaluation of open development projects. Instead of measuring the achievement of technological or political goals, we propose sets of research questions that seek to explicate the ideological and political foundations of openness, and the extent to which openness enhances users' well-being and agency freedom. The research framework aims to equip researchers with some conceptual guidance and methodological suggestions to carry out independent evaluation of open development initiatives, and in this process start a dialogue with policy makers, donors and designers, to engage with all key stakeholders and to protect the interests of the marginalised and disadvantaged. The CCA Research Framework is not sector specific and can be applied to any open development project.

Empirical Project

8. Using the critical capability approach to empirically analyse the design and implementation of the open government initiative on education sector in Tanzania

By Goodiel Moshi / Deo Shao (University of Dodoma)

Governments are promoting openness through publication of open data, believing that it will result in participatory policymaking and enable positive returns to society. Tanzania adopted the Open Data Initiative in 2011. It carried out its open government partnership (OGP) Action Plan I in 2012-2013, and is currently implementing the OGP Action Plan II in 2014 – 2016. In the current phase, the government of Tanzania is committed to publish its data on prioritised sectors particularly Health, Education and Water on its open data portal (www.opendata.go.tz). This study investigates the critical capability approach to evaluate the design and implementation of Open Data Initiative (ODI) in Tanzania within the education sector. Our research analyses whether the design and implementation of the programme was responsible for bringing in a wide range of actors into policy processes and debates, bringing new ideas and thinking on policy making, and stronger public participation in monitoring and citizen feedback, especially those specified by the OGP Action Plan II – particularly academia, media, public administrators and the general public.

Theme 5

Theoretical Project

9. Open development – A focus on organizational norms and power redistribution

By Anita Gurumurthy / Parminder Jeet Singh (IT for Change)

Open development is the employment of ICT-enabled 'openness' towards an improved distribution of power across the intended community of impact. Typically, ICT-based affordances rapidly transform the organisational context of development practice, enhancing organisational outcomes. But affordances cannot be mistaken for norms; the interplay between affordances and norms, and crystallisation of new norms, is critical for moving towards appropriate organisational outcomes. Further, improved distribution of power must occur not merely in the proximity of the '(networked) organising space' but across the intended community of impact. The continuum between the organising and community spaces in 'open initiatives' must be examined critically, especially with regard to governance and distribution of power. Empirical research to trace how norms related to development outcomes are built and sustained in open organisations, and how improved distribution of power in the wider community of impact is caused or not, would help understand and enhance the impact of 'open' practices and organisations on development.

Empirical Project

10. Digitisation as ‘openness’? Mapping electronic governance and shifting politics of land in West Bengal, India

By Sumandro Chattapadhyay (Centre for Internet and Society) / Himadri Chatterjee (Jawaharlal Nehru University)

In West Bengal, India, the BHUCHITRA project has operationalised an upgraded version of the land management information system titled BHUMI that has been implemented in other states of India. The fundamental plan of BHUCHITRA is to have an integrated database that brings together different land administration functions into a ‘single window service’ system available and accessible to the public in general. This research empirically evaluates and frames the transformation of the ‘organising space’ of the BHUCHITRA project, and thus of land governance, in West Bengal. The inquiry focuses on internal transformations in the structure of land governance in West Bengal — including knowledge and skill flows, internal distribution of power, and the making and reconfiguration of the functions of public and private actors — driven by the deployment of the BHUCHITRA project. Simultaneously, the study seeks to follow the ‘governed’ subject, or the recipient of government ‘service,’ into the field of land dispute settlements to understand the impact of this shift in the technologies of governance on the ‘community space’ of the citizens.

Theme 6

Theoretical Project

11. Public Engagement in Open Development: A Knowledge Stewardship Approach

By Katherine Reilly / Juan Pablo Alperin (Simon Fraser University)

Early open development work assumed that the Internet and openness decentralised power and enabled public engagement by disintermediating knowledge production and dissemination. However, over time, new intermediaries have become involved in the delivery of open information and in the stewardship of open knowledge. We have identified five models of intermediation in open development work: decentralised, arterial, ecosystem, bridging and communities of practice. The goal of this project is to produce exploratory research about trends in intermediation across three areas of openness work: open government, open education and open science. How do intermediaries add value, for whom, and where is this value accruing? Does intermediation serve to maintain openness and facilitate public engagement, or does it create new power structures? To answer such questions, we believe it would be productive to identify common trends or tendencies in how different types of intermediaries take on the stewardship of open information across the different domains of open development work.

Empirical Project

12. Understanding the structures and mechanisms that foster stewardship in open development

By Jean-Paul Van Belle / Paul Mungai (University of Cape Town)

Kenya has been at the forefront of open development initiatives since 2011. The open government initiative is the most celebrated, as it was the first to sensitise the country on the value of openness through the Kenya Open Data Initiative (KODI). This research identifies the mechanisms that intermediaries use to produce openness in three areas of open development namely open government, open science and open education. Mechanisms will be linked to the five schools of thought established by Reilly and Alperin, namely, decentralisation, arterial, ecosystems, bridging and communities of practice. This study concentrates on the arterial and ecosystems schools of thought because we intend to resolve the obstacles (marginalised) people face when accessing open data/information by introducing “info-mediaries”. Secondly, the ecosystems school of thought seeks to ensure quality in data and production of value out of this data through intermediaries, and supporting policies and systems. These two schools of thought will act as a lens through which the mechanisms will be tested in the Kenyan context.

Appendix 3 – Journal Article Abstracts of SIRCA III Research Outputs

The Impact of Open Development Initiatives in Lower and Middle Income Countries:

A Review of the Literature

By Caitlin Bentley & Arul Chib

Electronic Journal of Information Systems in Development Countries, Volume 74, Issue 6

The purpose of this paper is to explore the field of open development in lower and middle income countries (LMIC) through a review of literature. We examined 269 articles between 2010 and 2015, that were retrieved through keyword searches of the Scopus database and four ICT4D journals. This article adopts the pathway of effects model to analyze contributions according to inputs, mechanisms and outputs of open initiatives in LMICs. The review finds a fairly even spread of articles across the three stages of effects. Studies that disentangled reasons why or why not openness makes a difference provided the most insight to underlying mechanisms and impact of open initiatives. We found very little evidence that research within this area is concerned with the perspectives of poor and marginalized people – notably women. We therefore question the normative value of open development as a means to transform power relations. However, we argue that a more concentrated vision within this field is needed to exploit the full potential of digitally enabled openness for development.

Intermediation in Open Development: A Knowledge Stewardship Approach

By Katherine M. A. Reilly & Juan P. Alperin

Global Media Journal, Volume 9, Issue 1, pp. 51-71

Open Development (OD) is a subset of ICT4D that studies the potential of IT-enabled openness to support social change among poor or marginalized populations. Early OD work examined the potential of IT-enabled openness to decentralize power and enable public engagement by disintermediating knowledge production and dissemination. However, in practice, intermediaries have emerged to facilitate open data and related knowledge production activities in development processes. We identify five models of intermediation in OD work: decentralized, arterial, ecosystem, bridging, and communities of practice and examine the implications of each for stewardship of open processes. We conclude that studying OD through these five forms of intermediation is a productive way of understanding whether and how different patterns of knowledge stewardship influence development outcomes. We also offer suggestions for future research that can improve our understanding of how to sustain openness, facilitate public engagement, and ensure that intermediation contributes to open development.

Understanding openness through the eyes of Foucault and Bruner:

The case of open development

By Caitlin Bentley, Arul Chib & Sammia Poveda

Revise and resubmit at the Information Systems Journal

Openness has become an important, all-encompassing term denoting activities facilitated by sharing, using, producing and re-distributing information and communication resources within digital information systems (IS). Theoretical advancements on openness emphasize the processes and characteristics of openness, which have been shown to improve productivity and efficiency. What is lacking is a deeper understanding of whether and how openness

influences (or not) structural transformation, defined here as freedom and equality. This paper adopts a critical lens of IS, based on Foucault and Bruner's ideas, to contest normative concepts of openness. The analysis focuses on the case of open development, examining 20 key studies based primarily in developing countries. The critical narrative approach was used to unpack the production of power/knowledge across actors, intentions and outcomes of openness research and practice. We find that discursive formations are reliant on techno-centric and normative ideals of researchers, leading to narratives of hypothetical outcomes that exclude marginalized perspectives. We propose hermeneutic composability and contesting normative narratives of openness as analytical techniques for an integrated, mutually-constitutive conception of interactions between individuals, open artefacts and open social praxis.

Exploring capability and accountability outcomes of open development for the poor and marginalized: An analysis of select literature

By Caitlin Bentley, Arul Chib & Sammia Poveda

Accepted at the Community Informatics Journal

Open development concerns the application of digitally-enabled openness to radically change human capability and governance contexts (Davies & Edwards, 2012; Smith & Reilly, 2013; Smith, Elder, & Emdon, 2011). However, what openness means, and how it contributes to development outcomes is contested (Buskens, 2013; Singh & Gurumurthy, 2013). Furthermore, the potential of open development to support positive social transformation has not yet materialized, particularly for marginalized populations (Bentley & Chib, 2016), partly because relatively little is known regarding how transformation is enacted in the field. Likewise, two promising outcomes – the expansion of human capabilities and accountability – have not been explored in detail. This research interrogates the influence of digitally-enabled openness on transformation processes and outcomes. A purposeful sample of literature was taken to evaluate outcomes and transformation processes according to our theoretical framework, which defines seven cross-cutting dimensions essential to incorporate. We argue that these dimensions explain links between structures, processes and outcomes of open development. These links are essential to understand in the area of Community Informatics as they enable researchers and practitioners to support effective use of openness by and for poor and marginalized communities to pursue their own objectives.

Open collaboration as a set of relations: Open practices of migrant domestic workers at Open University Indonesia

By Caitlin Bentley, Arul Chib & Reidinar Wardoyo

Under review

This study sought to explore open practices – sharing, reusing, remixing and collaborating – of migrant domestic workers in Singapore, who study at the Open University of Indonesia. It investigates alternative strategies to support students achieve educational objectives online. Engaging in open practices helped students to develop confidence and process emotions in order to accomplish schoolwork; however, this emotional work is often considered incidental to educational achievement. In contrast to theory focused on specific educational systems and contexts, this article contributes a theoretical contribution to the area of open collaboration due to our emergent findings that surpassed the educational context. We propose that conceptualizing open collaboration as a set of relations provides researchers and educators



with a means to understand the limiting and enabling conditions that marginalized people face, transcendental to their immediate educational contexts.

Appendix 4 – Theory-building Workshop

Workshop Programme

Sep 30 - Oct 1, 2015 – Bangalore, India

Day 1: Welcome and Warm-up	
9:00-9:30	Arrival and Coffee
9:30-10:00	Welcome <i>Brief introductions and ice-breaker activity</i>
10:00-10:45	SIRCA III Objectives: Reprise Arul Chib and Matthew Smith Open Development review: The current state of the field <i>Caitlin Bentley and Director Arul Chib present early findings from an impact review</i>
10:45-11:00	Tea break
Presentation of Themes <i>Each team presents their theme and theory-building approach. 15 minutes to present and 5 minutes for Q&A, and feedback from group</i>	
11:00-11:20	Open and/or Apolitical? A critical re-examination of Open Information Systems <i>Janaki Srinivasan and Bidisha Chaudhuri</i>
11:25-11:45	Resources, Learning and Inclusion in Open Development <i>Marion Walton, Andy Dearden and Melissa Densmore</i>
11:50-12:10	The role and place of trust in (open) health, well-being, knowing and learning <i>Rich Ling and John Traxler</i>
12:10-1:30	Lunch
1:30-1:50	Building an Evaluative Framework for Open Development – A Critical Capabilities Approach <i>Yingqin Zheng, Bernd Stahl and Kutoma Wkunuma</i>
1:55-2:15	Constructing Open Development – A Study of Organisational Flux, Normative Fluidity and Power Distribution <i>Anita Gurumurthy and Parminder Jeet Singh</i>
2:20-2:40	Engaging Publics in Openness Initiatives <i>Katherine Reilly and Juan Pablo Alperin</i>
2:40-3:00	Tea break
What is Openness? <i>The remaining two sessions are aimed at sharing and understanding each team's approach to openness, and exchange perspectives. The aim is to discuss potential collaborations.</i>	
3:00-3:30	Openness and development – <i>Matthew Smith</i>
3:30-4:30	Finding Connective Pieces <i>Participants self-organise according to the scope and interest of openness presented, and discuss what openness means. Each group prepares a definition/visual representation to be shared and discussed.</i>

4:30-5:00	Wrap-Up and Next Steps
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Day 2: Moving Forward <i>The morning sessions provide teams with time to reflect and begin planning the next stages of the programme.</i>	
9:00-10:00	Mapping SIRCA III: Reflecting on Day 1 outcomes <i>The goal of the session is to create a visual representation of the themes, openness, open development and relationships between them.</i> <i>Secondly, SIRCA Secretariat will seek inputs on the programme timeline, most importantly, the second empirical phase.</i>
10:00-10:45	Planning outputs <i>Teams will plan programme outputs based on shared goals and interests identified in the previous session.</i>
10:45-11:00	Tea break
11:00-12:00	Action Plan <i>Director Arul Chib will review the upcoming timeline, deliverables, and responsibilities. Teams will present next steps, and SIRCA Secretariat will discuss support activities.</i>
Networking and Learning <i>The afternoon and evening sessions invite policymakers and practitioners to share their views on, and expectations of, open development with SIRCA PIs.</i>	
12:00-12:30	Arrival and introductions of special guests
12:30-2:00	Lunch
2:00-3:30	Gathering Insights: Policy Discussion <ul style="list-style-type: none"> • <i>Mr. Sunil Abraham, Executive Director of Centre for Internet and Society</i> • <i>Ms. Jayna Kothari, Partner, Ashira Law Advocates & Solicitors</i> • <i>Dr Smita Srinivas, Director Technological Change Lab and Head of the School for Economic Development at the Indian Institute for Human Settlements</i> • <i>Dr. Rahul De, Hewlett-Packard Chair Professor in Information and Communication Technology (ICT) for Sustainable Economic Development at Indian Institute of Management Bangalore</i>
3:30-4:30	Tea break and arrival of interested publics
4:30-6:30	Mini unconference: open development in practice <i>Open development practitioners and organisations will share their work and interests with SIRCA.</i>
6:30-8:30	Reception and Networking Event

Appendix 5 - Collaboration Workshop

Workshop Programme

June 1 - 2, 2016 – Ann Arbor, Michigan, USA

Day 1: Welcome	
9:00-9:30	Arrival and Coffee
9:30-10:00	Overview of SIRCA III Progress to Date <i>Director Arul Chib presents the goals, direction and achievements of SIRCA III and welcomes new empirical scholars.</i>
10:00-10:30	Introductions
10:30-10:45	Tea break
Project Updates <i>Each team grouping is given 15 minutes to present their theoretical theme and empirical project together. 15 minutes to present and 10 minutes for Q&A.</i>	
10:45-12:45	10:45-11:10 Theme 1: Chiranthi Rajapakse, Andy Dearden, and Melissa Densmore 11:10- 11:35 Theme 2: Goodiel C. Moshi and Yingqin Zheng 11:35-12:00 Theme 3: Satyarupa Shekhar Swain and Rich Ling 12:00-12:25 Theme 4: Janaki Srinivasan and Bidisha Chaudhuri
12:45-14:00	Lunch
14:00-15:00	14:00-14:25 Theme 5: Paul Mungai and Katherine Reilly 14:25-14:50 Theme 6: Anita Gurumurthy
15:00-16:45	Research Design <i>Theoretical and Empirical Teams pair up to work on the research design</i> SIRCA Secretariat engages in administrative services
16:45-17:00	Tea break
17:00-17:15	Re-group on Research Design <i>Teams discuss process and share solutions to progress</i>

Day 2: Team Discussions Continued

The morning sessions provide teams with ample time to finalise their research designs, tools and plans.

9:00-10:30	Methods and Instruments <i>Teams will have more time to plan research methods and examine draft instruments</i>
10:30-10:45	Tea break
10:45-12:45	<i>Teams present combined Research Design (Research Questions [Hypotheses], Methodology, Measures, Expected Results). Each team ten minutes, with ten minutes Q&A.</i> 10:45 Theme 1 11:05 Theme 2 11:25 Theme 3 11:55 Theme 4 12:15 Theme 5 12:35 Theme 6
12:45-1:45	Lunch
Moving Forward <i>The afternoon session is intended to wrap-up and plan the final year of the programme.</i>	
1:45-3:30	Fieldwork Planning and Analysis <i>Teams use this session to discuss research timeline and practical aspects of analysis.</i> SIRCA Secretariat finalize administrative details.
3:30-3:45	Tea break
3:45-5:15	Book Proposal Workshop <i>We will discuss book project plan and build consensus on the general process and timeline.</i> Open session preparation <i>Discussion to prepare for ICTD open session.</i>
7:00-9:00	SIRCA III dinner

Appendix 6 – Publication Workshop

Workshop Programme

May 20 - 21, 2017 – Yogyakarta, Indonesia

Day 1: Arrival and Coffee									
<i>Welcome back!</i>									
9:00-9:30	Overview of the Objectives of the Workshop <ul style="list-style-type: none"> - Develop the over-arching meta-framework, core themes and arguments of the book, allowing for emergent course-correction from contributors - Provide feedback (both peer and editorial) for improvement and increased integration of book chapters - Achieve greater cohesion between theoretical and empirical team chapters - Highlight overlaps between themes, and acknowledge and address conceptual conflicts 								
Peer Review in Groups <p><i>Today's sessions are focused on feedback and cohesion. Each team will review their counterpart, as well as two other sets of papers. The main goal is to compare/contrast theory and empirical papers to suggest improvements and cohesion between team chapters. A designated reporter within each group will take minutes to document suggestions for improvement and cohesion, as well as drawing out emergent themes discussed</i></p>									
9:30-12:00	<u>Chapter Review</u> 1.25 hours per theory and empirical chapter <table border="1"> <thead> <tr> <th>Theme/Authors</th><th>Reviewers</th></tr> </thead> <tbody> <tr> <td>Trust – Rich Ling & David Sadoway</td><td>Katherine Reilly, Paul Mungai & Arul Chib</td></tr> <tr> <td>Critical Capabilities – Yingqin Zheng & Goodiel Moshi</td><td>Parminder Jeet Singh, Sumandro Chattapadhyay & Matthew Smith</td></tr> <tr> <td>Situated Learning – Bidisha Chaudhuri, Janaki Srinivasan, Purnhaba Dasgupta & Linus Kendall</td><td>Andy Dearden, Chiranthi Rajapakse & Caitlin Bentley</td></tr> </tbody> </table>	Theme/Authors	Reviewers	Trust – Rich Ling & David Sadoway	Katherine Reilly, Paul Mungai & Arul Chib	Critical Capabilities – Yingqin Zheng & Goodiel Moshi	Parminder Jeet Singh, Sumandro Chattapadhyay & Matthew Smith	Situated Learning – Bidisha Chaudhuri, Janaki Srinivasan, Purnhaba Dasgupta & Linus Kendall	Andy Dearden, Chiranthi Rajapakse & Caitlin Bentley
Theme/Authors	Reviewers								
Trust – Rich Ling & David Sadoway	Katherine Reilly, Paul Mungai & Arul Chib								
Critical Capabilities – Yingqin Zheng & Goodiel Moshi	Parminder Jeet Singh, Sumandro Chattapadhyay & Matthew Smith								
Situated Learning – Bidisha Chaudhuri, Janaki Srinivasan, Purnhaba Dasgupta & Linus Kendall	Andy Dearden, Chiranthi Rajapakse & Caitlin Bentley								
12:00-12:30	Reporting back <ul style="list-style-type: none"> - Top suggestions for cohesion and improvement - Emergent themes 								
12:30-2:00	Lunch								
2:00-4:30	<u>Chapter Review (Cont'd)</u> <table border="1"> <thead> <tr> <th>Theme/Authors</th><th>Reviewers</th></tr> </thead> <tbody> </tbody> </table>	Theme/Authors	Reviewers						
Theme/Authors	Reviewers								

	Stewardship – Katherine Reilly & Paul Mungai	David Sadoway, Rich Ling & Arul Chib
	Resources and Informal Learning – Andy Dearden, Chiranthi Rajapakse	Purnhaba Dasgupta, Linus Kendall, Janaki Srinivasan, Bidisha Chaudhuri & Caitlin Bentley
	Organisational Flux – Parminder Jeet Singh, Sumandro Chattapadhyay	Yingqin Zheng, Goodiel Moshi & Matthew Smith
4:30-5:30	Reporting back and sorting themes <ul style="list-style-type: none"> - Top suggestions for cohesion and improvement - Final theme sort: identify top 3 themes for Day 2 discussion 	

Day 2: Synthesising Cross-Cutting Themes <i>Today's sessions are focused on drawing out and debating the meta-framework, core themes and arguments of the book.</i>	
9:00-9:30	Themes and arguments 1.0 <i>This session starts the discussion of the over-arching meta-framework, core themes and arguments of the book to situate the group discussions.</i>
9:30-11:30	Thematic group discussions <i>Four small groups of 3-4</i> <ul style="list-style-type: none"> - 1st session: 2 groups of theory members only, 2 groups of empirical members only - 2nd session: 4 groups mixed Objectives: <ul style="list-style-type: none"> - Draw out cross-cutting thematic and theoretical insights - Reflect on methodological strengths and weaknesses
11:30-12:30	Themes and arguments 2.0 <ul style="list-style-type: none"> - Build consensus around over-arching theoretical frameworks and core arguments
12:30-1:30	Lunch
1:30-3:30	Thematic work session <i>Within teams, write a two-page synthesis note to draw out main insights generated within group discussions</i> <ul style="list-style-type: none"> - Page 1: thematic insights in relation to the over-arching framework - Page 2: thematic insights in relation to your specific chapter, how does the theme relate/reflect your chapter?
3:30-4:30	Wrap-up <ul style="list-style-type: none"> - Discuss any remaining issues - Review remaining timeline and deliverables

Appendix 7 – Call for Proposals (Theory Phase)

Strengthening Information Society Research Capacity Alliance (SIRCA) III

2015-2017

CALL FOR PROPOSALS - OPEN DEVELOPMENT

About SIRCA III

SIRCA III is a theory and capacity building research programme that began in April 2015 and will run for a period of two years. SIRCA III will fund research projects led by teams of two senior researchers and/or practitioners investigating open development topics in developing countries in Asia, Africa, or Latin America.

For the purposes of this call, we define Open Development as the strategic application of digitally-enabled openness to help solve a development problem. However, there are diverse meanings of, and interests behind open development. Improving our understanding of open development through research is an increasingly critical activity. The relevance of “open” and “openness” is an emerging area of thought and practice within international development (Bentley, 2014; Braybrooke, Nissila, & Vuorikivi, 2013; Cyranek, 2014; Girard & Perini, 2013; Smith, Elder, & Emdon, 2011; Smith & Reilly, 2013; Smith 2014). Predicated on the increasing spread of information and communication technology (ICT) solutions, new digitally-enabled forms of openness are increasingly being promoted and implemented in developing country contexts. However, evidence is still scant as to whether or not, how, and under what circumstances openness actually contributes to solving development problems. Rigorous research is essential to inform and assess current and future open activities that have positive impact on development and well-being. We elaborate upon this theme in the appendix with our current thinking.

The objectives of the SIRCA III programme are to:

1. Develop and refine cross-cutting Open Development theory;
2. Interrogate, validate, and test emergent theoretical frameworks of Open Development with empirical evidence gathered in developing countries;
3. Communicate theory and research to influencing policy, practice, and public opinion;
4. Build intellectual leadership and critical research skills amongst researchers in developing countries through mentorship by senior research teams.

There will be two phases of SIRCA III, a theoretical phase and an empirical phase. The following two sections explain the deliverables and rationale for each phase.

Phase I: Theoretical Deliverables

During **Phase I**, four senior research teams will **develop cross-cutting theoretical frameworks and a research agenda** in thematic areas of open development. Teams will collaborate with the SIRCA secretariat and SiRC Principal Investigator (PI) through workshops and online shared resources. The purpose of working across all research teams in this manner is to develop high-quality and interdisciplinary research outputs as a means to synthesise frameworks across themes. Through a shared commitment to openness, senior research teams will work together to provide intellectual leadership for the academic community, to engage with public opinion and to influence policy-makers.

Phase I requirements and deliverables are:

1. Management of a literature review towards identifying research goals and questions;
2. Publish the literature review via public and/or open resources (website, DropBox, etc.);
3. Attendance at a workshop in September 2015;
4. Regular and ongoing collaboration with the SIRCA III Secretariat, fellow teams and wider publics; and
5. Delivery of a quality theoretical paper for an edited book or a special issue of a journal.

Phase II: Empirical Deliverables

Phase II envisages testing and/or verifying theory developed in Phase I. SIRCA III will launch a second call for research proposals to select, with guidance from the senior research team, up to two scholars from a developing country. These scholars will conduct research (including data gathering through fieldwork) **to empirically test the cross-cutting theoretical frameworks** in their country. The scholars and the fieldwork will be funded directly by SiRC. However, the senior research teams will be responsible for mentoring and guiding the scholars throughout the research project and will be expected to co-author a final paper as an end result.

Phase II requirements and deliverables are:

- A plan to mentor and share resources with the selected scholar(s);
- All data gathered to be made publicly available in an open format (provided there are no ethical conflicts);
- Attendance at a workshop sometime between July and September 2016;
- Regular and ongoing collaboration with the SIRCA III Secretariat, fellow teams and wider publics; and
- Submission of empirical paper to a possible edited book or a special issue of a journal.

Additional Overall Requirements

Throughout both phases of SIRCA III senior research teams will be involved in disseminating our research through public fora. All research outputs must be made available with a CC-BY open licence. This will include both offline traditional media outlets as well as online and social media. Teams are also responsible for collaborating with the SIRCA III Secretariat and other teams as they generate findings in a regular and ongoing basis. SIRCA III will provide

community and knowledge building support, and will also help with dissemination and coordinating the production of policy briefs, but it will be the responsibility of the senior research teams to participate and provide content for these plans.

Funding Information

SIRCA III is supported by the Information and Networks Programme of the International Development Research Centre of Canada³. SIRCA III will provide funding in both direct and indirect support for each senior research team. Each team will receive funding totalling between SGD\$20-24,000 in four tranches, each disbursement upon completion of the deliverables. The PIs of the research teams must be affiliated with an institution, such as a university or organization. Individuals are not eligible to apply. There are no eligibility restrictions concerning the background and location of the co-PIs. Projects that utilize the budget in a more impactful manner to achieve programmatic goals will be given preference. The following outlines the four tranches and tentative dates for deadlines:

- | | |
|--|-----------------------|
| 1) Project selection; | <i>July 2015</i> |
| 2) Theoretical paper at the end of Phase I; | <i>December 2015</i> |
| 3) Completion of Phase II research project data gathering; | <i>September 2016</i> |
| 4) Submission of final empirical research paper that presents evidence of how the theory was tested and refined. | <i>February 2017</i> |

Each project team will also be subject to the deadlines set out by the SIRCA III Secretariat.

This research project amount allows discretionary funding for the hiring of research assistants and costs associated with managing the project. The second call for proposals will have separate funding to carry out the Phase II fieldwork and data gathering directly from the Secretariat. There will be additional support for research teams to attend two programme workshops and one trip to meet the selected scholar(s) conducting fieldwork.

Research Proposal Requirements

Please refer to Appendix 1 for a brief overview of our current thinking on open development. We are interested in working with research teams that may take an alternate position or interest in open development and who wish to push or develop an open development theme beyond our current thinking.

SIRCA III aims to support the senior research teams at every step of the programme, including during the proposal stage. We ask that interested applicants submit an expression of interest by May 27, 2015. We will subsequently be in touch to ensure that you have the resources and information needed to complete your proposal. To submit an expression of interest, fill out the following online form: <http://www.sirca.org.sg/sirca-iii-expression-of-interest/>

Interested research teams should download and fill-in the SIRCA III proposal form from <http://www.sirca.org.sg/sircaiii-call-for-proposals/>. The form will ask you to outline the following:

³ To learn more about how SIRCA III strategic fit, read the [I&N Prospectus](#).

A. Research project proposal

- An explanation of how the project addresses a cross-cutting open development theme and/or theoretical framework for investigation.
- A preliminary literature review.
- Clearly articulated research question(s).
- Dissemination plan for project results in online and offline media, as well as through academic, public and policy fora.
- A plan for engagement with the selected scholar(s) that will participate in Phase II.

B. Detailed project budget

- Applicants are expected to provide a detailed research budget, indicating clearly their expected costs for the following line items:
 - Personnel⁴
 - Equipment
 - Local Travel
 - Research
 - Supporting Empirical Phase II
 - Other Operating Expenses
 - Declaration of existing funding related to your proposal
- International travel is **not** expected within the submitted project budget. All travel for international workshops/fieldwork will be reimbursed by the SIRCA Secretariat separately.
 - Please use the budget template available at <http://www.sirca.org.sg/sircaiii-call-for-proposals/>. Instructions for each line item and how to account for them are provided in the template.

C. Research timeline

- Projects will run for 18 months from July 2015 until April 2017.
 - Please use the timeline template available at <http://www.sirca.org.sg/sircaiii-call-for-proposals/> and take note of the key dates within this call for proposals to plan your milestones.

D. Qualifications of the Principal Investigators

- Applicants should include a brief overview of the research team's qualifications including past research project grant(s) and their current status, and relevant academic publications. Ideally, each proposal should involve two researchers with multidisciplinary backgrounds.

Review Criteria

Proposals will be reviewed according to the following criteria:

1. Clarity including the literature review, and identification and statement of the research problem.
2. Relevant, cross-cutting open development theme.
3. Significance of the theoretical contribution.

⁴ Personnel expenses may include the hiring of consultants of no more than 50% of the total project budget, there are no restrictions on hiring research assistants.

4. Appropriateness of budget and timeline, with demonstrated impact for budgetary requests,
5. Capacity to support and mentor an emerging scholar through the second phase of the research project.
6. Qualifications of the Principal Investigators.
7. According to open development theme to ensure thematic variation amongst selected projects.

Award and Non-Award Decisions

Acknowledgement of receipt of the proposals will only be made to the PI.

Notification of awards will be sent to PI by July 2015. Written acceptance of the terms and conditions of the award co-signed by the PI, Co-PI and the respective employing organization, must reach regional secretariat within 14 working days from the date of the offer letter.

Applicants for proposals that are not selected for short-listing will receive a notification of decline with a summary of the selection process.

Key Dates (Approximate)

May 6, 2015: Release of SIRCA III Call for Proposals

June 19, 2015: Deadline for proposal submission.

July, 2015: Projects selected and notified.

July 2015 - March 2016: Projects proceed as per stated timeline, with periodic updates on deliverables to the SIRCA secretariat.

September 2015: Attend theory workshop.

December 2015: Submission of theoretical paper at the end of Phase I.

January 2016: Phase II grants awarded.

January – September 2016: Selected Phase II scholar(s) conduct fieldwork/data gathering.

July – September 2016: Senior research team members and selected scholars to attend analysis and publication workshop.

February 2017: Submission of final paper detailing empirical results from Phase II.

The programme will be managed by the Singapore Internet Research Centre, based at the Wee Kim Wee School of Communication and Information, Nanyang Technological University, Singapore, and is supported by the International Development Research Centre (IDRC) of Canada. SIRCA III is led by a steering committee that is composed of four senior members: the SiRC PI, two advisors and 1 senior member from the IDRC. The committee, with SiRC leading, provides high-level direction for the overall SIRCA programme, as well as advising on strategic direction and fund disbursement. The committee oversees major decisions, signs

off on technical reports and financials, and approves selections of thematic groups and research directions.

Appendix 1 – Progress and critiques of open development

There has been a great deal of progress and uptake of Open Development by a variety of actors and individuals within the past five years. Civil society movements mobilising around Open Development have flourished; for example, the Open Knowledge Festival has brought together over 1000 participants from across the globe to share ideas and debate emerging issues over the past three years (Open Knowledge Foundation, 2014). Governments have established Open programmes and commitments to open up and engage citizens through open data and e-government strategies (Madon, 2009; Rahemtulla et al., 2011; McDermott, 2010); as well as to provide better services, like education (Hoosen, 2012). CSOs and networks are applying Open Development tools and concepts to address a range development problems (Ardema, 2012; Making All Voices Count, 2014; Endangered Languages, 2014), as well as to enhance a variety of initiatives and processes (Harvey, 2013; Ndunda, 2012; Young, 2014). Multilateral and bilateral donors are also developing their own Open Development agendas in order to open up their knowledge and experience whilst establishing a means for better governance and accountability of development aid resources (World Bank, 2011; DFID, 2013).

However, what is lacking in progress to date are cross-cutting theoretical frameworks and associated evidence to make clear connections between the promise of Open Development and development outcomes that transpire. A main critique of Open Development is the tendency to “overlook the ever-present dimension of [how] power manifest[s] in new forms of networked relationships. The outward appearance of access, participation, and collaboration can mask less desirable social and political outcomes undermining equity and social justice” (Singh and Gurumurthy, 2013, “The Theory of Openness”).

To illustrate, increasing access to information by making it freely and openly available fails to acknowledge the skills, infrastructure and freedom needed to take advantage of such resources (Gurstein, 2010). Crowdsourcing, although it can be more efficient and effective mode of production, has been shown to maintain existing power relations and favour traditionally dominating perspectives (Graham and Haarstad, 2011). Similarly in open access computer lab facilities, women have been excluded because of existing gender hierarchies and their roles and responsibilities in their home lives (Buskens, 2011). Impact studies of open data initiatives exhibit mixed results, acknowledging that there are still issues related to capacity building, rights and participation that require greater attention (Chattapadhyay, 2013; Beghin and Zigoni, 2014). These studies have pointed to a need for research into how Open Development can be inclusive of, and responsive to marginalized people. Gendered perspectives on Open Development are also severely lacking.

Additionally, institutions such as the World Bank are not showing signs that their commitment to Open Development has drastically changed the way it carries out its work. Easterly and Williamson (2012) analyzed progress of high-volume development aid donors towards ‘best practice’ standards established through high level forums on aid effectiveness. Their analysis

contends that only a small number of exceptions indicate that donors are following identified best practice standards. Whilst opening up information for public scrutiny and use is valuable, there are still a great number of issues to treat that openness as transparency does not fix; such as, donor selectivity and decision-making power of development aid recipients. In this sense, the transformative potential of openness on institutional structures is not well-understood.

Another critique is that Open Development is actually making development worse. Singh and Gurumurthy (2013) argue that information and knowledge distributed through mobiles is often commoditized and establishes entrenching dependencies. Benkler (2010) says that a smart-phone networked environment capable of modelling itself to the open Web would require voluntary large-scale business decisions to give up control of mobile-based infrastructures like apps, or for regulatory intervention to take place at the policy level. The roles and responsibilities of governments, regulatory and international organisations, and how and whether they can interact with private sector interests to create Open Development is not clear.

A further vein of this critique is that the advent of social media platforms and networked socialization are divorcing social movements from the forces that propel fundamental social change (Schlozman, Verba and Brady, 2012). Civil society movements have been successful when masses of people make ethical ideals a reality at all levels of society—business, law and family-life—combined (Edwards, 2009). Hashtag activism is an example of when social movements mobilise around a cause but fail to dismantle the structures that stand in the way of improved human rights and liberation (Filar, 2014). It is not clear what cultural and political conditions are necessary for openness to improve rights, liberation, civic participation and activism.

Lastly, there is also the critique that existing ideas and practices of development condition the ways in which actors approach Open Development, and that Open Development should therefore be understood as embedded within wider global and societal contexts and ideologies. Buskens (2013) implies that Open Development researchers need to critically engage with the intentionality of their efforts in order for this area to fully realise its potential. Although Open Development has presented a wealth of potential and some positive examples, what we should take from lessons in ICT4D is that Open Development is not merely about the possibilities but about what should be done, and that how Open Development is performed has a profoundly moral agenda (Tacchi, 2012; Unwin, 2009). There is also a need to better understand how Open Development could help researchers adapt to and respond to methodological, ethical and theoretical challenges in multi-disciplinary and critically engaged ways.

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Appendix 8 – Research Project Proposal Form (Theory Phase)

1. Research project title

2. Name of researchers, discipline and contact information (ideally two researchers who are trans-disciplinary)

Full name:
Discipline:
Address:
Telephone:
Email:

Full name:
Discipline:
Address:
Telephone:
Email:

3. Cross-Cutting open development theme

4. Explain the significance of this cross-cutting theme to improving our understanding of open development. What will the approach be to developing a theoretical framework for the proposed cross-cutting theme? State the research problem and objectives. Please include a brief literature review as well as the research question(s) (2000 words maximum)

5. Dissemination plan for project results (peer-reviewed literature and online and offline media) (200 words)

6. Structured plan for engagement with selected Phase 2 scholars. How will you share information and communicate openly with your research team? How will you collaborate with the scholar? (200 words)

7. Timeline/Milestones

Please download the timeline template from <http://www.sirca.org.sg/sircaiii-call-for-proposals> and attach it to the end of your application.

8. Budget

Please download the budget template from <http://www.sirca.org.sg/sircaiii-call-for-proposals> and attach it to the end of your application

9. Brief overview of qualifications relevant to open development. Please also include your CVs or an explanation of past research publications and grants received.

Please attach your CV and include any additional information that is relevant here.

Appendix 9 – Proposal Evaluation Form (Theory Phase)

<https://docs.google.com/forms/d/1NltpOtayVOFVN6M6zVV5CULx6hifNg5AThQa0v99Ptg/viewform>

Proposal Title:

PI 1:

Discipline PI1:

PI 2:

Discipline PI2:

PI 3:

Discipline PI3:

PI 4:

Discipline PI4:

Open development category

- ☐ Collaboration
- ☐ Participation
- ☐ Sharing
- ☐ Transparency/Accountability/Responsibilities
- ☐ Values/Beliefs
- ☐ Capabilities/educating/learning
- ☐ Decision-making/Governance
- ☐ Gender/power-related aspects
- ☐ Other:

Research Proposal

Relevance of cross-cutting theme

1	2	3	4	5	6	7	8	9	10
Less relevant									More relevant

Approach to develop the theoretical framework

1	2	3	4	5	6	7	8	9	10
Less realistic									More realistic

Clarity of research problem, objectives and questions

1	2	3	4	5	6	7	8	9	10
Less clear									More clear

Overall quality of the literature review and research proposal

1	2	3	4	5	6	7	8	9	10
Needs work									Excellent

Dissemination plan

Quality of dissemination plan

Variety of ideas and publication avenues identified

1	2	3	4	5	6	7	8	9	10
Needs work									Excellent

Plan for engagement with empirical teams

Quality of engagement plan

Variety of ideas and open practices identified

1	2	3	4	5	6	7	8	9	10
Needs work									Excellent

Qualifications

Strengths of applicants:

Weaknesses of applicants:

Attached documents

Additional template documents supplied

- ☐ Yes
- ☐ No
- ☐ Problems identified

Overall

Overall quality and completeness of proposal

1	2	3	4	5	6	7	8	9	10
Needs work									Excellent

Recommendation:

Additional comments/reason for recommendation:

Appendix 10 – Call for Proposal (Empirical Phase)

Strengthening Information Society Research Capacity Alliance (SIRCA) III

PHASE II CALL FOR PROPOSALS – OPEN DEVELOPMENT

SIRCA III is a theory and capacity building research programme run by the SiRC (Singapore Internet Research Centre) that began in April 2015 and will run until May 2017. SIRCA III has already funded six projects led by teams of two senior researchers and/or practitioners to develop cross-cutting open development theoretical frameworks. This call seeks research proposals to empirically test these theoretical frameworks in developing countries in Asia, Africa, or Latin America.

The purpose of the SIRCA III programme is to deepen our understanding as to whether, how, for whom, and in what circumstances **the free, networked, public sharing of digital (information and communication) resources contribute towards (or not) a process of positive social transformation.**

The programme is organised into two phases, a theoretical phase (Phase I) and an empirical phase (Phase II). Researchers who submit successful project proposals will join SIRCA III as a **Phase II scholar.**

SIRCA III Research Themes and Theoretical Frameworks

During Phase I, inter-disciplinary teams tackled six cross-cutting themes of open development. We are currently accepting **Phase II proposals** to research these themes specifically and exclusively. Descriptions of the projects, research questions and hypotheses are available in detail on our [website](#). We also encourage you to read a forthcoming publication on open development [here](#).

Interested **Phase II applicants** are asked to propose a research project that responds to one of the following frameworks (Click on links or see Appendix 1 for framework details):

1. [Open and/or Apolitical? A critical re-examination of Open Information Systems](#) by Janaki Srinivasan and Bidisha Chaudhuri, International Institute of Information Technology Bangalore
2. [Resources, Learning and Inclusion in Open Development](#) by Marion Walton, University of Cape Town, Andy Dearden, Sheffield Hallam University, Melissa Densmore, University of Cape Town
3. [Elements of Trust in an Open Model: Exploring the Role and Place of Trust in Open Education and Urban Services in the Global South](#) by Rich Ling, Nanyang Technological University, John Traxler, University of Wolverhampton
4. [A Critical Capability Approach to Open Development](#) by Yingqin Zheng, Royal Holloway University of London, Bernd Carsten Stahl, De Montfort University
5. [Open development – A focus on organizational norms and power redistribution](#) by Anita Gurumurthy, Parminder Jeet Singh, IT for Change
6. [Public Engagement in Open Development: A Knowledge Stewardship Approach](#) by Katherine Reilly, Juan Pablo Alperin, Simon Fraser University

Pre-existing projects that do not relate substantively to one of the SIRCA III open development themes listed above will not be considered. Please examine the [materials for each project and related literature](#), and then formulate your research design to test or validate the stated research questions and hypotheses.

Phase II: Empirical Deliverables

Phase II scholars will collaborate with the Phase I senior research team and will receive periodic support and guidance in addition to funding for the research project. Phase II scholars will conduct research (including data gathering through fieldwork) **to empirically inform the cross-cutting theoretical frameworks** in a developing country. Phase II scholars will receive funding for project-related expenses and travel to SIRCA workshops directly from SiRC. However, Phase II scholars will be responsible for working closely with the Phase I senior research team throughout the research project and will be expected to co-author a final paper as an end result.

Phase II requirements and deliverables are:

- A written methodology including ethical concerns, access to and selection of participants, data collection tools, analysis and background information related to the context of research;
- Preparation of periodic reports such as mid-term progress report and end-of-project report;
- Attendance at a workshop before ICTD 2016 in June at Ann Arbor, Michigan, and another in May 2017 to finalise research outputs for publication; and
- Submission of empirical paper to a possible edited book or a special issue of a journal.

Additional Overall Requirements

Phase I teams and Phase II scholars will be involved in disseminating SIRCA III research through public fora. All research outputs must be made available with a CC-BY open license. This will include both offline traditional media outlets as well as online and social media. The SIRCA III Secretariat will provide support with dissemination and coordinating the production of policy briefs, but Phase II scholars are responsible to participate and provide content for these plans.

Eligibility

You may apply for research funding as a Phase II scholar for SIRCA III, only if you are:

- affiliated with an academic, government, research, or civil society institution or consortium; funds will be disbursed to your organization of employment and not directly to you;
- from a country listed in Appendix 2; and
- remain in the country of the proposed research throughout the grant period/research project.

Funding Information

Each selected grant recipient will be provided with:

- up to SGD\$8,000 for a maximum period of support of no more than 12 months of discretionary research funding and fieldwork travels.
- least-cost travel and per diems to attend requisite SIRCA workshops and conferences.

Research Proposal Requirements

Applicants are expected to submit a proposal application [form](#), [budget](#), [timeline](#), and CV. Please refer to Appendix 1 for a brief overview of the SIRCA III cross-cutting theoretical frameworks under investigation. SIRCA III aims to support Phase II scholars at every step of the programme, including during the proposal stage. We ask that interested applicants contact sirca@ntu.edu.sg with questions and/or early drafts of proposals for feedback before submission.

Interested research teams should download and fill-in the SIRCA III proposal form [here](#). The form will ask you to outline the following:

E. Research project proposal

- Clearly state the Phase I theoretical framework that you will investigate.
- Clearly articulated research question(s).
- Explain how your project will empirically test, validate and/or evaluate the theoretical framework.
- Description of case/context of research in relation to literature.
- A preliminary methodology including ethical concerns and risk assessment.
- Detail beneficiaries, individuals and groups, that would benefit and how you will gain access to them.
- A plan to communicate progress and results with SIRCA and the Phase I senior research team.
- Dissemination plan for results in online and offline media, plus academic, public and policy fora.

F. Detailed project budget

- Applicants are expected to provide a detailed research budget, using the template available [here](#). Please follow instructions in the template to indicate expected costs for the following line items:
 - Personnel⁵
 - Equipment
 - Local Travel
 - Research
 - Other Operating Expenses
 - Declaration of existing funding related to your proposal

G. Research timeline

- Projects Applicants are expected to provide a detailed research timeline, using the template available [here](#). Indicating clearly project milestones and completion times (in terms of weeks or months). Please consult the **Key Dates** section to construct your project timeline within the SIRCA III programme time frame.

⁵ Personnel expenses may include the hiring of research assistants and consultants of no more than 50% of the total project budget.

H. Qualifications of the Phase II scholar(s)

- Applicants should include a CV that lists qualifications including past research project grant(s) and their current status, relevant academic publications and two references with their contact details. Up to two researchers can submit a proposal. Emerging junior scholars are encouraged to apply.

Review Criteria

Proposals will be reviewed according to the following criteria:

1. Clarity of the proposal and quality of writing;
2. Relevance and fit with one of the six Phase I themes;
3. Adequacy of methodological rigor and capacity to empirically test the Phase I theoretical framework;
4. Access to and significance of the research to the beneficiary group;
5. Quality of research record and referee recommendations;
6. Interest and research potential of the applicant.

Award and Non-Award Decisions

Acknowledgement of receipt of the proposals will only be made to the applicant. Notification of awards will be sent to the respective employing organizations and copied to the empirical scholar normally not exceeding one (1) month from the submission deadline. Written acceptance of the terms and conditions of the award co-signed by the applicant and the respective employing organization, must reach SIRCA secretariat within ten (10) working days from the date of the offer letter.

Applicants for proposals that are not selected for short-listing will receive a notification of decline.

Key Dates (Approximate)

March 20, 2016: Deadline for proposal submission.

April 2016: Phase II grants awarded.

June 1-6 2016: SIRCA III Workshop and Open Session at ICTD 2016 Ann Arbor, Michigan.

June 2016 – April 2017: Selected Phase II scholar(s) conduct fieldwork/data gathering.

April 2017: Submission of final paper detailing empirical results from Phase II.

May 2017: Theoretical and Empirical team members to attend publication workshop.

The programme will be managed by the **Singapore Internet Research Centre**, based at the Wee Kim Wee School of Communication and Information, Nanyang Technological University, Singapore, and is supported by the International Development Research Centre (IDRC) of Canada. SIRCA III is led by a steering committee that is composed of the SiRC Director, Assoc. Prof. Arul Chib and a senior member from the IDRC. The committee, with SiRC leading,

provides high-level direction for the overall SIRCA programme, as well as advising on strategic direction and fund disbursement. The committee oversees major decisions, signs off on technical reports and financials, and approves selections of thematic groups and research directions.

Appendix 1 – Phase I Themes and Theoretical Frameworks

1. Open and/or Apolitical? A critical re-examination of Open Information Systems

By Janaki Srinivasan / Bidisha Chaudhuri (International Institute of Information Technology, Bangalore)

This project proposes a theoretical framework to analyse the phenomenon of learning among users of open information systems (OIS) in which learning is taken to be indicative of positive social transformation. In order to understand how learning takes place in the context of OIS use through the interaction of structures and agency, we draw on practice-based situated theories of learning and critical information studies. Such theories prompt us to adopt a broader process view of learning as an everyday practice that shapes individual identity which can be then leveraged to negotiate varied life situations beyond the immediate learning of how to use an OIS. Based on this understanding of learning, we develop a framework that will critically examine different levels of learning occurring within a matrix of communities of practice (CoPs) specifically in the context of OIS use. The broader objective of this framework is to unravel the different opportunities of learning (as development) that OIS provide which were hitherto unavailable to its users.

[View Framework](#)

2. Resources, Learning and Inclusion in Open Development

By Marion Walton (University of Cape Town) / Andy Dearden (Sheffield Hallam University) / Melissa Densmore (University of Cape Town)

Engaging with open development (OD) necessitates learning in which people appropriate and adopt new technologies and socio-technical practices. This typically involves informal learning (i.e. outside of formal education), and will differ between reading relationships (as a user of OD resources) and writing relationships (for full ownership or authorship of OD). If potential participants are unable to connect with existing learning networks, OD initiatives will have limited impact. Communities that aim to be ‘open’ may exclude people by virtue of race, language, literacies, gender, sexuality, phone/computer ownership, access to Internet or other aspects of identity. This project will explore the situated material conditions and informal learning practices that surround processes of inclusion in (and exclusion from) OD initiatives. The project will develop more detailed ethnographic and socio-material accounts of the informal learning processes and outcomes in such encounters. It will foreground the ways that global inequities of infrastructure, default identities and the cultural practices often associated with openness can “format” participation in subtle but significant ways.

3. Elements of Trust in an Open Model: Exploring the Role and Place of Trust in Open Education and Urban Services in the Global South

By Richard Ling (Nanyang Technological University) / John Traxler (University of Wolverhampton)

The success of open development and open access critically hinges on the trust shared by the various actors. While open development has the potential to facilitate access to a wide variety of services and information in the Global South, it will founder unless users, developers and other stake holders have a basic trust in the material and services. This is particularly the case with open health and open learning. We intend to examine trust in openly developed education and health applications. Both of these sectors have key social functionality that is being digitalized. Further both institutions share a focus on knowledge management and authoritative information. Thus, the issues of trust in openly developed and openly accessible services have implications for the management of professional knowledge under the purview of expert practitioners.

[View Framework](#)

4. A Critical Capability Approach to Open Development

By Yingqin Zheng (Royal Holloway, University of London) / Bernd Carsten Stahl (De Montfort University)

Drawing upon the critical theory of technology/information systems and Sen's capability approach, the Critical Capability Approach (CCA) serves as a conceptual basis for a research framework that could be applied to assess the design, implementation and evaluation of open development projects. Instead of measuring the achievement of technological or political goals, we propose sets of research questions that seek to explicate the ideological and political foundations of openness, and the extent to which openness enhances users' well-being and agency freedom. The research framework aims to equip researchers with some conceptual guidance and methodological suggestions to carry out independent evaluation of open development initiatives, and in this process start a dialogue with policy makers, donors and designers, to engage with all key stakeholders and to protect the interests of the marginalised and disadvantaged. The CCA Research Framework is not sector specific and can be applied to any open development project. Researchers are encouraged to select, adapt and integrate some of the suggested research questions in accordance to the context and conditions of a particular project.

[View Framework](#)

5. Open Development – A Focus on Organizational Norms and Power Redistribution

By Anita Gurumurthy / Parminder Jeet Singh (IT for Change)

Open development is the employment of ICT-enabled ‘openness’ towards an improved distribution of power across the intended community of impact. Typically, ICT-based affordances rapidly transform the organisational context of development practice, enhancing organisational outcomes. But affordances cannot be mistaken for norms; the interplay between affordances and norms, and crystallisation of new norms, is critical for moving towards appropriate organisational outcomes. Further, improved distribution of power must occur not merely in the proximity of the ‘(networked) organisational space’ but across the intended community of impact. The continuum between the organisational and community spaces in ‘open initiatives’ must be examined critically, especially with regard to governance and distribution of power. Empirical research to trace how norms related to development outcomes are built and sustained in open organisations, and how improved distribution of power in the wider community of impact is caused or not, would help understand and enhance the impact of “open” practices and organisations on development.

[View Framework](#)

6. Public Engagement in Open Development: A Knowledge Stewardship Approach

By Katherine Reilly / Juan Pablo Alperin (Simon Fraser University)

Early open development work assumed that the Internet and openness decentralised power and enabled public engagement by disintermediating knowledge production and dissemination. However, over time, new intermediaries have become involved in the delivery of open information and in the stewardship of open knowledge. We have identified five models of intermediation in open development work: decentralised, arterial, ecosystem, bridging and communities of practice. The goal of this project is to produce exploratory research about trends in intermediation across three areas of openness work: open government, open education and open science. How do intermediaries add value, for whom, and where is this value accruing? Does intermediation serve to maintain openness and facilitate public engagement, or does it create new power structures? To answer such questions, we believe it would be productive to identify common trends or tendencies in how different types of intermediaries take on the stewardship of open information across the different domains of open development work.

[View Framework](#)

Appendix 2 – List of Eligible Countries

Afghanistan	Mali
Armenia	Mauritania
Bangladesh	Mozambique
Benin	Myanmar
Bhutan	Nepal
Burkina Faso	Niger
Burundi	Nigeria
Cabo Verde	Occupied Palestine Territories
Cambodia	Pakistan
Cameroon	Philippines
Central African Republic	Rwanda
Chad	São Tomé and Príncipe
Comoros	Senegal
Congo, Dem. Rep.	Sierra Leone
Côte d'Ivoire	Somalia
Djibouti	South Africa
Eritrea	South Sudan
Ethiopia	Sri Lanka
Gambia, The	Sudan
Georgia	Swaziland
Ghana	Syrian Arab Republic
Guinea	Tajikistan
Haiti	Tanzania
India	Togo
Indonesia	Uganda
Kenya	Ukraine
Korea, Dem Rep.	Uzbekistan
Kyrgyz Republic	Vanuatu
Lao PDR	Vietnam
Lesotho	West Bank and Gaza
Liberia	Yemen, Rep.
Madagascar	Zambia
Malawi	Zimbabwe

Appendix 11 – Proposal Evaluation Form (Empirical Phase)

Proposal Evaluation Process

1. Proposals were initially reviewed for completeness by the SIRCA Secretariat using the Evaluation Form (Appendix 2). Proposals that were not empirical in nature, or failed to address Open Development, were immediately rejected.
2. Proposals were reviewed independently by relevant Theoretical teams.
3. Proposals were reviewed independently by the Steering Committee.
4. The evaluation results were then consolidated and proposals were aligned with appropriate thematic focus.

Proposal Evaluation Form

Research Proposal

Relevance of the case or context of study

	1	2	3	4	5	6	7	8	9	10	
Less relevant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	More relevant

Research question responds to the theoretical framework

Unresponsive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Highly responsive
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Proposal engaged with the material in the white paper

Not at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very well
------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------

Design of methodology was realistic

Unrealistic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Realistic
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Capacity of the project to test or evaluate the theoretical framework

Poor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Excellent
------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------

Capacity to gain access to the case study/initiative

Poor ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Excellent

Adequate engagement with ethical concerns

Poor ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Excellent

Risk level adequately assessed and mitigated

Poor ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Excellent

Overall quality of the research proposal

Poor ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Excellent

Comment on overall quality of research proposal

Quality of dissemination plan (Variety of ideas and publication avenues identified)

Poor ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Excellent

Quality of communication plan

Poor ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Excellent

Qualification of applicants

Weak ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Strong

Comment on applicant qualification

Recommendation

IMPORTANT: Additional comments/reason for recommendation

For those that are recommended or short-listed, please include areas for improvement here:

Appendix 12 – ICTD 2016 Open Session

Topic and Goals of the Session

Reilly and Smith (Reilly & Smith, 2013) argued that open models can contribute towards positive development outcomes; however, researchers do not typically explicitly state their intentions in this regard. For example, adoption factors of open educational resources have been widely examined (Kursun, Cagiltay, & Can, 2014; Mtebe & Raisamo, 2014; Percy & Van Belle, 2012), yet links to development outcomes, or to wider transformative knowledge sharing processes are harder to come by. Likewise, this tendency is observed in other open development niches like the uptake and use of open government data (AlAnazi & Chatfield, 2012; Matheus, Vaz, & Ribeiro, 2014), or reasons why people might participate in a crowdsourcing community (Chris Zhao & Zhu, 2014; van Etten, 2011). These tendencies reflect theory building in silos, that does not establish the value of ICT-enabled openness in development and across domains. The SIRCA programme aims to overcome some of these pitfalls by intentionally developing cross-cutting theoretical frameworks that can be applied across domains. In summer 2015, six inter-disciplinary teams of two researchers were selected and are working on cross-cutting themes.

The first half of the session will be an interactive session that debates open development and what connects this area to ICTD. There will also be time to allow SIRCA PIs to introduce their cross-cutting theoretical framework. Their topics are:

1. Open and/or Apolitical? A critical re-examination of Open Information Systems by Janaki Srinivasan / Bidisha Chaudhuri (International Institute of Information Technology, Bangalore).
2. Resources, Learning and Inclusion in Open Development by Marion Walton (University of Cape Town) / Andy Dearden (Sheffield Hallam University) / Melissa Densmore (University of Cape Town)
3. Elements of Trust in an Open Model: Exploring the Role and Place of Trust in Open Education and Urban Services in the Global South by Richard Ling (Nanyang Technological University) / John Traxler (University of Wolverhampton)
4. Building an Evaluative Framework for Open Development – A Critical Capabilities Approach by Yingqin Zheng (Royal Holloway, University of London) / Bernd Carsten Stahl (De Montfort University)
5. Constructing Open Development: A Study of Organisational Flux, Normative Fluidity and Power Distribution by Anita Gurusurthy / Parminder Jeet Singh (IT for Change)
6. Public Engagement in Openness Initiatives by Katherine Reilly / Juan Pablo Alperin (Simon Fraser University)

The second half of the session will enable participants to work closely with a SIRCA team including the PI and scholars selected for the second phase in small groups. This will provide

ample opportunity for participants to voice their own opinions on the benefits and challenges of their approaches, and to work as a group to interrogate each theoretical framework. Participants will not need to have extensive knowledge of open development or to be an academic for that matter. Each participant will have an opportunity to apply their own skills and ideas to the group discussion, with direct feedback and discussion with leading scholars in this area (the SIRCA PIs).

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Appendix 13 – Open Call for Book Chapters

Strengthening Information Society Research Capacity Alliance (SIRCA) III

CALL FOR PROPOSALS – BOOK CHAPTERS ON OPEN DEVELOPMENT

SIRCA III is a theory and capacity building research programme run by the SiRC (Singapore Internet Research Centre) that began in April 2015 and will run until May 2017. SIRCA III has funded six projects led by teams of two senior researchers and/or practitioners to develop cross-cutting open development theoretical frameworks. Another five projects have been funded to test these theoretical frameworks. This call seeks proposals for book chapter proposals on cross-cutting open development themes, critiques and responses to our existing theoretical frameworks, and any related critical or empirical research on open development.

The purpose of the SIRCA III programme is to deepen our understanding as to whether, how, for whom, and in what circumstances **the free, networked, public sharing of digital (information and communication) resources contribute towards (or not) a process of positive social transformation.**

SIRCA III is producing the first volume of a two-part book series titled: ***“Critical perspectives on open development: Empirical investigation of theory construction”*** to be published in 2017 by a major university press.

SIRCA has pursued an open and rigorous process to select projects for open development theory building and empirical interrogation, but there were many qualified and important perspectives that we were unable to fund due to our resource capacity. This opportunity is open to anyone that has a critical, cross-cutting, or empirically-tested perspective that will add insight to our main research question.

Key Dates (Approximate)

- Abstract submission deadline: July 15, 2016
- Abstract feedback: Sept 1, 2016
- Draft chapter due: December 1, 2016
- Decision on inclusion within the book volume: January 31, 2017
- 2nd draft of chapter due: March 31, 2017
- Submission of final book chapter: May 15, 2017

Submission Requirements

Please submit your **maximum one page chapter abstract** to sirca@ntu.edu.sg by July 15, 2016. Include within your submission a title for the chapter, your name(s) and institution(s). Please ensure that you explain within your abstract how and why your proposed chapter is positioned within this book volume. **Authors are encouraged to engage directly with our emerging frameworks** (see Appendix 1).

Appendix 1 - Preliminary Book Outline

Several factors are coming together that put pressure on the international development community: the economic crises, shifting geographies of poverty and marginalisation, and increasing recognition that ICTs are a pervasive source of inequality. Innovative forms of public sharing and organising via digital information and communication resources have disrupted the status quo in many important ways, offering a new avenue to influence policies and procedures. These new forms are inter-connected by openness, with a common heritage towards inclusion and decentralised collaboration. Yet very little is known regarding the circumstances that the free, networked, public sharing of digital information and communication resources contributes towards a process of positive social transformation, particularly in the case of poor and marginalised populations. *Critical Perspectives on Open Development: Empirical Interrogation of Theory Construction* explores cross-cutting open development themes and critiques the legitimacy and overall purpose of open development.

The book pushes past a theoretical level of engagement with open development and puts the authors' theories and assumptions to the test. Cross-cutting themes were empirically tested in Asia and sub-Saharan Africa and the authors subsequently reflect on how and why to improve their theoretical frames. *Critical Perspectives on Open Development* therefore combines theoretical views with their practical application and critically reflects on such an approach, yielding a valuable source of reference for this emerging area of research. The book also proposes a new model of research within the area of ICT for development as a means to reduce the growing disparities between the potential and realities for ICT to have a positive impact on development.

Introduction: Arul Chib and Caitlin Bentley, Nanyang Technological University

Part 1: Theory

1. [Resources, Learning and Inclusion in Open Development](#)

Marion Walton, University of Cape Town, Andy Dearden, Sheffield Hallam University, and Melissa Densmore, University of Cape Town

Engaging with open development (OD) necessitates learning in which people appropriate and adopt new technologies and socio-technical practices. This typically involves informal learning (i.e. outside of formal education), and will differ between reading relationships (as a user of OD resources) and writing relationships (for full ownership or authorship of OD). If potential participants are unable to connect with existing learning networks, OD initiatives will have limited impact. Communities that aim to be 'open' may exclude people by virtue of race, language, literacies, gender, sexuality, phone/computer ownership, access to Internet or other aspects of identity. This chapter will explore the situated material conditions and informal learning practices that surround processes of inclusion in (and exclusion from) OD initiatives. It will foreground the ways that global inequities of infrastructure, default identities and the cultural practices often associated with openness can "format" participation in subtle but significant ways.

2. [Public Engagement in Open Development: A Knowledge Stewardship Approach](#)

Katherine Reilly and Juan Pablo Alperin, Simon Fraser University

Early open development work assumed that the Internet and openness decentralized power and enabled public engagement by disintermediating knowledge production and dissemination. However, over time, new intermediaries have become involved in the delivery of open information and in the stewardship of open knowledge. We have identified five models of intermediation in open development work: decentralised, arterial, ecosystem, bridging and communities of practice. The goal of this chapter is to explore trends in intermediation across three areas of openness work: open government, open education and open science. How do intermediaries add value, for whom, and where is this value accruing? Does intermediation serve to maintain openness and facilitate public engagement, or does it create new power structures? To answer such questions, it is productive to identify common trends or tendencies in how different types of intermediaries take on the stewardship of open information across the different domains of open development work.

3. [Elements of Trust in an Open Model: Exploring the Role and Place of Trust in Open Education and Urban Services in the Global South](#)

Rich Ling, Nanyang Technological University, John Traxler, University of Wolverhampton and Anuradha Rao, Nanyang Technological University

It is clear that open development can potentially lower the threshold to access IT-based applications for a variety of positive purposes. The chapter investigates the various ways that trust – its absence, presence, or loss and recovery – could potentially impact the effectiveness and operations of an open system. We examine the cultivation, evaluation and maintenance of trust in various open systems by different stakeholders, including users, developers, consumers, as well as the external people and institutions that are connected to or interact with the system. In what ways is trustworthiness incorporated into the development and routine functioning of an open system? How do users develop a sense of trust in the relationships and material on the open systems? Is “gaming” the information on open systems a problem for users and/or developers, and how is this dealt with? These questions are important when considering the efficacy of open development, particularly in the Global South, where empirical studies have not kept pace with the explosion of open initiatives in urban and peri-urban areas.

4. [Open and/or Apolitical? A Critical Re-Examination of Open Information Systems](#)

Janaki Srinivasan and Bidisha Chaudhuri, International Institute of Information Technology Bangalore

This project proposes a theoretical framework to analyse the phenomenon of learning among users of open information systems (OIS) in which learning is taken to be indicative of positive social transformation. In order to understand how learning takes place in the context of OIS use through the interaction of structures and agency, we draw on practice-based situated theories of learning and critical information studies. Such theories prompt us to adopt a broader processual view of learning as an everyday practice that shapes

individual identity which can be then leveraged to negotiate varied life situations beyond the immediate learning of how to use an OIS. Based on this understanding of learning, we develop a framework that will critically examine different levels of learning occurring within a matrix of communities of practice (CoPs) specifically in the context of OIS use. The broader objective of this framework is to unravel the different opportunities of learning (as development) that OIS provide which were hitherto unavailable to its users.

5. **Open development – A Focus on Organisational Norms and Power Redistribution**

Anita Gurumurthy and Parminder Jeet Singh, IT for Change

Open development is the employment of ICT-enabled 'openness' towards an improved distribution of power across the intended community of impact. Typically, ICT-based affordances rapidly transform the organisational context of development practice, enhancing organisational outcomes. But affordances cannot be mistaken for norms; the interplay between affordances and norms, and crystallisation of new norms, is critical for moving towards appropriate organisational outcomes. Further, improved distribution of power must occur not merely in the proximity of the '(networked) organising space' but across the intended community of impact. The continuum between the organising and community spaces in 'open initiatives' must be examined critically, especially with regard to governance and distribution of power.

6. **A Critical Capability Approach to Open Development**

Yingqin Zheng, Royal Holloway University of London and Bernd Carsten Stahl, De Montfort University

Drawing upon the critical theory of technology/information systems and Sen's capability approach, the Critical Capability Approach (CCA) serves as a conceptual basis for a research framework that could be applied to assess the design, implementation and evaluation of open development projects. Instead of measuring the achievement of technological or political goals, we propose sets of research questions that seek to explicate the ideological and political foundations of openness, and the extent to which openness enhances users' well-being and agency freedom. The research framework aims to equip researchers with some conceptual guidance and methodological suggestions to carry out independent evaluation of open development initiatives, and in this process start a dialogue with policy makers, donors and designers, to engage with all key stakeholders and to protect the interests of the marginalised and disadvantaged. The CCA Research Framework is not sector specific and can be applied to any open development project.

Part 2: Case Studies on Empirical Interrogation of Theory

7. How do Farmers' Digital Literacy Levels Influence their Ability to Benefit from Open Data?

By Chiranthi Rajapakse and Piyumi Gamage, LIRNEasia

This research explores the factors and informal learning practices that influence inclusion in, and exclusion from, an open data initiative to engage farmers in the effective use of crop advisory agricultural information in Sri Lanka. Walton, Dearden and Densmore (2016) argue that the design of gateways will have an effect on the degree of inclusion within open development initiatives. Mobiles are regularly assumed to be accessible vehicles of open development, but in reality there are many informal learning processes, individual attributes and community dynamics that affect uptake. These aspects can also determine the extent and form by which marginalised people contribute as passive or active users. Our project investigates these claims within an open development initiative that provides crop advisory information to farmers. Qualitative research methods will be used to assess the learning processes by which farmers access the information provided through the mobile app, the effect that factors such as digital literacy, socioeconomic status, literacy, gender, and land ownership status has on their interaction with this information, and the extent that they contribute back to their communities and the system.

8. Understanding the Structures and Mechanisms that Foster Stewardship in Open Development

By Jean-Paul Van Belle and Paul Mungai, University of Cape Town

Understanding the structures and mechanisms that foster stewardship in open development (in Kenya). We extend a previous study which helped identify candidate mechanisms that intermediaries use to produce openness in three areas of open development namely open government, open science and open education in Kenya. This study will focus on the arterial intermediaries and ecosystems. The arterial school aims to resolve obstacles (marginalized) people face when accessing open data/information by introducing "info-mediaries." The ecosystems school of thought seeks to ensure quality in data and production of value out of this data through intermediaries, and supporting policies and systems.

9. Can Citizen Science Enhance Trust in City Governance and Advance Urban Informatics?

By Satyarupa Shekhar Swain and David Sadoway, Citizen Consumer and Civic Action Group

This chapter adds to the discourse on the importance of citizen science in enhancing the trustworthiness of the governance of urban services. Our research responds to Ling and Traxler's theoretical framework by assessing the openness – as defined by access, participation and collaboration – of one key urban service, namely the road and pedestrian infrastructure in Chennai, India. We will examine the extent to which the urban infrastructure governance system has been designed to be 'trustworthy'. To assess trustworthiness, we will employ an analytical framework that is based on the principles of

transparency, accountability and participation. Second, we will assess the perceptions of trust among stakeholders, and attempt to answer how – rather than whether – open access, participation and collaboration influences citizens' perception of the trustworthiness in government. Third, we will assess the role that an ICT tool may play in improving trust and trustworthiness of the system and stakeholders, including the trust government gives to citizen-generated data.

10. Using the Critical Capability Approach to Empirically Analyse the Design and Implementation of the Open Government Initiative within the Education Sector in Tanzania

By Goodiel C. Moshi and Deo Shao, University of Dodoma

Governments are promoting openness through publication of open data, believing that it will result in participatory policymaking and enable positive returns to society. This research investigates the critical capability approach to assess the design, implementation and evaluation of the Tanzania's open government partnership (OGP) Action Plan II as a case study. Tanzania adopted the Open Data Initiative (ODI) in 2011. It carried out its OGP Action Plan I in the period 2012-2013, and is currently implementing the OGP Action Plan II in 2014 – 2016. In the current phase, the government of Tanzania is committed to publish its data on prioritised sectors particularly Health, Education and Water on its open data portal (www.opendata.go.tz). This study analyses how the open data initiative has evolved, and how technology and ODI stakeholders shaped each other during the OGP Action Plan II. Additionally, our research critically examines how the evolution of the open data initiative has impacted the well-being of its direct and indirect beneficiaries.

11. Exploring the role of “learning as development” in open information systems – a case study from West Bengal, India

Linus Kendall, Sheffield Hallam University & Purnabha Dasgupta, Development Research Communication & Services Center

In this case study, we investigate linkages between openness, learning and development through a case study of an information system focused on the dissemination of weather information and agricultural advice. We investigate openness as realised through a set of practices, resulting in development outcomes through processes of informal and situated learning. This contrasts with much of the existing empirical research which locates openness as a property of the system or the information provided through it. We illuminate how the weather system has been adopted by communities in their everyday practices as well as how and why openness influences social practices of learning created, enabled or supported by the system. By doing so, we move towards an analysis of the mechanisms of change in the intervention along with various characteristics of that mechanism rather than focussing merely on the outcomes of the intervention.

Conclusion: Caitlin Bentley and Matthew Smith, International Development Research Centre