



openAIR
AFRICAN INNOVATION RESEARCH

**The Open African Innovation
Research Network**

*Recognizing Africa in
Global Knowledge Economy*

Annual Report 2016

From Project to Partnerships

Contents

SYNTHESIS	4	KNOWLEDGE MOBILISATION AND ACHIEVEMENTS	28
About us	4	New knowledge mobilisation strategy	28
A time of transition	7	Engagement, outputs and achievements	29
THE RESEARCH PROBLEM AND SOLUTION	8	New and Emerging Researchers Group (NERG)	37
Inter-connected, empirical case studies	11	PROGRAM MANAGEMENT	40
Grounded theory building	14	Evolution of Open AIR	40
Policy design and testing	14	Sustainability	45
Changes to research problem and methods	15	Financial management	46
RESEARCH ACHIEVEMENTS	16	Monitoring and evaluation	47
New foundational research	16		
New case study research	19		
Ongoing outcomes of previous research	24		
Research ethics, financing, and administration	27		



Synthesis

About us

Open AIR is a unique collaborative network of researchers spread across 15 African countries, Canada, and elsewhere in the world answering two overarching questions:

1. **How can open collaborative innovation help businesses scale up and seize the new opportunities of a global knowledge economy?**
2. **Which knowledge governance policies will best ensure that the social and economic benefits of innovation are shared inclusively?**



Open AIR's primary goal is to uncover new insights in the balance between intellectual property (IP) and access to knowledge. Specifically, we aim to solve a problem at the heart of IP and innovation policy: **how to reconcile tensions between appropriation and access, excluding and sharing, and competing and collaborating.** In dealing with this problem, Open AIR's research is showing how knowledge-based businesses can bypass outmoded, constrictive knowledge governance practices to capitalise on open collaborative innovation strategies.

Open AIR's core aims are to improve our understanding of the ways in which knowledge-based businesses can scale up to take advantage of global opportunities, while simultaneously ensuring that the benefits of innovation are shared inclusively throughout society as a whole. **Open AIR's African-centered research calls attention to the importance and sensitivity of context in the making of IP and knowledge governance policy for sustainable development.** Through improved IP policies and practices, this research will lead to more innovation that benefits more people in both developing and developed countries.

In parallel, Open AIR is bringing insights and perspectives to the rest of the world, learning from what is happening and what works in Africa. There is significant debate in academia and among policy-makers as to whether IP policies in the developed world are helping

or hindering innovation. The continent of Africa is widely acknowledged to be at the forefront of global economic growth and shifting geopolitical power structures. The world will be able to learn from African innovation that is happening often in the absence of strict IP enforcement in people's day-to-day lives.

To encourage such learning *from* Africa, Open AIR, in partnership with leading experts, institutions and funding organizations from Canada, is building sustainable, cross-regional relationships. To prepare for plausible futures in which knowledge-based innovation becomes increasingly prominent in Africa, Open AIR is connecting new and emerging researchers in African countries with their counterparts in places such as Canada so that Africans conducting groundbreaking research on their continent will play a more prominent role in global knowledge production. Through mutually beneficial research partnerships, Open AIR is acknowledging Africa's role in the global knowledge economy.

Some of Open AIR's members at the Nairobi Case Study Workshop, April 2016



A time of transition

In 2015 and 2016, Open AIR's work has focused on transitioning from a development-oriented project to a multi-institutional network of dynamic partnerships. For more than a decade, Open AIR has been evolving into one of Africa's most unique and credible voices on intellectual property and innovation issues. From its roots in an eight-country comparative study on the impact of copyright on open access to learning materials, through its studies across several economic sectors and areas of intellectual property, to its current work on inclusively scaling-up innovation through openness and collaboration, Open AIR has continued to grow in breadth and depth.

This year marked Open AIR's most significant leap thus far. Our Annual Report, "From Project to Partnerships" highlights just some of our most significant accomplishments. During this past year, we have:

- Integrated new members into the network's leadership structures and research activities, especially in the areas of innovation policy, management, and economics;
- Implemented the planned new governance structure through regular Steering Committee meetings to set milestones and timelines;
- Invested in new systems and tools to facilitate effective and efficient management of complex, international, empirical research;
- Held engaging workshops, meetings, and/or events at all of Open AIR's institutional hubs – in North, East, West and Southern Africa, and in Canada.
- Empowered new and emerging researchers through unique research and international experiences in the fields of innovation and intellectual property;
- Produced draft papers and working papers establishing conceptual frameworks and baseline literature reviews for each of Open AIR's four core research themes;
- Solicited, reviewed, discussed, and approved 20 new high-potential case studies across our research themes;
- Continued to witness outcomes of Open AIR's previous research, including impacts on national and international policymakers, as well as researchers; and
- Continued to build a solid foundation to mobilise Open AIR's insights into practice through a cutting-edge website, an active social media presence, and ongoing communications and outreach.



The research problem and solution

The Open AIR network's previous research showed that innovation is happening in Africa in ways that were previously overlooked. Our next step is to investigate whether that innovation is scalable, and if so, how. We previously showed that the role of intellectual property is more nuanced than often portrayed. It can sometimes facilitate or frustrate innovation, or both. Our next step is to expand on that analysis by focusing on the scalability of open and collaborative business models, and their impacts on development.

Our previous research identified three thematic areas that are local priorities, especially for marginalised communities, and reflect plausible scenarios for the future of knowledge and innovation. Our next step is to dig more deeply into particular dimensions of these scenarios specifically regarding scalable open and collaborative business models. In order to this, we have highlighted four research themes: high technology hubs; informal sector innovation; indigenous and local entrepreneurs; plus, a cross-cutting thematic focus on metrics, laws, and policies.

Our previous activities created a new and unique interdisciplinary

community of established and emerging African researchers. Our joint activities significantly increased research quality and capacity, adding a credible, independent, and distinctly African voice to global knowledge policy debates. Our next step is to leverage this social capital to further enhance policy and practical influence, and to position African leaders more centrally in global networks via cross-regional partnerships with Canada as well as countries in the global South.

Open AIR Steering Committee and NERG members planning the year's activities, Cairo, June 2015



A core goal of the network's new research is to help solve some of the scalability challenges facing knowledge-based businesses in Africa. Our research is exploring how knowledge-based African enterprises based on collaborative innovation can scale up in a way that generates increased entrepreneurship, businesses and employment opportunities, and better livelihoods.



Twinned with this core goal will be an effort to compare African research findings with findings and experiences elsewhere in the developing and developed world. This will ensure that the economic and social benefits of scaled-up knowledge-based businesses can be harnessed in a manner that makes communities and societies, across the world, more prosperous and equitable. Indeed, we strongly believe that the world can learn from Africa about how we can all encourage innovation.

Based on many African nations' recent records of strong economic growth and shifting demographic trends, businesses on the continent are beginning to emerge as important players in the global knowledge economy. Yet, if Africa's tremendous potential for global economic and trade opportunities is to be realised, many issues must be overcome. One of these issues – the focus of this phase of Open AIR research – is learning how to scale up knowledge-based businesses without jeopardising sustainability or sacrificing core values. Our hypothesis is that business models grounded in networked, open and collaborative innovation can help make that happen. Parallel to empirical research in African countries, we conduct comparable research in the global North. Cross-regionally comparative research will reveal commonalities and contrasts that can be used to improve governance of the global knowledge economy for the benefit of people living in developed and developing countries alike.

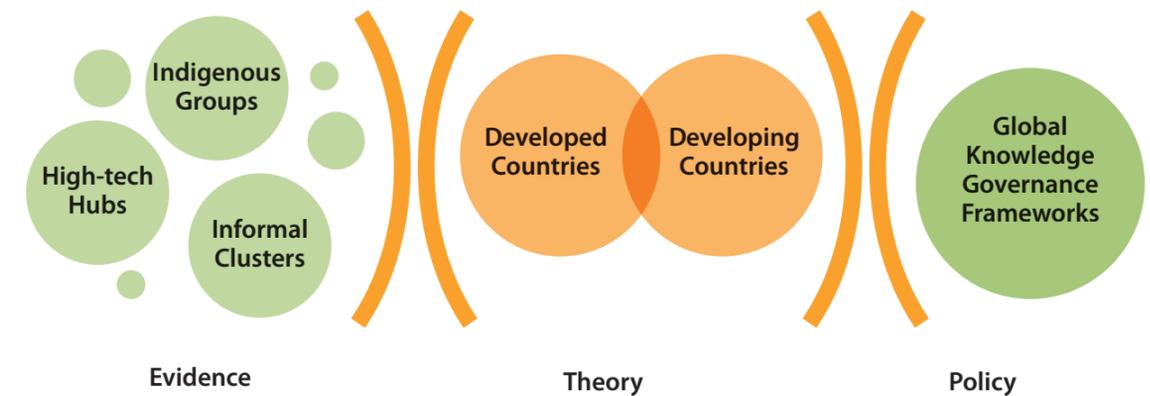
Moreover, Open AIR's research intersects with research on "open development" being carried out by other networks and projects, such as research on open data, open science, open education, and user rights. These intersections are intentional. Our research is distinct from, but complementary to, those other initiatives, because of our focus on collaborative, entrepreneurial business models – and the economic and social ramifications of such

models – made possible by open knowledge governance systems. Our research can, therefore, help to highlight interconnections among the various conceptions of openness.

To do this, Open AIR is investigating several sub-questions across its four clusters of thematic research. Such questions include:

- Which knowledge management strategies work to facilitate collaborative business models in practice, and which do not?
- How can organisations tailor strategies to accentuate benefits or mitigate problems of existing IP laws and related regulations?
- What kinds of professional intermediaries seem to deepen integration and exchanges of knowledge and innovation across formal and informal sectors, and how?
- What kinds of policies would facilitate integration and exchanges of knowledge and innovation across formal and informal sectors, and how?

Open AIR's response to the problems and questions described above is to seek solutions based on robust, empirical, grounded research. In pursuit of ensuring our research has an impact, the methods are split into three phases (1) empirical evidence, (2) grounded theory building, and (3) designing and promoting coherent global knowledge governance frameworks, and exerting policy and practical influence through scenario-driven strategies.



Inter-connected, empirical case studies

To implement the first phase of our methodology, we adopted "situational analysis". A collection of 20 case studies, described in the following section of this report, are now beginning to address our research questions at the situational level, that is, where the units of analysis are neither micro nor macro but are instead at the intersection of actors and forces that shape innovation situations. This approach also enables our researchers to engage with mixed methods, within the various sub-studies, e.g. literature reviews, internet-based data mining, social network analysis, key informant interviews, and surveys.



We have already begun to execute this phase of research through the creation of thematic clusters and acceptance of case studies. Based on Open AIR's previous research on knowledge and innovation in Africa, we have placed our current research into four thematic clusters: High Technology Hubs, Informal Sector Innovation, Indigenous and Local Entrepreneurship, and Metrics, Laws and Policies. The themes are explained in brief below, but can also be found in more detail on our website: www.openair.za.org/research.



HIGH TECHNOLOGY HUBS

The Open AIR's past work developed a strong appreciation of the prevalence and importance of high tech hubs throughout the African continent. IP policies, which underpin developed countries' laws, function on the assumption that formal protections are necessary to encourage innovation. A rapid proliferation of IP rights, however, can result in thickets of vague and overlapping claims, which we see in places like the United States, causing serious questions of current IP laws and policies.

Stepping back from the developed world, in most of Africa, there is an explosion of high tech innovation which is occurring in what is essentially an IP vacuum. Over the past five years, incubators, accelerators, maker spaces, and tech hubs have proliferated throughout Africa, in university, private venture, and government initiative settings. To ease the paradox between the openness that facilitates new ideas and the collaborations that characterise these tech hubs, with the pressure for proprietary protection of new ideas and knowledge, Open AIR is analysing the extent to which formal IP rights are important to the success or failure of Africa's burgeoning tech initiatives at and around high technology hubs.

Above left: University of Pretoria's Makerspace, South Africa, June 2016

Above right: Kukula traditional healers in medicinal plant nursery, Bushbuckridge, South Africa.

Right: Ghanaian Participants in the case study, "Teachers as Entrepreneurs for STEM Innovation in Ghana"

Opposite page: Gauteng makerspace from the case study, "Collaboration and Appropriation in Gauteng Makerspaces", 2016

INDIGENOUS AND LOCAL ENTREPRENEURS

Based on previous research by the Open AIR, it is clear that traditional knowledge held by local communities is becoming a source of inspiration and innovation for many entrepreneurs and businesses in the informal economy, health care sector, fashion industry, agriculture, and more. Further, such knowledge is becoming the base resource in building niche businesses and creating economic opportunities. These innovations increasingly take into account modern technologies, especially information and communication technologies (ICTs). Such technologies are crucial in scaling up indigenous and local entrepreneurial activities and, consequently, the economic empowerment of stakeholders.

The relationship between traditional knowledge, IP, and innovation has been a focal point of Open AIR's research. Our previous studies highlighted the potential of knowledge management practices in formal economic settings. Open AIR's new research focuses on how knowledge is used in the economic interests of indigenous communities, and how such knowledge has been deployed outside these communities in connection with establishing entrepreneurial businesses. This cluster of case studies also provides further examples of how Canadians – both Aboriginal and non-Aboriginal – can benefit with lessons from, and not just for, African indigenous communities.



INFORMAL SECTOR INNOVATION

The majority of business enterprises in Africa are informal and there is growing interest to understand the creative processes and innovations occurring in these informal sectors. Africa's myriad informal micro-enterprises offer diverse and vibrant settings for analysing entrepreneurial development and innovation. They are ideal to study because these enterprises are confronted with severe scarcity conditions forcing them to regularly improvise solutions to everyday challenges, sometimes resulting in innovations that better address local needs. In tandem, the maker movement is focused on problem-solving, sharing knowledge, and facilitating access to technologies through the democratisation of manufacturing tools. The movement is at its initial stages in Africa, but we see that the rise of this maker culture in developed countries is closely associated with the rise of hackerspaces and Fab Labs, allowing like-minded

individuals to share ideas, tools, and skill sets in pursuit of innovation, job creation, and the invention of inexpensive tools and technologies.

Projects that fall under this theme examine existing or future links between Africa's informal sector and the global makers' movement. The two are significantly different in terms of actors and their educational and economic status but share certain characteristics. For instance, both have a strong 'Do It Yourself' (DIY) ethos built on improvisation as a necessary condition for existence or survival. Further, to some extent the maker movement espouses the values of Africa's informal sector innovators; both are meant to operate at a small scale but with the potential to scale up. Our research seeks to gain a fuller appreciation of how the informal and formal sectors interact in different contexts, and how to alter the use of IP rights to allow for the better facilitation of public policy frameworks that effectively encourage economic growth.

METRICS, LAWS AND POLICIES

This theme underpins the three themes above. The Open AIR's Theory of Change posits three kinds of outcomes flowing from this research: "better lives" (practice), "better ideas" (theory), and "better tools" (policy). Metrics is one of the major sources of information to support these outcomes. Reliable figures in African research are scarce and the right tools to measure African innovation are not yet in place. The inappropriateness of mainstream indicators is well

documented. Open AIR's Metrics theme will assist us to create better innovation measurement tools. For instance, instead of measuring patents granted or scientific publications, our studies focus on practical innovations that create change at the community level – things that escape standard metrics.

Grounded theory building

Open AIR researchers have also begun to implement grounded theory through completed and ongoing research in 2015-16, as evidenced below. The method of grounded theory research building has allowed us to begin research by gathering real-world empirical evidence *before* solidifying a theoretical framework. To complement the method, and ensure the largest impact, we combine grounded theory with “action research”, thus ensuring Open AIR’s research beneficiaries are directly involved in the research.

Although we are adopting grounded theory in our methodology, we have realized that some preliminary theory-building is necessary in order for our case studies to be successful. The issue with having our research rely too heavily on either preconceived theories or none at all is that understanding is often fragmented and inconsistent across disciplines. Differences in theories are seen throughout many of the disciplines Open AIR researchers work in, such as innovation studies and management science, economics and statistics, law, development studies, and more. For example, the different definitions greatly impact how “openness” is perceived, a key, overarching term in our research. Similarly, initially we assumed that common understanding existed about the term “scaling-up”, another term important for our outcomes. We have since realised that, like “openness”, understanding differs among different disciplines, regions, and researchers. Hence, we have slightly modified our earlier plans to eschew any pre-established theoretical framework for our research, and instead adopted a hybrid approach where we are performing some basic scoping research (such as literature reviews and meta-analyses) at the same time as our case studies are commencing.

Policy design and testing

After the completion of our research, we will use our new empirical evidence and theoretical frameworks to inform the development and design of recommendations to different country policy-makers and influential stakeholders. In discussion with policy-makers, we will explore the nuances of our recommendations to the situation(s) on the ground. Where applicable, we will suggest policy changes to facilitate improved marketplace frameworks and new practical tools for businesses to successfully scale up their innovations as well as further stimulate innovation. Our communications plan will be of the greatest importance in this phase and will be based on best-practices from other academic-to-policy initiatives. Our communications will build upon the previous interactions we had with international organisations and influencers, helping to confirm our credibility and ensure our recommendations be given greater weight.

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... core values

QUESTIONS



The research problem and solution

Changes to research problem and methods

The one major change to our research problem over the course of this year was made clear during our Nairobi workshop with the case study researchers in April 2016. As touched on above, during the grant application phase and in our previous work, we presumed a common accepted definition of “scaling-up” existed. During our workshop, it became evident that there are significant differences and nuances in this term depending on the discipline or context the term is used in. Similarly, there is no consensus definition of what constitutes a technology “hub”, standard definitions of “innovation” do not apply neatly in the informal sector, and there are ambiguities about the true nature of “traditional” knowledge. For this reason, moving forward we will seek to define these terms and concepts based on the evidence on the ground in the various contexts where we conduct research. This may result in different definitions being used in the case studies themselves, with Open AIR lead researchers then seeking to create a definition that is practical, given the evidence from these studies. At the same time, however, we are conducting scoping research to better understand how others approach these terms and concepts, so that our research is not disconnected from the state of existing research in these fields. In sum, this is a more nuanced version of grounded theory building than first envisioned, but one that we believe will yield more useful results.

Tobias Schönwetter speaking at the Open AIR’s Case Study Workshop in Nairobi, April 2016



Research achievements

New foundational research

Over the course of the past year, Open AIR has conducted significant foundational research that is better facilitating the case study research and future activities. One example is an upcoming book co-edited by our newest Steering Committee member, Erika Kraemer-Mbula, entitled, *The Informal Economy in Developing Nations Hidden Engine of Innovation?* This volume includes two chapters by another Steering Committee member and delves into Open AIR's thematic research area of innovation in the informal sector.

Steering Committee members, Jeremy de Beer and Chidi Oguamanam, following the Nairobi Case Study Workshop, April 2016

Mapping the intellectual property treaty landscape in Africa

Heather Cameron, Jeremy de Beer, Jeremy Baarbé, Meghan Blom, Emily Cumbaa, Jyotsna Venkatesh
Open African Innovation Research and Training Network

Introduction

This project aims to assess the status of intellectual property treaty ratification within Africa. The project measures ratification of different intellectual property treaties in 1994, 2004 and 2014 as a way to promote future research in assessing if and how these treaties affect African countries' development of domestic intellectual property frameworks. This project is part of the larger Open AIR research group assessing the impact of intellectual property regimes on development.

Methods

- To identify treaties to include in the study we compiled a list of all international treaties containing provisions that bind signatories to take measures in respect to intellectual property rights, including copyrights, patents, trademarks, trade secrets, traditional knowledge, bio-diversity, and genetic resources.
- We identified 11 treaties and recorded into a database the ratification dates, if any, for 54 African countries. Countries were selected by cross-referencing the World Trade Organization list of countries with the World Intellectual Property Organization, the World Trade Organization, and the African Union.
- For each treaty we categorized the countries by ratification date: [treaties ratified during or before 1994, treaties ratified between 1995 and 2004, and treaties ratified between 2005 and 2014]. Ratification date was used because this is the date the treaty becomes legally significant. We chose 1994 as the year that the Trade-Related Aspects of Intellectual Property Rights (TRIPS) agreement was signed. The number of treaties signed by each country was calculated in Excel into a cumulative time series.
- Using Javascript and Leaflet we developed an interactive map of Africa to visualize the data for each country across time. The size of each bubble reflects the number of treaties signed by a state in comparison to other states and other periods of time.
- The poster only reflects 2014, the interactive website shows the change from 1994, 2004, and 2014.

Conclusion

There are multiple treaties which may legally constrain the flexibility of African states to create and tailor intellectual property policies to the context of that particular state. There has been a proliferation of treaties signed by African states from 1994 to 2014.

This data represents a baseline in assessing the state of ratification of intellectual property treaties in Africa. The next step will be to perform qualitative assessments using legal instruments to determine if and how these treaties constrain domestic policy development.

Sources:
<http://www.wipo.int/treaties/en/WTO>
http://www.who.int/iprights/data/africa_english_uk.htm
<http://www.who.int/iprights/>
<http://www.wipo.int/iprights/india/2014/en/>
<http://www.pactinstitute.org/>

Results

- Of the 54 African countries we studied, 44 countries (81.5%) had ratified one or more IP treaty, with that number remaining unchanged in 2014.
- In 1994 African countries had signed on average 2.11 treaties (1.24 SD), in 2004 African countries had signed on average 3.19 treaties (1.23 SD), and by 2014 African countries had signed on average 4.33 treaties (1.58 SD).

Status of IPR Treaties in Africa 2014

About Open AIR

Open AIR is a unique collaborative network of researchers spread across 14 African countries, Canada, and elsewhere answering two overarching questions:

- (1) How can open collaborative innovation help businesses scale up and seize the new opportunities of a global knowledge economy? And
- (2) Which intellectual property (IP) and associated knowledge governance systems will best ensure that the social and economic benefits of innovation are shared inclusively across society as a whole?

Open AIR's primary goal is to uncover new insights to ease tensions between IP and access to knowledge. Specifically, to solve a problem at the heart of IP and innovation policy: how to reconcile tensions between appropriation and access, excluding and sharing, and competing and collaborating.



review of the literature on innovation measurement and discussion with researchers at the Egyptian Academy of Scientific Research and Technology in charge of Egypt's innovation studies within the African Innovation Outlook.

Further, our Nairobi hub is conducting joint research with our Ottawa hub into creating a scoping document to shape the thematic research – both the case studies and other research – concerning high technology hubs. A working paper on this should be ready in the coming months. Also upcoming is a working paper by Chidi Oguamanam, Jeremy de Beer, and Open AIR Fellow Freedom Kai-Phillips on traditional knowledge-based entrepreneurship.

From our Ottawa hub, a working paper has been produced entitled, *Evidence-based Intellectual Property Policymaking: An Integrated Review of Methods and Conclusions*, with a condensed blog-version available on the Open AIR website. Moreover, a paper is being drafted on the topic of African IP/innovation policymaking evidence and indicators, to be shared with members of the Steering Committee for comment.

Members of our New and Emerging Researchers Group (NERG) from the Ottawa hub have also contributed to new foundational research. Two examples are research projects examining international IP treaties in Africa, and makerspaces in Africa. In the first, Jeremy Baarbé, Heather Campbell, and other NERG research fellows looked at the impact of international IP treaties across Africa. They have developed a database and an interactive data visualisation map illustrating when 52 African countries signed and ratified 75 international IP treaties and acts. The first phase of this research was completed in March 2016, resulting in a poster presentation. The next phase of the project is to create an open data resource with this information. The second example study is being conducted at both the Cape Town and Ottawa hubs, where Meika Ellis is completing a comparative research study on makerspaces, and applications of 3D printers and other technologies in makerspaces in both formal (university) and informal (community based) settings. This study seeks to find ways to foster future inter-campus and university-community collaborations and works in conjunction with two of the Open AIR case studies that look at makerspaces in South Africa.

It is anticipated that by the end of the 2016 calendar year, Open AIR will have a suite of at least 4-5 working papers – in addition to other scholarly works – to serve as literature/concept reviews for our case study researchers as well as the future of the Open AIR network's research more broadly.

New case study research

Open AIR's Call for case studies was very successful, with case study proposals received both from researchers already known to the network and from new researchers and new countries (Ghana and Tanzania). These proposals were discussed at a Steering Committee meeting on 14 December 2015 in New Delhi, just prior to the Global Congress on IP and the Public Interest. Submissions were considered with respect to their overall quality, the quality of the applicant(s), relevance to Open AIR's research questions, geographical spread, and thematic spread. Successful applicants were informed in February 2016, with a total of twenty case study proposals being selected.

Text boxes in this section highlight just a few of the many case studies Open AIR researchers are now commencing; all case studies are summarized in Table 1 below.

Enhancing STEM Education in Tanzania:

The Role of Private Public Partnership (PPP)

Eliamani Laltaika, Lotha Elisha, Gabriel Malima - Nelson Mandela African Institute of Science and Technology

The Tanzania Development Vision 2025 envisages a sufficiently educated society equipped with the knowledge to solve society's problems and attain competitiveness at a regional and global level. This vision, as well as other documents, calls for enhanced provision of science, technology, engineering, and mathematics (STEM) education to attain this goal.

Premised on lack of sufficient resources as a major setback for the provision of STEM education in Tanzania, this study interrogates the role of public private partnerships (PPP) in enhancing the provision of STEM education. It will explore how formal and informal PPP arrangements in the education sector in Arusha can be scaled up to promote STEM education in Tanzania. By looking at the role of intellectual property, creative commons, and open access publishing in collaborative ventures, this study will help to determine what can the government do to facilitate and promote existing and emerging PPPs.

Informal Innovation:

The case of maker movements in North Africa

Nagla Rizk, Farida Kamel, Nadine Weheba, Nagham el Houssamy – American University in Cairo

A significant segment of the private sector in North African countries, similar to other areas across the African continent, is made up of small and informal businesses. Government corruption, bureaucracy, and top-down policies are a few of the political and socioeconomic factors that led to the rise of the informal economy in North Africa. In the post- Arab Spring era, governments will inevitably have to fully utilize local resources including informal entrepreneurs.

Thus, this study explores informal innovation occurring in makerspaces in North Africa. Innovation might originate from both formal and informal settings, as well as through the interaction between them. The main objective of this research is to develop an understanding of this informal innovation, specifically the interaction between the different players, and examine how knowledge governance systems can be adapted to allow for the creation of public policy frameworks that tackle economic development as well as growth. This research is also intended to generate evidence of innovation that feeds into novel metrics of measuring innovation in Africa.

Creativity and Innovation for Gender Empowerment:

A Case Study of the Maasai Women Development Organization (MWEDO)

Eliamani Laltaika, Anges Robert, Christine Millya - Nelson Mandela African Institute of Science and Technology

The Maasai ethnic group is, traditionally, a male dominated community. Women do not own any property. However, there is a strong moral prohibition for men to interfere with artistic activities of women such as in beadwork. The Maasai Women Development Organization (MWEDO), an NGO registered in Tanzania and whose mission is to empower marginalized Maasai Women, has made use of such social structures to enhance creativity, innovation and entrepreneurship among a group of Maasai Women for gender empowerment. MWEDO is using ICTs to scale up their women's TK-based businesses using web platforms to reach new markets.

The aim of this study is to investigate the business model developed by MWEDO, including access to markets in the US and Europe, knowledge sharing for designs from Europe reproduced by MWEDO, and the role of intellectual property rights such as collective trademarks for enhanced marketing arrangements.

Subsequently, Open AIR invited the case study researchers to a three-day workshop in the first week of April 2016, hosted by our East African hub (CIPIT, Strathmore University, Nairobi, Kenya) to bring together all the successful case study researchers in order to review, refine, and brainstorm about their upcoming research. Case study researchers presented their proposed research to everyone, followed by break-out discussion groups where all participants could brainstorm and share ideas with the researchers. All participants reported that these discussions were very helpful in aligning and refining the case studies including receiving constructive comments regarding the topics, methodologies, content, and research questions/hypotheses of the respective case studies. On the last day, presentations were made by the Open AIR Steering Committee, with emphasis on the need to adhere to all required ethical clearances and policies over the course of the research. In the following weeks, a final draft of each case study was required to be approved by the relevant theme leader.

The successful case studies all touch upon various aspects of our thematic research areas and represent every region of the continent. The ratio of men to women for the case study research and current NERGs is 1:1. **Results are expected in 2017.** This will provide us with time to both effectively engage in grounded theory building, as outlined above, and disseminate the results in different formats before the end of this phase of Open AIR. In the longer term, we will use these case study findings to direct future research.

TABLE 1: SUMMARY OF OPEN AIR'S NEW CASE STUDIES

SHORT TITLE	RESEARCH TEAM	INSTITUTIONS	COUNTRIES
Collaborative Innovation to Boost SSME Growth in Botswana	Ama, Okurut	University of Botswana	Botswana
Power Relations in Egypt's High Tech Hubs	Rizk, Weheba, El Houssamy	American University of Cairo (AUC)	Egypt
Informal Innovation Via Maker Movements in North Africa	Rizk, El Houssamy, Weheba, Kamel	AUC, University of London	Egypt
Collaborative Models to Scale Tech Startups in Ethiopia	Baraki, Muleta, Lemma	Justice and Legal System Research Institute	Ethiopia
Determinants of Innovation in Ethiopian Micro and Small Enterprises	Belete	Society for Technology Studies	Ethiopia
Teachers as Entrepreneurs for STEM Innovation in Ghana	Adomdza, Beem, Waldman-Brown	Ashesi University	Ghana
Informal Sector Skills Training at Suame Magazine	Adu-Gyamfi, Adjei	Center for Social Innovations	Ghana
Open Innovation for Indigenous Entrepreneurship in Arts & Crafts	Ouma, Moni	Strathmore University	Kenya
Flexible Intellectual Property for Ag Innovation in Kenya	Munyi	University of Nairobi	Kenya
Open Collaborative Models of Mobile Tech Innovation in Kenya	Rutenberg, Nzomo, Mwangi	Strathmore University	Kenya
3D Printing: Enabler of Social Entrepreneurship?	Schönwetter, Van Wiele	University of Cape Town	South Africa; Kenya
Open Source Strategies at Nigeria's Software Hubs	Adewopo, Chuma-Okoro Oriakpo, Etuk-Ekong, Ajetunmobi	Nigerian Institute of Advanced Legal Studies, Nigerian National Bureau of Statistics	Nigeria
Techno-collaboration by Nollywood Entrepreneurship	Oguamanam, Degendorfer, Jain, Sarfo	University of Ottawa	Nigeria
Scaling Up Micro-Enterprise at the Otigba Computer Village	Jegede, Oluwale, Ajao, Ogun-jemilua	Obafemi Awolowo University	Nigeria
Collaboration and Appropriation in Gauteng Makerspaces	Armstrong, Kraemer-Mbula, Tivana	Tschwane University of Technology, University of the Witwatersrand	South Africa
Indigenous Entrepreneurship Beyond Benefit-Sharing	Rutert, Traynor	Natural Justice	South Africa
Entanglement as a Strategy to Scale Digital Tech Hubs	Abrahams, Kedama	University of the Witwatersrand	South Africa
Gender Empowerment by the Maasai Women Development Organization	Laltaika, Millya, Robert	Nelson Mandela African Institute of Science and Technology (NMAIST)	Tanzania
Public-Private Partnerships for STEM Education in Tanzania	Laltaika, Malima, Elisha	NMAIST	Tanzania
Geographic Indicators of Specialized Ag. Production in Uganda	Dagne, Oguamanam	Thompson Rivers University	Uganda



UCT Steering Committee Member, Caroline Ncube, speaking with workshop participants during the Global Congress on IP and the Public Interest in New Delhi, India, December 2015

NEW AND DIVERSE RESEARCHERS

Open AIR has been able to engage a diverse group of researchers to conduct our new case studies, including a Botswanan statistician, a cultural anthropologist working in South Africa, one of North Africa's most renowned economists, as well as several of Africa's leading IP scholars, to name a few. Yet Open AIR is not just a network of academics; our network includes personnel in key government positions, intergovernmental organisations, civil society groups, and private sector businesses.

During the last year, Open AIR has focused on expanding our expertise in the fields of innovation studies, technology management, business and economics. Notably, we added Dr. Kraemer-Mbula, one of the world's leading innovation scholars, to our Steering Committee, a role in which she is leading our research on informal sector innovation and collaborating on fieldwork in South Africa. We have also tapped into several new networks and added new scholars to our network in order to facilitate our next-phase research on scaling up innovation for social and economic impacts.

3D printing as an enabler for social entrepreneurship in Africa

The Role of Low Cost Printers and FabLabs

Tobias Schönwetter, Bram Van Wiele – University of Cape Town



3D printing is already starting to revolutionize developed countries' economies. Yet, this technology may hold even greater promise for the world's most marginalised people in Africa. With 3D printing, African countries could reduce much of their dependence on imported goods in addition to fostering locally-relevant innovation and entrepreneurship. Even still, access to 3D printing technology, including computer-aided design software (CAD) tools, is a key challenge for 3D printing to become a game changer on the continent. This case study aims to develop a better and more nuanced understanding of how 3D printing can change entrepreneurship in Africa. Changes such as the lowering the minimum volumes for production, rapid prototyping, and allowing product customisation to personal and demographic needs could help countries to enable local communities and entrepreneurs to create new, locally-relevant products.

RESEARCH METHODS AND ANALYTICAL TECHNIQUES

Open AIR researchers understand that the unique subject matter of individual case studies requires varying methodologies; we therefore make use of a wide range of methods to cater to each study. A few studies make use of qualitative research in which in-depth discussions with key informants are utilised to obtain appropriate data. Some take their interviews to the next step by using participatory action research, in which group meetings are held with the study's interviewees enabling participants to be a part of the discussion required in answering the study's research question(s). Other studies deploy surveys or questionnaires to specific agencies, institutions, or personnel in the relevant field of study. In tandem with each of these methods, many studies use general desktop research to create comprehensive literature reviews, or lay the ground work, to find gaps in an area of study and see where/how the case study can address such gaps.

Many of our case studies effectively use multiple methods for optimal results and useful

recommendations. For example, one case study, looking at the role of Private Public Partnership in enhancing provision of STEM education in Tanzania, ties three methodologies together. The study starts with desk research to analyse government and legislative documents. After understanding the situation in Tanzania, the researchers will interview key officials from several organisations. Finally, focus group discussions will be held with stakeholders with a direct interest in the results. Similarly, another study, looking at 3D printing as an enabler for social entrepreneurship in Africa, uses both desk research and Participatory Action Research to ensure the studies participants are fully engaged in the research and have a voice in the study's output.

The Nollywood Phenomenon:

An Evolutionary Narrative of Techno-Collaboration and Transformative Entrepreneurship

Chidi Oguamanam, Vipal Jain, Katie Degendorfer, Beverly Sarfo – University of Ottawa

This case study aims to deconstruct Nollywood's near-total focus on pop culture and on "the social and cultural forces of the local"; showcasing the realities of the everyday lives of ordinary West Africans as a kind of openness worthy of interrogation. This approach places Nollywood, disruptively, outside the enclosed

intellectual postcolonial political economics of African film history.

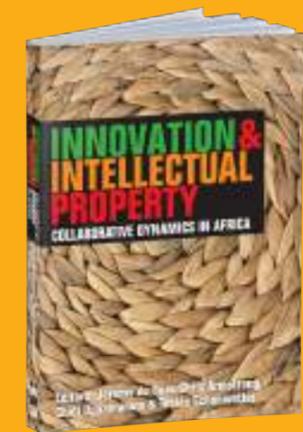
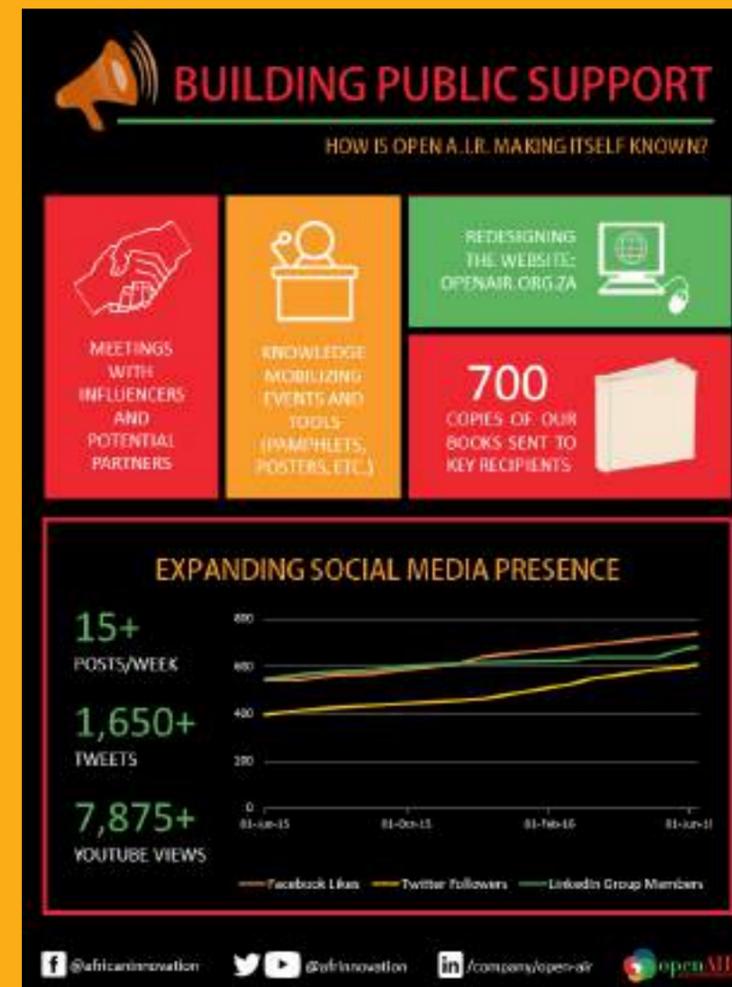
This research seeks to determine 1) if and in what form a collaborative dynamic can be found in the Nollywood industry, 2) the role technology and other factors continue to play in Nollywood's evolution, and 3) what form of openness accounts for Nollywood's success as a brand, industry, entrepreneurial experience, and more. These three strands of inquiry weave together Open AIR's themes of informal sector innovation and indigenous and local entrepreneurs, along with an element of technology, in order to better understand the dynamism of Nollywood.

Ongoing outcomes of previous research

The previous phase of the Open AIR project – supported by the IDRC and Germany's GIZ – provided much-needed and highly valued answers to the question of **how African IP systems that govern knowledge can work better as tools for open innovation and collaborative creativity**. In the process we created a vibrant, robust and unprecedented network of dozens of experts, mostly from Africa, across 15 African countries. Our network members are regularly consulted by their respective governments and/or international organisations as experts in the field of law, especially IP. The result is that our findings have helped shape national law and policy in some of our study countries. We feel fortunate that many in our unique network of scholars remain directly involved in this next phase of Open AIR's work.



AUC Steering Committee Member, Nagla Rizk, on the opening panel of the Global Congress on IP and the Public Interest in New Delhi, India, December 2015.



"... sage and necessary advice for African policy-makers, IP focused policy-makers more generally as well as scholars and practitioners interested in the limits and possibilities of existing and possible IP and knowledge management regimes."

– The IP Law Book Review

Several outcomes have been achieved this past year which are continuations of our previous research. Our earlier case study research resulted in, among other things, two books (*Innovation & Intellectual Property*, and *Knowledge and Innovation in Africa*); several briefing notes; a number of feature videos; numerous interventions at stakeholder meetings, workshops, and conferences; a popular web and social media presence; and draft course curriculum. Our book *Innovation & Intellectual Property* received the following comment in one of numerous positive book reviews published recently: "... sage and necessary advice for African policy-makers, IP focused policy-makers more generally as well as scholars and practitioners interested in the limits and possibilities of existing and possible IP and knowledge management regimes."

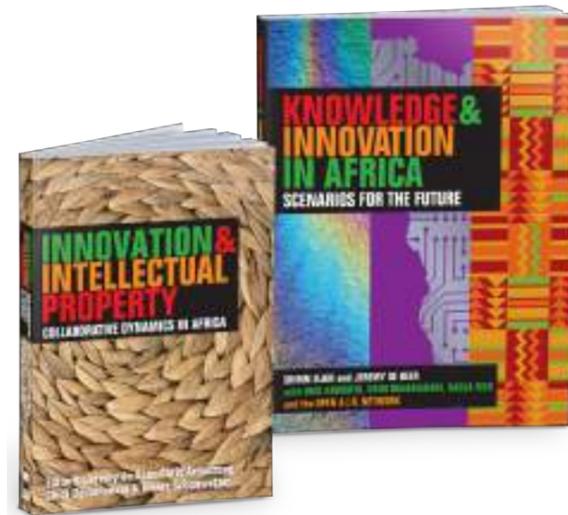
More concretely, we have designed, produced, and disseminated (both online and in hardcopy) four Policy Briefing Notes based on the findings of our previous research as well as having designed an Open Access IP and Innovation Curriculum for use by any university's Law Faculty, which is now taught annually at the University of Cape Town's law faculty. Open AIR has also created a Masters level course on IP, Innovation and Development that is also taught at UCT on an annual basis.

In the case of policies, outcomes from our previous research have made an impact beyond the Open AIR network. Several Open AIR alumni were involved in helping influence the Pan-African Intellectual Property Organization (PAIPO) and the Open AIR network as a whole supported the development of IP institutes in Kenya, CIPIIT, and Nigeria, NIALS.

Both institutions have significantly benefitted from the Open AIR connection: (1) NIALS successfully ran a conference, (2) an Open AIR Fellow currently works at NIALS, and (3) CIPIT has expanded its blog outreach and has been awarded as one of the top educational blogs in Kenya. Through Open AIR, UCT's IP Unit has also benefitted, becoming an influential actor in policy and law amendment activities by the South African government.

The breadth of the Open AIR network, and its activities, has enabled us to reach numerous public and private sector institutions and multipliers with increased awareness about the inter-relationship between IP environments and open innovation and development. We are able to raise awareness through our hubs in key institutions in four geographic regions of Africa. Following Open AIR's hosting of the Third Global Congress in Cape Town in December 2013, we have sent approximately 700 copies of our two books to key recipients in governments, Embassies and High Commissions, international organisations such as WIPO, universities, academics, journalists, and many others. These books are also available for free download on our new website. Further, we have produced feature videos and video trailers outlining the contents of the two books as well as interview segment videos about three of our Briefing Notes, all of which are available on our Afrinnovation YouTube channel. These are all in addition to the academic literature we have produced. Additionally, Open AIR remains active online, reaching thousands of people virtually; we have 1150 followers on twitter, 1170 likes on Facebook, and through our blog we have produced 244 blog posts which have received 74 295 views.

Beyond Open AIR's outreach and beneficial influence on African IP institutions, our research has been used and included in key international documents and meetings. For example, our research into the development of the Kiira EV electric car in Uganda was used as an example of collaborative innovation in the *WIPO Global Innovation Index 2015* (chapter 11, page 151); Canada's TRIPS Article 67 Report, which was submitted to the WTO Secretariat in September 2015 by Global Affairs Canada, included work by Open AIR; and in November 2015, Open AIR was asked to speak at an INASSA meeting between IDRC and DFID, where the Open AIR project was used as a showcase example.



Research achievements

Research ethics, financing, and administration

Multi-jurisdictional research is complex and not all jurisdictions have ethical approvals processes or Research Ethics Boards (REBs) for social sciences research involving human subjects. Nevertheless, it is very important to Open AIR that ethical approvals be obtained for all research involving human subjects. As such, various solutions have been found that are contextually relevant and respectful of the partnerships that we continue to build with our researchers and their institutions.

In this regard, overarching ethics approval has been obtained for Open AIR's research through UCT's Law Faculty Research Ethics Committee (REC) and a reciprocal agreement between UCT and the University of Ottawa is underway. For the case studies where research involving human subjects is being conducted, local boards and committees are being engaged. In cases where no such institutions exist, researchers are either going through their nearest institution's committee or the REC of UCT.

Except for the AUC-based research, all IDRC research funds are being distributed through UCT and contract templates were drawn up for individual and for institutional agreements. SSHRC funds are administered and dispersed through the network from the University of Ottawa. As the theme leaders approve the case studies, contracts are being finalised and, after ethics approval has been obtained where required, funds are transferred. As mentioned in earlier sections, research has already begun on a number of case studies as well as broader Open AIR research, which does not currently involve human subjects.



Knowledge mobilisation and achievements



New knowledge mobilisation strategy

A major objective for Open AIR is to raise awareness with influential stakeholders who can act as trusted knowledge disseminators within their varying networks of influence. We see this as the best way to ensure our findings are used in a concrete manner to influence policies and laws, policy makers, practices of grassroots stakeholders as well as future research.

 **7,875+**
YOUTUBE VIEWS

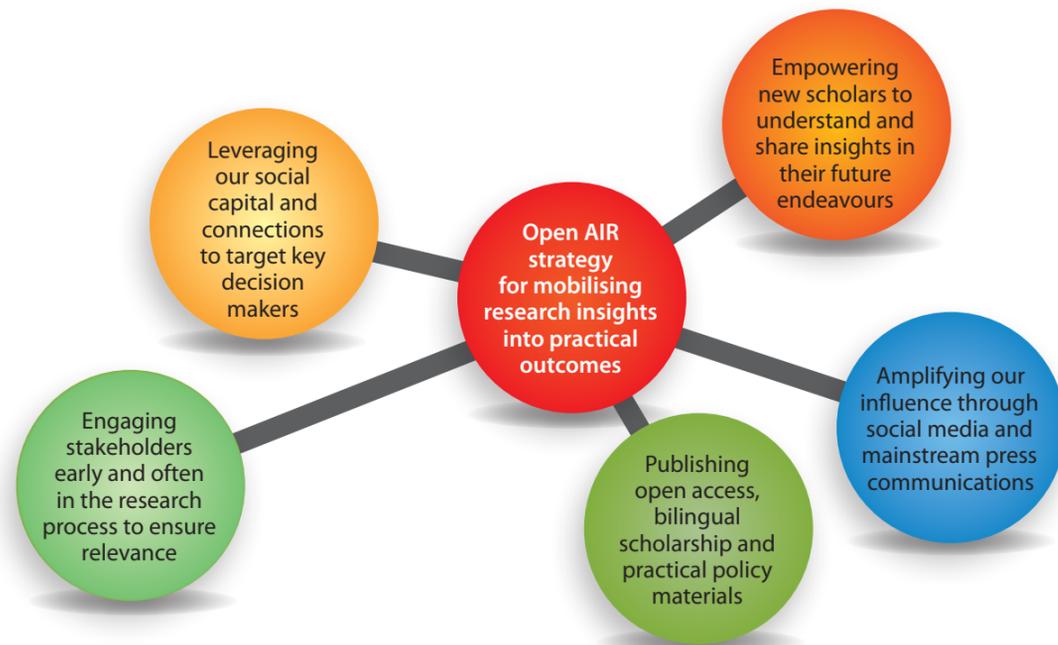
 **1,650+**
TWEETS

 **15+**
POSTS/WEEK

A knowledge mobilisation plan has been designed, including significant research, discussions, and work having been done to ensure that our results will affect change. Open AIR has identified five parts to our strategy for mobilising research insights into practical outcomes: (A) leveraging our social capital and connections to target key decision makers; (B) engaging stakeholders early and often in the research process to ensure relevance; (C) publishing open access, bilingual scholarship and practical policy materials; (D) amplifying our influence through social media and mainstream press communications; and (E) empowering new scholars to understand and share insights in their future endeavours. Moreover, by the end of 2016 we will have developed a publication plan for the entire project with the goal of maximising the dissemination and impact of our research activities.

Engagement, outputs and achievements

In accordance with our knowledge mobilisation strategy, we have been proactively seeking institutions and projects with aims similar to ours and that may be able to provide future partnerships as well as act as conveyors of our findings. Much of Open AIR's strategy is to use our networks – as well as expand them – of influential organisations and persons to help us reframe the way IP and knowledge governance are looked at. Open AIR's partner organisations will continue to be significantly involved in the active use and dissemination of our outcomes throughout the life of the project and beyond. Through these relationships, we have become trusted as expert brokers of policy recommendations based not on rhetoric or special interests but on empirical research.



One way in which Open AIR is ensuring our research is known outside of our network is our active participation in conferences focused both on law and IP, as well as events focused on other African topics in order to help set the stage for our upcoming findings. Our hub in Ottawa is also in the process of expanding our coordination and outreach with several NGOs, government officials in Canada, African Embassies and High Commissions, and other research institutions both within Canada and abroad. This has included attending influential conferences, arranging meetings with influential NGOs, both in person and virtually. Further, significant interactions with Global Affairs Canada have been made, with more anticipated throughout 2016 and 2017.

In terms of familiar fora, Open AIR maintains its presence and networks garnered throughout our previous research. For example, Open AIR actively participated in the Fourth Global Congress on IP and the Public Interest, which took place at the National Law University in New Delhi in December 2015. At this congress, Open AIR researchers engaged in numerous presentations and discussions as well as Open AIR having hosted a panel. The panel was well received by the audience, with many participants stating that they wish to use us as a model of how to conduct joint research and to better enable knowledge-sharing among scholars in the developed and developing world.

Open AIR representatives have also been active in Geneva, the epicenter of global IP, innovation, and development policymaking. Steering Committee member and theme leader Chidi Oguamanam has made several productive site visits to partners and collaborators there. Key outcomes have included solidifying our partnership

with the International Centre for Trade and Sustainable Development (ICTSD), which is facilitating connections with the key inter-governmental organizations that could take-up our research and translate it into concrete policy changes in the near future. Oguamanam has also worked closely with the "Africa Group," which is the most important group coordinating African diplomatic, trade and policy negotiations on the international stage. Open AIR's role here has already been highlighted in reports on IP-related developments globally.



Open AIR also plans to continue our strong practice of publishing a wealth of interdisciplinary and legal scholarship. Our network members have already published articles in peer-reviewed journals this year and several working papers and draft papers have also been produced, as seen in Tables 3–4 below. Our series of short "briefing notes" will continue to be designed to be accessible to busy policymakers without the capacity to read academic scholarship. Further, our new and improved website is becoming an increasingly key vehicle for disseminating Open AIR project results and our expanded social media presence is helping create interest around our work, setting the groundwork for communicating the results of our research. New knowledge mobilisation tools including pamphlets, posters, book marks, and letterheads have also been designed and used in various fora.

Finally, Open AIR's research findings, theoretical frameworks, and policy recommendations will be integrated into our newly developed model curriculum.

Over the course of the grant, one of our objectives is to incorporate our insights into a massive open online course (MOOC), which two of our Institutional Hub Leaders, Rizk and Schönwetter, are already pioneering in Egypt and South Africa. Several of our researchers are highly influential teachers and have been asked on numerous occasions by WIPO to assist in the development of IP course and program curricula, which we plan to continue. Among other tools, we are also currently refining our Open AIR Theory of Change, with the guidance of a consultant and, by the end of 2016, we will have developed a publication plan for the entire project with the goal of maximising the dissemination and impact of our research activities.

One of the major achievements in 2015-2016 is Open AIR's new website. The website includes our previous findings, publications, and updates on our new ongoing research. Equally, a social media strategy has been developed and implemented over the past year. Platforms we use include Twitter, Facebook, and LinkedIn (both our discussion group and a company page). We increasingly have an impact online and are slowly phasing in more and more original content as our research progresses. To determine this, Open AIR has been continually tracking its reach on social media. Our numbers show that we are successfully expanding a Community of Practice, with increasing numbers of people following us, joining our

networks, and/or reading our content. While we only record total numbers at this time, in the future we plan to use more analytical tools to discern the kinds of people we reach, as shown in the infographic above.

As part of our ongoing monitoring and evaluation strategy, described later in this report, Open AIR has also used creative new online tools to develop a database of our network members' participation in meetings, publications, and other outputs. This has been a significant challenge for Open AIR over the past year: ensuring that everyone knows what everyone else is doing and has published. Details regarding some of Open AIR's outputs over the past year are described in Tables 2 - 6, below.

Beyond the publications, presentations, media articles, and interviews detailed below, Open AIR continues to seek alternative ways to disseminate knowledge. For example, A2K4D hosted its Sixth Annual Workshop on May 31st, 2016 on the AUC Tahrir Campus, entitled "Towards a Concerted Knowledge Consciousness: Opportunities, Tensions and Pushbacks". The two panel discussions explored insights from four diverse research projects we have been involved in over the past years. In the upcoming year all Open AIR members will continue to move forward with knowledge mobilisation strategies such as hosting events, advising governments, and consulting on IP issues.

TABLE 2: PRESENTATIONS & EVENTS (CONFERENCE PRESENTATIONS, SPEAKING EVENTS, INTERVIEWS)

TITLE	LOCATION	PUBLISHER/JOURNAL/EVENT	AUTHOR(S)/ PRESENTER(S)/ ED(S)	DATE
Protecting Intellectual Capital	Nairobi, Kenya	6th Global Entrepreneurship Summit	Nzomo, Rutenberg	July, 2015
Intellectual Property and Development	Cape Town, South Africa	Law School Global League Summer School	Schonwetter	July, 2015
Internet Rights, Cultural Development and Balancing Features in South African Copyright Reform	Pretoria, South Africa	International Stakeholder Workshop	Schonwetter	July, 2015
Academic comments on Draft Copyright Bill (South Africa)	Johannesburg, South Africa	DTI National Consultative Workshop	Schonwetter	August, 2015
Marrakesh Treaty - Implications for and Implementation in South Africa	Cape Town, South Africa	IFLA WLC	Schonwetter	August, 2015
Openness in Development	Cairo, Egypt	IDRC Cairo Roundtable	El Houssamy	September, 2015
"Open" Innovation Policy Frameworks	Cape Town, South Africa	ATRIP 2015	de Beer	September, 2015
Plant Breeders' Rights in Africa: Implications for "Stakeholders"	Cape Town, South Africa	ATRIP 2015	Oguamanam	September, 2015
Conventional Intellectual Property Rights Regimes and African Indigenous Heritage: Where do We Go from Here?	Cape Town, South Africa	ATRIP 2015	Laltaika	September, 2015

TITLE	LOCATION	PUBLISHER/JOURNAL/EVENT	AUTHOR(S)/ PRESENTER(S)/ ED(S)	DATE
Unleashing the Economic Power of Data for Entrepreneurship in Egypt	Cairo, Egypt	GESR Initiative and Misr El Khier Foundation	El Houssamy	October, 2015
Capacity-Building Workshop on Using Competition Law to Promote Access to Health Technologies	Cape Town, South Africa	UNDP Competition Law Conference	Schonwetter	October, 2015
Comparison of the Legal Rules for Mechanisms to Support Sustainable Land-Use	Cambridge, United Kingdom	Governing Global Climate Change: Potential and Prospects of a Paris Accord	Kai-Phillips	November, 2015
Comparative Global Censorship: Persisting Modes and Shifting Paradigms	New Delhi, India	4th Global Congress on Intellectual Property and the Public Interest	Rizk	December, 2015
Access and Innovation Panel - Power Relations and Knowledge Governance Systems at High Technology Hubs: The Case of Egypt	New Delhi, India	4th Global Congress on Intellectual Property and the Public Interest	El Houssamy	December, 2015
Access and Innovation: How Open Innovation Drives Development	New Delhi, India	4th Global Congress on Intellectual Property and the Public Interest	de Beer	December, 2015
Sustainability of Research Networks Working in the Global South on IP, Innovation, and Development	New Delhi, India	4th Global Congress on Intellectual Property and the Public Interest	de Beer, Oguamanam, Rizk, Schonwetter, Kraemer-Mbula, Warner	December, 2015
Agriculture and Plant Varieties Protection: Public Interest as Contested Interest	New Delhi, India	4th Global Congress on Intellectual Property and the Public Interest	Oguamanam	December, 2015
Redefining Intellectual Property Progress	Ottawa, Canada	Open AIR Distinguished Speaker Series	Janewa Osei-Tutu	February, 2016
Successful Data-Driven Innovation Examples from the MENA and other Regions	Cairo, Egypt	IDRC Event: Data-Driven Innovation in the MENA Region	Weheba	February, 2016
Increasing the Resiliency of Traditional Knowledge Development in Modern IP Law: Lessons from Contemporary Agreements of Peru and the Andean States	Ottawa, Canada	GSAED's 19th Interdisciplinary Conference: Building Resiliency	Ugwu	February, 2016
Conceptualizing Openness for the Prospect of Development	Cairo, Egypt	A2K4D: Global Open Data Day	Morsi	March, 2016
The Sharing Economy and the Future of Work, Entrepreneurship and Markets	Cairo, Egypt	A2K4D and AUC Venture Lab	Rizk	March, 2016
Beyond Openness: Investigating the Success Factors of Open Approaches to Collaboration and Innovation	Cairo, Egypt	AUC School of Business, Brown Bag Seminar	Morsi	March, 2016
The Open African Innovation Partnership: A New Approach to Canada-Africa Relations for the 21st Century	Ottawa, Canada	University of Ottawa: International Law Speaker Series	de Beer, Oguamanam	March, 2016
Research Networks - Lessons Learned from the Open AIR Project	Cape Town, South Africa	Global, African and Chinese Law Networks: Nature, Experience and Opportunities - Information Session	Schonwetter	March, 2016

TITLE	LOCATION	PUBLISHER/JOURNAL/EVENT	AUTHOR(S)/ PRESENTER(S)/ ED(S)	DATE
Intellectual Property in Agriculture: Challenges and Prospects of Collaborative Research and Development	Ottawa, Canada	Conference on Disseminating Agricultural Research: Bridging the Gap Between Idea and Adoption	Oguamanam	April, 2016
The Nollywood Phenomenon: An Evolutionary Narrative of Techno-Collaborative Entrepreneurial Dynamic	Nairobi, Kenya	Strathmore University, Open Africa Innovation Research (Open AIR) Phase 3 Inaugural Workshop	Oguamanam	April, 2016
ICT Law and Policy	Nairobi, Kenya	Africa ICT Policy Database Launch	Rutenberg	April, 2016
IP Law and Traditional Knowledge Development: Implications of Contemporary West African IP Agreements, for Better or Worse?	Ottawa, Canada	GSLEDD Conference	Ugwu	May, 2016
East Africa Innovation Summit	Nairobi, Kenya	East Africa Innovation Summit	Rutenberg	May, 2016
Objectives and Key Terms - Draft WIPO/IGC #30 Working Document on Genetic Resources	Geneva, Switzerland	Africa Group Roundtable on WIPO/IGC Negotiations, WIPO Secretariat	Oguamanam	May, 2016
"The Open AIR partnership: A Conversation About Research and Learning Across the Country, Across Continents and Across Communities"	Calgary, Canada	Canadian Association of Law Teachers	Awad, Dagne, Oguamanam, de Beer	May, 2016
IP for Hardware and Software Engineers	Nairobi, Kenya	E4C - Engineering for Change Webinar	Rutenberg	May, 2016
IP Boot Camp	Nairobi, Kenya	East Africa Innovation Summit	Rutenberg	May, 2016
Leadership Dialogue on Open Access and African Research Publishing in the 21st Century	Cape Town, South Africa	Regional Stakeholder Workshop	Schonwetter	May, 2016
Factors in Africa's Transition to Knowledge-based Economies	Calgary, Canada	Canadian Association of African Studies	de Beer, Oguamanam, Schorr	June, 2016
Assessing the Impacts of Intellectual Property: An Interdisciplinary Literature Review and Analytical	Krakow, Poland	ATRIP 2016	de Beer	June, 2016
Practical Commercial Aspects of IP	Nairobi, Kenya	Intellectual Property Seminar, Strathmore University	Rutenberg	June, 2016
Intellectual Property Law and Governance Perspectives from Kenya	Nairobi, Kenya	WIPO-WTO 13th Colloquium for Teachers of Intellectual Property	Nzomo	June, 2016
African Scholars for Knowledge Justice	Durban, South Africa	Mid Project Workshop	Schonwetter	July, 2016
Trans Border Quasi IP: Where 'Mine by Right' becomes 'Ours by Right'	Nairobi, Kenya	Open AIR Distinguished Speaker Series	Anthony CK Kakooza	July, 2016
Public-Private Partnerships, Global Intellectual Property Governance and Sustainable Development	Geneva, Switzerland	ICTSD	Oguamanam	July, 2016

TABLE 3: ACADEMIC PUBLICATIONS (BOOKS, ARTICLES, CHAPTERS, EDITED JOURNAL ISSUES, ETC.)

TITLE	TYPE	PUBLISHER/JOURNAL/EVENT	AUTHOR(S)/PRESENTER(S)/ED(S)	DATE
Intellectual Property Protection of Traditional Knowledge and Access to Knowledge in South Africa	Book chapter	Indigenous Intellectual Property: A Handbook of Contemporary Research, Edward Elgar	Ncube	2015
South Africa & Zimbabwe: Silencing Critical Voices'	Book chapter	Global Censorship: Shifting Modes, Persisting Paradigms, Information Society Project, Yale Law School	Ncube	2015
Chapter 3: Fair is as Fair Does: Contractual Normative Regulation of Copyright user Contracts in South Africa in GB Dinwoodie	Book chapter	Intellectual Property and General Legal Principles: Is IP a Lex Specialis?: Edward Elgar	Ncube	2015
Traditional Knowledge Governance Challenges in Canada	Book chapter	Research Handbook on Indigenous Intellectual Property: Edward Elgar	de Beer	2015
Revolution, Graffiti and Copyright: The Cases of Egypt and Tunisia	Journal article	The African Journal of Information and Communication	Rizk	2015
Current African Intersections between Intellectual Property Rights and Knowledge Access	Journal article	The African Journal of Information and Communication	Schonwetter, Armstrong	2015
Licensing Open Data in Developing Countries: The Case of the Kenyan and City of Cape Town Open Data Initiatives	Journal article	The African Journal of Information and Communication	Schonwetter	2015
Open Innovation and Knowledge Appropriation in African Micro and Small Enterprises (MSEs)	Journal article	The African Journal of Information and Communication	de Beer, Armstrong	2015
The Politics of National Intellectual Property Policy Design and the Provision of Health Services in South Africa	Journal article	South African Intellectual Property Journal	Ncube	2015
Africa's Food Security in a Broken Global Food System: What Role for Plant Breeders' Rights?	Journal article	Queen Mary Journal or IP	Oguamanam	2015
Breeding Apples for Oranges: Africa's Misplaced Priority over Plant Breeders' Rights	Journal article	Journal of World IP	Oguamanam	2015
Intellectual Property and the Right to Adequate Food: A Critical African Perspective	Journal article	African Journal of International & Comparative Law	Oguamanam	2015
Farmers' and Breeders' Rights: Bridging Access to, and IP Protection of, Plant Varieties in Africa	Journal article	The African Journal of Information and Communication	Munyi	2015
Human Capital Barriers to Technological Absorption in African Micro and Small Enterprises (MSEs)	Journal article	The African Journal of Information and Communication	Belete	2015
Intellectual Property Policy, Law and Administration in Africa: Exploring Continental and Sub-regional Co-operation	Book	Routledge	Ncube	2016
Intellectual Property and Traditional Knowledge in the Global Economy: Translating Geographical Indications for Development	Book chapter	Intellectual Property Policy, Law and Administration in Africa: Exploring Continental and Sub-regional Co-operation	Dagne	2016
Implementing the International Treaty on Plant Genetic Resources for Food and Agriculture: A Regulatory and Intellectual Property Outlook	Book chapter	Innovation in Agricultural Genomics: Overcoming Complexities in the Intellectual Property Regulatory Complex	Oguamanam	2016
IP, Innovation and Development (Post-graduate LLM course)	Course materials	University of Cape Town	Schonwetter	2015-on-going
Recent Developments in African Regulation of Cybercrime: An Overview of Proposed Changes to the South African Framework	Journal article	Journal of Internet Law	Ncube	2016

TITLE	TYPE	PUBLISHER/JOURNAL/EVENT	AUTHOR(S)/PRESENTER(S)/ED(S)	DATE
Entrepreneurship and Innovation in Egypt	Book		Rizk	Forthcoming
Global Censorship and Access to Knowledge: Shifting Modes, Persisting Paradigms	Book		Rizk	Forthcoming
The Informal Economy in Developing Nations: Hidden Engine of Innovation? New Economic Insights and Policies	Book		Kraemer-Mbula	Forthcoming
Intellectual Property Law and Practice in Kenya	Book		Rutenberg	Forthcoming
Behind Egypt's Communication Outage of 2011: Censorship and Economic Liberty	Book chapter		Rizk	Forthcoming
Appropriation and Intellectual Property in the Informal Economy	Book chapter	The Informal Economy in Developing Nations: Hidden Engine of Innovation? New Economic Insights and Policies	de Beer	Forthcoming
Innovation and the Informal Economy	Book chapter	The Informal Economy in Developing Nations: Hidden Engine of Innovation? New Economic Insights and Policies	de Beer	Forthcoming
Copyright and Photographs of Public Art in South Africa	Journal article	African Journal of Information and Communication	Van Wiele	Forthcoming
From Start-Up to Scaling-Up: A Literature Review & Survey of Tech Hubs in Kenya	Journal article		Mwangi, Nzomo, de Beer, Rutenberg	Forthcoming

TABLE 4: GREY LITERATURE (WORKING PAPERS, REPORTS, BRIEFINGS, CONFERENCE PAPERS, ETC.)

TITLE	TYPE	PUBLISHER/JOURNAL/EVENT	AUTHOR(S)/PRESENTER(S)/ED(S)	DATE
Marrakesh Treaty - Implementation Guide for South Africa	Briefing Paper	UCT IP Unit	Schonwetter, Van Wiele	2015
Open Innovation Policy Frameworks: Intellectual Property, Competition, Investment & Other Market Governance Issues	Commissioned Study	Industry Canada	de Beer	February, 2015
Assessing the Economic Importance of Intellectual Property in Canada	Commissioned Study	Industry Canada	de Beer	April, 2015
Open Data in Developing Countries: Embedding Open Data Practice	Report	UCT IP Unit	Schonwetter	June, 2015
A Differentiated Approach to Plant Variety Protection in Africa	Discussion Paper	SSRN	Munyi	June, 2015
Joint Academic Submission to the Draft Copyright Bill in South Africa	Public Comment	UCT IP Unit	Schonwetter, Ncube	September, 2015
Mapping the Landscape of Entrepreneurial Activities in North Africa	Working Paper		Kamel	March, 2016
Digital Dividends: Launch of the 2016 World Development Report	Other	Aga Khan Foundation Canada	de Beer	March, 2016
Towards a Concerted Knowledge Consciousness: Opportunities, Tensions and Push-backs	Other	A2K4D's 6th Annual Workshop	Rizk	May, 2016
Digital Entrepreneurship and Development in Egypt: An Ecosystem Analysis	Working Paper		El Houssamy, Weheba	June, 2016

TABLE 5: MEDIA ARTICLES (NEWSPAPER ARTICLES, OP-EDS, BLOG POSTS, ETC.)

TITLE	PUBLISHER/JOURNAL/EVENT	AUTHOR(S)/PRE-SENDER(S)/ED(S)	DATE
June Open AIR Network Meeting in Cairo	Open AIR Blog		July, 2015
Digital Entrepreneurship in Egypt: Opportunities and Obstacles	Knowledgemaze	El Houssamy	September, 2015
ATRIP 2015: An Open AIR Student's Perspective	Open AIR Blog	Ellis	September, 2015
Open AIR Receives Multimillion Dollar SSHRC Grant	Open AIR Blog	Schorr	September, 2015
Why We Need to Reconsider how Knowledge and Innovation are Measured	Knowledgemaze	Weheba	October, 2015
Renewing Hope for the Silicon Savannah: Quick Thoughts from the Special Tech Roundtable	CIPIT Law Blog	Mwangi	November, 2015
Is Creativity and Innovation All about Intellectual Property?	Open AIR Blog	Nzomo	December, 2015
Recap of 2015 4th Global Congress on Intellectual Property and the Public Interest	CIPIT Law Blog	Nzomo	December, 2015
Open AIR Presents at Fourth Global Congress on IP and the Public Interest	Open AIR Blog	Nzomo	January, 2016
Prof. Osei-Tutu Speaks at the University of Ottawa	Open AIR Blog	Degendorfer	February, 2016
Intellectual Property Rights: the Key to Supporting Economic Growth? - A different View	CIPIT Law Blog	Nzomo	February, 2016
Open Innovation in Africa: A Recipe for Death of Tech Start-ups?	CIPIT Law Blog	Mwangi	March, 2016
Drawn Out Battle over Genetic Resources Dampens Africa's Hopes	The Conversation / IP Watch / and Open AIR Blog	Oguamanam	April, 2016
CIPIT Hosts Open African Innovation Research (Open AIR) Project Case Studies Launch	CIPIT Law Blog	Nzomo	April, 2016
World Intellectual Property Day 2016: Technological Revolution Defines our Culture, the Past and the Present	Daily Nation / CIPIT Law Blog	Rutenberg	April, 2016
Open AIR Case Study Nairobi Workshop	Open AIR Blog	Hirko	May, 2016
Twitter Recap of the Nairobi Workshop	Open AIR Blog	Degendorfer	May, 2016
Intellectual Property Good for Business	Business Daily Africa / CIPIT Law Blog	Rutenberg	May, 2016
Innovation, Makerspaces and the Future: A Lesson from the University of Pretoria	Open AIR Blog	Ellis	June, 2016
Evidence-Based Intellectual Property Policymaking	Open AIR Blog	de Beer	June, 2016
Beyond the Poster Boy of the Maker Movement	Open AIR Blog	Ellis	June, 2016
The 'Sharing Economy' in Perspective	CIPIT Law Blog	Rutenberg	July, 2016
Upcoming Research into Informal Entrepreneurs	Open AIR Blog	Schorr	September, 2016
Open AIR Call for Case Studies	UCT IP Unit Website	Schonwetter	November, 2016



Knowledge mobilisation and achievements

New and Emerging Researchers Group (NERG)

Another major achievement of Open AIR over the past year has been our ability to attract promising new scholars to our network and mentor them to become future leaders in their field. The *New & Emerging Researchers Group* (NERG) is meant to build the capacity of current and future young researchers in Africa.

The group is composed of undergraduate and graduate students, including juris doctor (JD), Masters, and doctoral students, as well as other research associates. Post-doctoral research associates have the dual role of a trainee themselves as well as a mentor to less experienced researchers. NERG Fellows receive training and mentoring to help develop their talent, creating immediate jobs and long-term career opportunities by building lasting international and interdisciplinary relationships. With new senior members, who are qualified to oversee students in new research fields, the NERG will evolve significantly over the coming years, developing leaders in various research fields and geographic areas. NERG members are encouraged and supported to conduct their own original research, under the direction and mentorship of our

Chidi Oguamanam engaging with NERG researcher Katie Degendorfer, Case Study Workshop, Nairobi, April 2016



Steering Committee members and other collaborators, and where warranted will receive authorial or co-authorial credit to advance their careers. These activities help build academic skills like research methods, theory building, and scholarly publishing. They also build highly transferable professional skills, such as leadership and teamwork, project management, and community engagement.

As part of Open AIR's co-funding from SSHRC, we have promised to develop the talent of over 100 new scholars during the 7 years of the SSHRC Partnership Grant. Thanks to this grant, we have been able to recruit and support:

- 1 postdoc (who has a joint appointment at TUT, uOttawa, and the University of the Witwatersrand).
- 4 doctoral fellows
- 5 master level student fellows
- 11 undergraduate research assistants and fellows
- AUC: 2 postgraduate research fellows, and 1 graduate research fellow

In addition to the sheer number of students we have brought into the network, steps have been taken to find students study abroad opportunities, research travel funds, and already existing mechanisms to facilitate increased partnership. Discussions have been had with personnel at UCT, AUC, and the University of Ottawa in order to

facilitate this and our first students have already started conducting research at our partner hubs. A strategy has also been designed for finding and taking advantage of opportunities to enable students to study with multiple Open AIR researchers. For example, Helen Chuma-Okoro is a staff member at NIALS, is registered to do her PhD studies at UCT, and will be visiting the University of Ottawa to work with Prof. Oguamanam. Ms. Chuma-Okoro is by no means the only student engaging in such integrated, global research.

Our NERG Fellows are located across the project's different hubs, and are engaged with the Open AIR research at various levels (conducting literature reviews; creating surveys and other tools; collecting, managing and analyzing data; co-writing peer reviewed articles and media materials; co-presenting findings; and managing the activities of a unit within a broader organizational structure). Reflecting the broader values and multidisciplinary composition of Open AIR, the members of the NERG come from several different areas of study, including: law, economics, development, and innovation studies – see Table 7 below. Nagham el Houssamy (North African Hub) is the NERG Chair for Open AIR. We are currently in the process of identifying an individual for July 2016 - June 2017.

Left: Nagham el Houssamy from AUC, NERG Chair 2015-2016

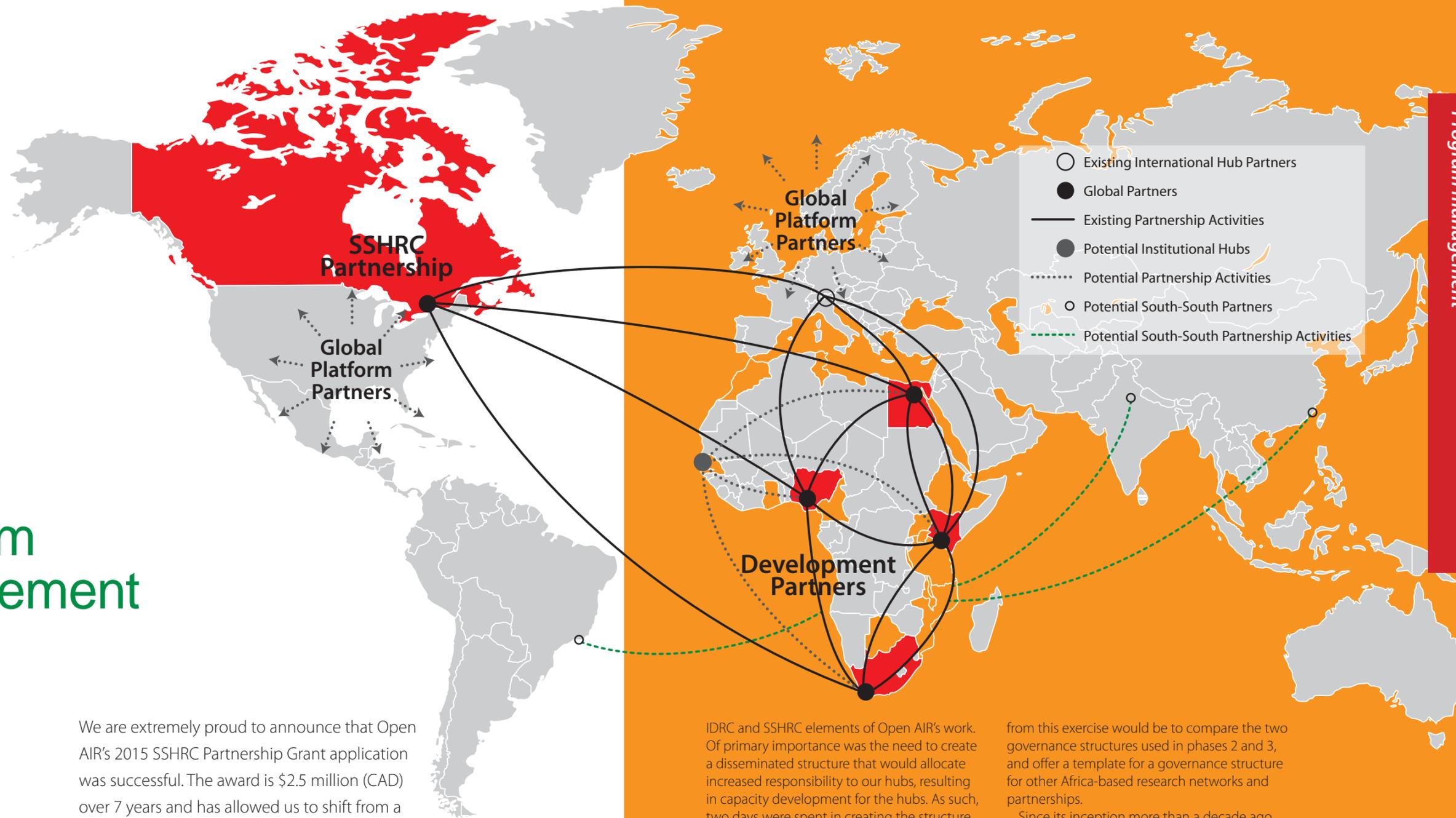
From Project to Partnerships

Program Management

Evolution of Open AIR

We are extremely proud to announce that Open AIR's 2015 SSHRC Partnership Grant application was successful. The award is \$2.5 million (CAD) over 7 years and has allowed us to shift from a project to a program – allowing for increased sustainability. Open AIR has evolved from a development-oriented project to a multi-institutional network of dynamic partnerships. This has been the primary focus of Open AIR since July 2015.

Thanks to SSHRC's co-funding, a planning meeting was held before the funds from IDRC were distributed, taking place in Cairo in June 2015. This meeting's purpose was to design a project structure that would integrate both the



Program management

IDRC and SSHRC elements of Open AIR's work. Of primary importance was the need to create a disseminated structure that would allocate increased responsibility to our hubs, resulting in capacity development for the hubs. As such, two days were spent in creating the structure, discussing, and finalizing the requirements from our two donor organizations as well as all those present. Participants came away from this meeting with a shared understanding and commitment to the project, its objectives and deliverables, and an understanding of how their membership of the project network could enhance the work, goals, and sustainability of their respective institutions. As well, both in Cairo and over the following months, a new integrated timeline was created, taking into account the 3-year period of Open AIR's IDRC grant and the 7-year period of the SSHRC Partnership Grant. A potentially interesting result

from this exercise would be to compare the two governance structures used in phases 2 and 3, and offer a template for a governance structure for other Africa-based research networks and partnerships.

Since its inception more than a decade ago, Open AIR has created capacity at four African hubs and evolved into one of Africa's most unique and credible voices on IP and innovation issues. Open AIR's evolution is a result of its studies across several economic sectors and areas of IP. Open AIR has continuously grown in breadth and depth. This combined with continuous training of network members has resulted in significantly increased capacity among researchers, including emerging African scholars who joined Open AIR as Research Fellows, as well as African policy and issue leaders, and African innovators, creators and entrepreneurs.



Isaac Rutenberg and Caroline W. Muchiri, an Advocate of the High Court of Kenya at the biennial IP Moot Court competition at Strathmore. Adv. Muchiri was one of the judges and a Ugandan team took first place. 9 July 2016.

As part of this evolution, Open AIR is also very proud to have brought three world-class African-based researchers onto our Steering Committee: Prof. Caroline Ncube, Dr. Isaac Rutenberg, and Dr. Erika Kraemer-Mbula. Prof. UCT-based Prof. Ncube was part of Open AIR's funding proposal and we are very happy to have been able to officially bring her into Open AIR thanks to this new phase of funding. Prof. Ncube has significant institutional leadership skills and experience. In addition, her presence in Cape Town is helping to make our Southern African hub more sustainable, capable of doing even more, and able to strengthen our roots within the academic community in South Africa. Dr. Isaac Rutenberg is a researcher from Silicon Valley who created the Centre for Intellectual Property and Information Technology Law at Strathmore University. As the head of our Eastern African hub, Dr. Rutenberg is leading other researchers, both working on our case studies and those from our NERG, to conduct completely new, grounded research. Strathmore was the location of our workshop this past April and Dr. Rutenberg is already mentoring promising Kenyan students. Our third new Steering Committee member,

Dr. Kraemer-Mbula, is a leading researcher on the informal sector in Africa. We are fortunate to be able to have her join Open AIR in an official capacity during this first year. Already her field research and mentoring of other researchers has been extraordinary. She is an active and enthusiastic member of the Steering Committee and the research she is conducting is truly ground-breaking. Moreover, her location at the Institute for Economic Research on Innovation at Tshwane University of Technology in Pretoria, has allowed us to expand our network to include another leading institution.

In addition, the evolution of Open AIR from a development project to a multi-institutional network of dynamic partnerships, has been reflected in the change of titles of our Project Managers to Program Managers. One of these Program Managers, Nan Warner, has been with Open AIR for more than 5 years. The consistency of her presence helps to ensure the corporate memory of the network in addition to her proven capacity to manage a multitude of projects in an efficient, effective, and excellent manner. Thanks to SSHRC's co-funding, Open AIR was able to bring on board a second Program Manager located in



Ottawa, Victoria Schorr. Ms. Schorr is a specialist in African political economy and has previous experience working with the Canadian federal government, notably Global Affairs Canada. Her contribution to Open AIR over the past year has been significant and her already-established contacts with different networks of people has increased Open AIR's capacity to mobilise our knowledge. With one Program Manager in Cape Town and one in Ottawa, Open AIR is now better able to manage its increasingly complex network and broaden Open AIR's capacity as well as impact.

Finally, as our network is multi-jurisdictional, Open AIR has also tested and evaluated various online tools, systems, and protocols. After trying several and analysing

many others, Open AIR is now actively using DropBox, Wunderlist, Airtable, Slack and Google Photos in order to better collaborate. Similarly, we have shifted from using Skype as our primary means of conducting meetings to more often using Google Hangouts. Our knowledge of online tools has evolved significantly and we are now better able to coordinate between all our various researchers using these tools. As the project progresses and technology changes, we plan to keep updating our knowledge and tools appropriately. Indeed, this shift to more practical, low-cost or free online tools we consider to be one of our major achievements over the past year.

TABLE 6: TIMELINE FOR YEAR ONE

ACTIVITY / DESCRIPTION	Q1	Q2	Q3	Q4	Q5
1 ADMINISTRATION					
a Recruit and hire project manager					
b Finalize contracts & transfer funds to partners					
c Update web & communications materials					
d Obtain new ethics clearance for project					
e Implement monitoring & evaluation					
f Prepare & distribute progress report (internal)					
g Steering Committee meeting to adjust/confirm plans					
h Prepare & distribute progress report (external)					
2 TALENT/LEADERSHIP TRAINING					
a Recruit and hire undergraduate research assistants					
b Recruit, admit and fund graduate student Fellows					
c Recruit and hire postdoctoral Research Associates					
3 EMPIRICAL CASE STUDIES					
a Design & release call for case studies; solicit studies					
b Select & announce successful case study proponents					
c Obtain ethics clearance, sign contracts, setup admin					
e Continue & expand data collection on Canadian studies					
d Begin data collection on new pan-African case studies					
f Mobilize knowledge from case studies as per KM plan					
4 GROUNDED THEORY BUILDING					
a Share relevant literature and data among partners					
b Conduct cross-regional comparative analyses					
c Develop & validate theoretical explanatory models					
d Mobilize new theoretical knowledge as per KM plan					
5 POLICY DESIGN & TESTING					
a Collect policy framework data to complement studies					
b Assess frameworks against modelling benchmarks					
c Develop & validate best practice guidelines for industry					
d Develop & validate improved public policy frameworks					
e Mobilize practice/policy knowledge as per KM plan					
6 NETWORKING & OUTREACH EVENTS					
a Plan & hold annual general meeting					
b Plan & hold Canadian partners' meeting					
c Plan & hold Fellows' future leaders forum					



Sustainability

BETTER IDEAS
THEORY
BETTER TOOLS
POLICY
BETTER LIVES
PRACTICE

We believe that sustainability comes through the partnerships that we are pioneering, both with our hubs and our researchers outside of hubs. This network ensures not only our sustainability but also that our findings will have greater impact. The establishment of these relationships reflects Open AIR's success in building a continent-wide epistemic IP community. Moreover, this effort at relationship building relates to a key part of Open AIR's previous activities: to build capacity in our researchers. Such activities have already begun and our hubs are helping to develop research and academic capacity in Africa; linkages to other African experts and researchers; publication and promotion of important research insights via a variety of platforms; and outreach and training of key public and private partners.

Currently, the Open AIR Network consists of five Institutional Hubs: the University of Ottawa, the American University of Cairo (AUC), Strathmore University, the University of Cape Town (UCT), and the Nigerian Institute of Advanced Legal Studies (NIALS). This collection of educational institutions provides our organisation with a physical presence and, thus, an intimate connection with, and access to, local communities in North Africa, Southern Africa, East Africa, West Africa, and Canada.

In all of our hubs, Open AIR is one of the flagship projects and one of the largest projects in which the hub leaders are involved. This involvement correlates extremely well with the missions of all the departments in which the project is located. These investments in organisations/institutions is crucial to the sustainability of the network, because the institutions will remain even when individuals may leave.

As well, in order to maximise the impact of our activities and ensure sustainability of our network we are leveraging (or plan to) the following:

- Case Study Contracts:** We are making an effort to sign contracts with institutions rather than

individuals, in order to promote institutional identification with and buy-in;

- NERGs (New Emerging Researchers Group):** Nurturing and investing in the next generation of experts, mainly from Africa, who will continue with this work even if Open AIR comes to an end; attracting and retaining proactive and effective alumni;
- Multi-project/umbrella project approach:** We are exploring the possibility of several related projects carried out by each hub under the umbrella of Open AIR;
- Parallel co-funding:** Open AIR continues to explore co-funding from other funders & timely conceptualisation of our next phase;
- Network membership:** We recognise the benefits in increasing our network membership in terms of accessing resources, outreach, leveraging credibility (see Table 7 below);
- Greater visibility:** By expanding our impact and network to include other researchers not formally part of Open AIR, NGOs, think tanks, and other institutions.

Finally, we have learned from IDRC's experience with capacity building for

Financial management

research and research organisations. This highlights a number of issues of sustainability specific to networks: for example, networks have several dimensions of sustainability which include *time* (varying life spans), *financial* (some networks do not have to be financially self-sustaining while others generate revenue through

research commercialisation), *processes and structural dimensions* (flexibility in adapting to external and internal change), and *relational dimensions* (social arrangements that are generally not static). We will continue to address these issues as we develop a broader network and analyse more results from our research.

Open AIR is funded by IDRC and SSHRC, managing what is effectively three grants and working in roughly a dozen currencies. Our IDRC funding is administered from the University of Cape Town, and the American University in Cairo (both institutions received a grant from the IDRC). Our SSHRC Partnership Grant is administered by the University of Ottawa and in partnership with our hubs. SSHRC funding began in April 2015, with IDRC funding beginning July 2015.

Over the past year, Open AIR's financial management and reporting protocols have been agreed between the UCT Faculty of Law Finance Department, Open AIR Principal Investigator Dr. Tobias Schönwetter, Open AIR Program Manager Nan Warner, and Project F&A Manager Theresa Hume. UCT's Faculty of Law Finance Department and AUC's Finance Officer have also been briefed by the project on the budget.

Contracts have been finalised for all key people and the sub-granting process to all case study researchers, including contracts, are in the process of being issued, based on ethical clearances. Currency fluctuations and exchange rate changes have made the managing of our funds more difficult but all efforts are made to make ensure that losses are minimal. Our only other major difficulty has been with the transferring of funds to Nigeria. Due to new legislation in Nigeria concerning the transfer of funds and the managing of state funds, we have been unable to ensure that any funds earmarked for NIALS (an institution partially managed through state funds)

would be received as intended. We have been in discussions with NIALS, SSHRC, IDRC, and Canadian diplomatic officials to determine the best way to facilitate the transferring of funds from UCT and the University of Ottawa to NIALS in order to support NIALS as planned, while still complying with these new laws. This is an ongoing difficulty that we hope to have resolved soon.

Open AIR's SSHRC co-funding is helping raise our profile in the business and political communities in Canada, enabling us to efficiently add new comparative insights to the IDRC-funded empirical research, integrate Canadian connections into our active and growing network, and develop the talent of over 100 new Canadian scholars over the 7 years of the SSHRC grant. A significant portion of this co-funding has been used by the hubs to recruit and support numerous undergraduate as well as postgraduate (LLM and PhD) students, all of whom are helping to conduct ground-breaking research and gain additional research experience as well as other practical skills.

Monitoring and evaluation

Over the years, our network has used a variety of M&E models. In our early work, we used outcome mapping, followed by a hybrid system that catered to our two funders' preferences, IDRC and GIZ. This hybrid system used a logframe approach, which GIZ preferred, and an outcome mapping approach, preferred by IDRC. In this phase of our work, we have now organically adopted an approach which enables Open AIR to track anticipated outcomes in a way that a logframe approach does not allow. At the same time, we commit to using quantitative methods in our research. As such, the Cape Town Program Manager is working with a consultant to develop a method that will satisfy all of our new reporting requirements.

One of the challenges has been in identifying the tools with which we can actively monitor and evaluate our own outcomes. As mentioned earlier, we have experimented with a variety of online platforms and tools, having now settled on Airtable to monitor our case studies, researchers, outputs, and potential partners.

As shown in our Theory of Change (overleaf), Open AIR plans to use our social capital, empirical research, and collaborative solutions to develop "Better Ideas", "Better Tools", and lead to "Better Lives". Our research into what is happening in the real world will help us to illustrate collaborative solutions to scaling-up knowledge-based businesses, not just in Africa but also with lessons globally. As a part of our mission, we plan to engage in dialogue with decision-makers, power brokers and grassroots stakeholders to ensure that our findings are of practical use and truly lead to better ideas, tools and lives.



Theory of change

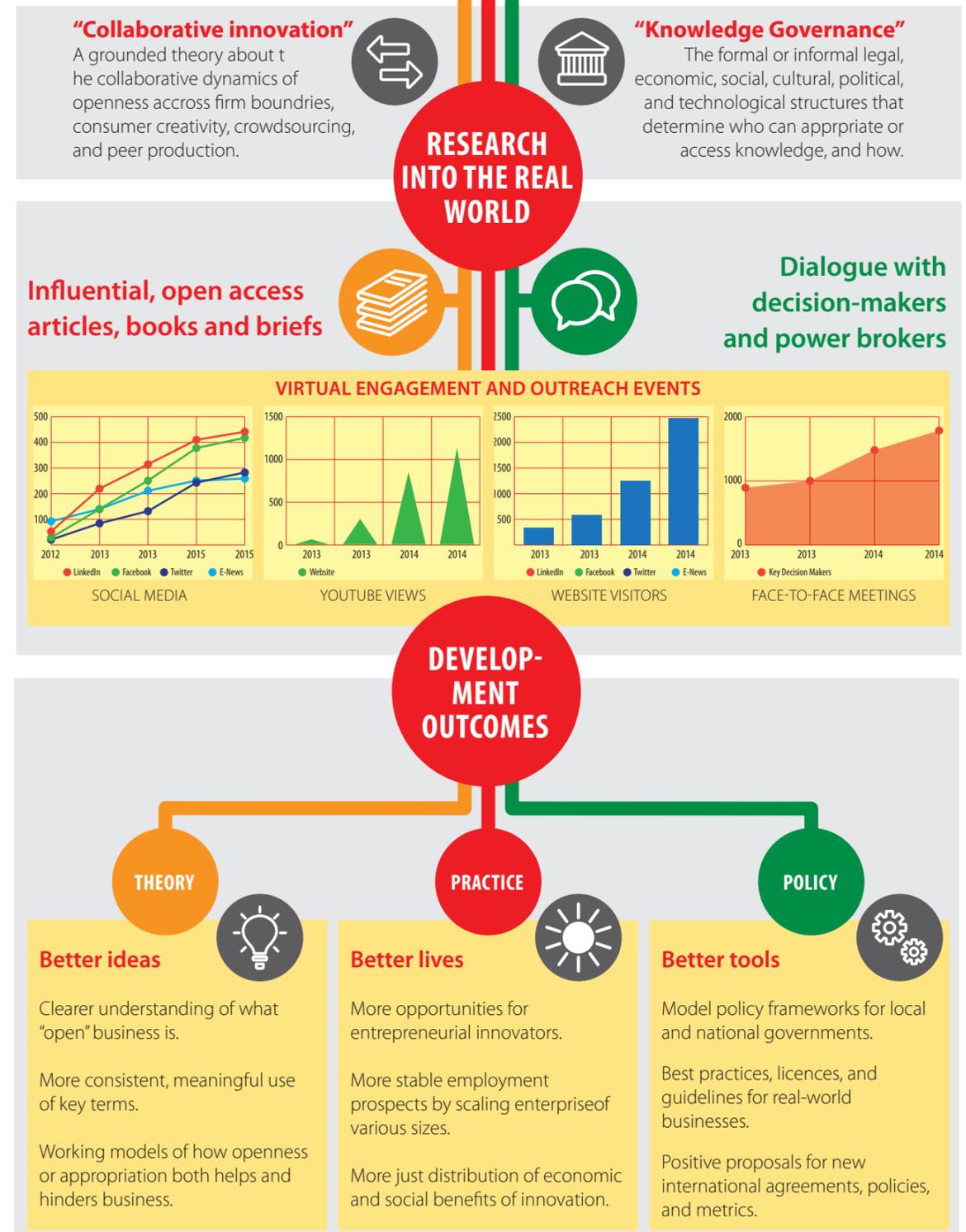
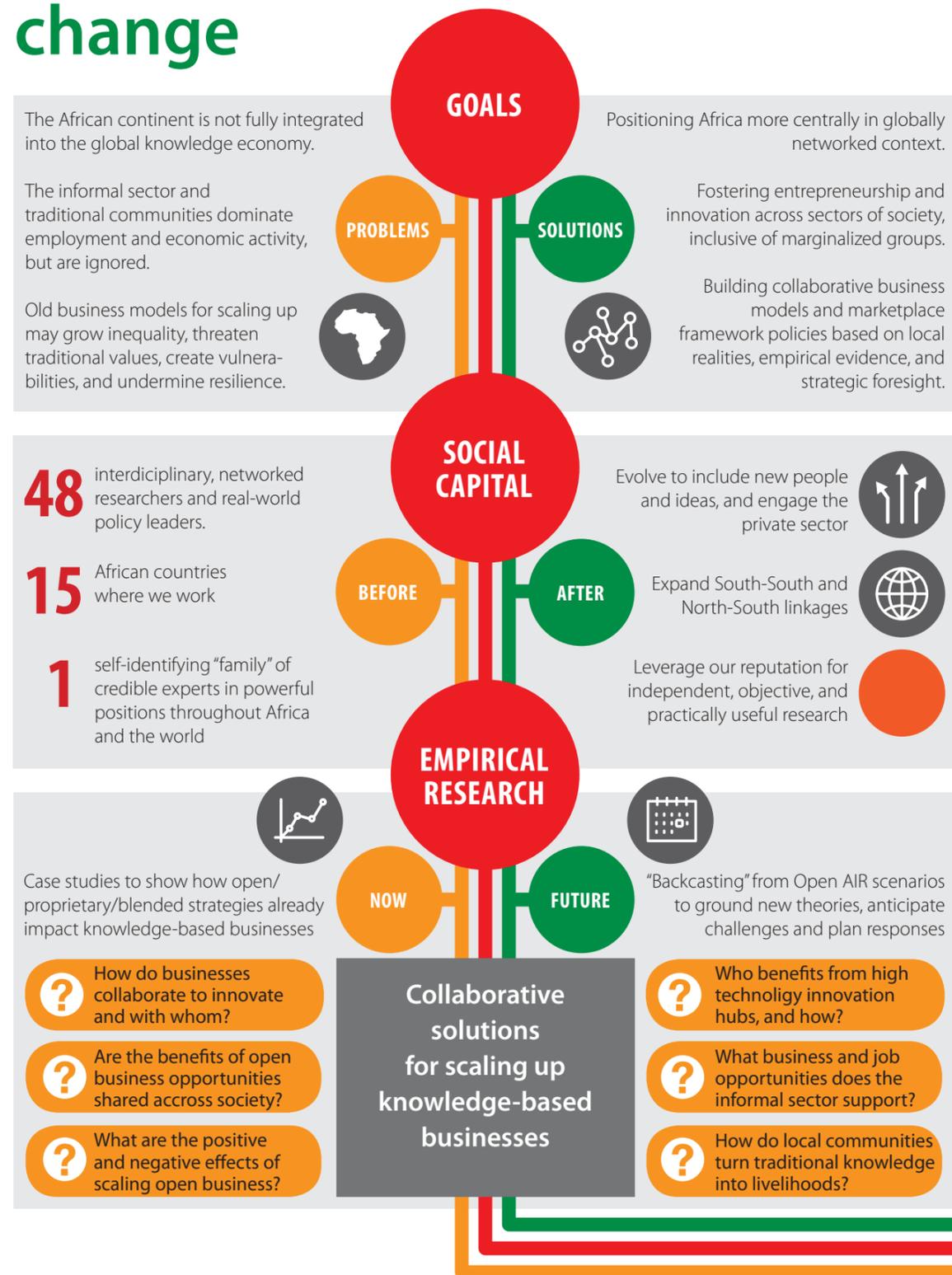


TABLE 7: OPEN AIR MEMBERS

SURNAME	FIRST NAME	PARTNERSHIP ROLES	DISCIPLINE/ EXPERTISE	ORGANIZATION	COUNTRY OF RESIDENCE	COUNTRY OF CITIZENSHIP	RESEARCH COUNTRIES
Abdel Latif	Ahmed	Collaborator	Law, Political Science	International Renewable Energy Agency (IRENA)	Switzerland	Switzerland, Egypt	
Abrahams	Luci	Collaborator, Case Study Researcher	ICT, Innovation	University of the Witwatersrand	South Africa	South Africa	South Africa
Adewopo	Adebambo	Collaborator, Case Study Researcher	Law	Nigerian Institute of Advanced Legal Studies	Nigeria	Nigeria	Nigeria
Adjei	Benson	Collaborator	Business	Centre For Social Innovations	Ghana	Ghana	Ghana
Adomdza	Gordon	Collaborator, Case Study Researcher	Economics, Technology Management	Practical Education Network (PEN)	Ghana	Ghana	Ghana
Adu-Gyamfi	Yaw	NERG, Collaborator, Case Study Researcher	Governance and Sustainable Development	Centre For Social Innovations	Ghana	Ghana	Ghana
Adusei	Poku	Collaborator	Law	University of Ghana	Ghana	Ghana	
Ajao	Blessing	Collaborator, Case Study Researcher	Science Policy and Innovation	African Institute for Science Policy and Innovation	Nigeria	Nigeria	Nigeria
Ajetunmobi	Lanre	Case Study Researcher	Law	Nigerian Institute of Advanced Legal Studies	Nigeria	Nigeria	Nigeria
Ama	Njoku Ola	Collaborator, Case Study Researcher	Statistics	University of Botswana	Botswana	Botswana	Botswana
Armstrong	Chris	Collaborator, Case Study Researcher	Communications	University of the Witwatersrand	South Africa	Canada	South Africa
Awad	Bassem	Collaborator	Law	Centre for International Governance Innovation	Canada	Canada	
Baarbe	Jeremy	NERG	Law	University of Ottawa	Canada	Canada	
Banda	Chikosa	Collaborator	Law	University of Malawi	Malawi	Malawi	
Baraki	Seble	Collaborator, Case Study Researcher	Law	Aman Assefa and Associates	Ethiopia	Ethiopia	Ethiopia
Barnat	Imen Ben Ali	Collaborator	Communications	El Amouri Institute	Tunisia	Tunisia	
Beem	Heather	Case Study Researcher	Natural Sciences	Practical Education Network (PEN)	Ghana	United States	Ghana
Belete	Wondwossen	Collaborator, Case Study Researcher	Economics, S&T Policy	Society for Technology Studies	Ethiopia	Ethiopia	
Blom	Meghan	NERG	Law	University of Ottawa	Canada	Canada	
Cameron	Heather	NERG	Law	University of Ottawa	Canada	United States	
Chartrand	Larry	Collaborator	Aboriginal Law	University of Ottawa	Canada	Canada	
Chuma-Okoro	Helen	NERG, Collaborator, Case Study Researcher	Law	Nigerian Institute of Advanced Legal Studies	Nigeria	Nigeria	Nigeria
Cocchiaro	Gino	Collaborator	Law	Natural Justice	South Africa	South Africa	
Cumbaa	Emily	NERG	Law	University of Ottawa	Canada	Canada	
Dagne	Tesh	Collaborator, Case Study Researcher	Law	Thompson Rivers University	Canada	Canada	Uganda

SURNAME	FIRST NAME	PARTNERSHIP ROLES	DISCIPLINE/ EXPERTISE	ORGANIZATION	COUNTRY OF RESIDENCE	COUNTRY OF CITIZENSHIP	RESEARCH COUNTRIES
de Beer	Jeremy	Director, Steering Committee, Theme (Co) Leader, Hub (Co)Leader	Law, Business, Innovation Studies	University of Ottawa	Canada	Canada	
Degendorfer	Katie	NERG	Law	University of Ottawa	Canada	Canada	Nigeria
Dos Santos	Fernando	Collaborator	Law	African Regional IP Organisation	Zimbabwe	Mozambique	
El Houssamy	Nagham	Collaborator, Case Study Researcher, NERG (Co) Leader	Political Science, Economics	American University of Cairo	Egypt	Egypt	Egypt
Elahi	Shirin	Collaborator	Business	Normann Partners	United Kingdom	United Kingdom	
Elisha	Lotha	Case Study Researcher		Nelson Mandela African Institution of Science and Technology	Tanzania	Tanzania	Tanzania
Ellis	Meika	NERG	Law	University of Ottawa	Canada	Canada	South Africa, Canada
Etuk-Ekong	Esther	Collaborator		Nigerian Institute of Advanced Legal Studies	Nigeria	Nigeria	Nigeria
Ezeala Ijeoma	Chinonyerem	NERG	Law	University of Ottawa	Canada	Nigeria	
Faye	Assane	Collaborator	Business	Universite Alioune Diop de Bambey	Senegal	Senegal	
Gaffen	Alyssa	NERG	Law	University of Ottawa	Canada	Canada	
Gelderblom	Elsabe	Collaborator	Design, web and Photography	Farm Design	South Africa	South Africa	
Girchuki	Douglas	Collaborator	Law	Strathmore University	Kenya	Kenya	
Hume	Theresa	Administrator	Business	University of Cape Town	South Africa	South Africa	
Hirko	Sileshi	NERG	Law	University of Ottawa	Canada	Ethiopia	
Jain	Vipal	NERG		University of Ottawa	Canada	Canada, India	
Jegade	Oluseye	Collaborator, Case Study Researcher	Innovation Studies	African Institute for Science Policy and Innovation	Nigeria	Nigeria	Nigeria
Kai-Philips	Freedom	NERG	Law	University of Ottawa	Canada	Canada	
Kamel	Farida	NERG, Collaborator, Case Study Researcher	Business	American University in Cairo	Egypt	Egypt	Egypt
Kedama	Yolisa	Collaborator, Case Study Researcher		University of the Witwatersrand	South Africa	South Africa	South Africa
Kraemer-Mbula	Erika	Steering Committee, Theme (Co)Leader, Case Study Researcher	Economics, Innovation Studies	Tshwane University of Technology	South Africa	South Africa	South Africa
Laltaika	Eliamani	Collaborator, Case Study Researcher	Law	Nelson Mandela African Institution of Science and Technology	Tanzania	Tanzania	Tanzania
Lemma	Markos	Collaborator	Information and Technology	GIZ	Ethiopia	Ethiopia	Ethiopia

SURNAME	FIRST NAME	PARTNERSHIP ROLES	DISCIPLINE/ EXPERTISE	ORGANIZATION	COUNTRY OF RESIDENCE	COUNTRY OF CITIZENSHIP	RESEARCH COUNTRIES
Maister	Bernard	Collaborator	IP Law	University of Cape Town	South Africa	South Africa	
Malima	Gabriel	Collaborator, Case Study Researcher	Business	Nelson Mandela African Institution of Science and Technology	Tanzania	Tanzania	Tanzania
Mgbeoji	Ikechi Maduka	Collaborator	Law	Institute for Research and Innovation in Sustainability	Canada	Nigeria	
Millya	Christine	Collaborator	Law	Tanzania Intellectual Property Rights Network	Tanzania	Tanzania	
Mogyoros	Alexandra	Collaborator	Law	University of Oxford	United Kingdom	Canada	
Moni	Mary	Collaborator, Case Study Researcher	Law	Strathmore University	Kenya	Kenya	Kenya
Morsi	Hani	NERG	Law	American University of Cairo	Egypt	Egypt	
Muleta	Shiferaw	Collaborator, Case Study Researcher	Business, Economics	Addis Ababa University, Amsterdam Centre for Entrepreneurship	Ethiopia	Ethiopia	Ethiopia
Mulumba	Moses	Collaborator	Law	Centre for Health, Human Rights and Development	Uganda	Uganda	
Munyi	Peter	NERG, Collaborator, Case Study Researcher	Law	University of Nairobi	Netherlands	Kenya	Kenya
Musungu	Sisule	Collaborator	Law	Strathmore University	Kenya	Kenya	
Mwangi	Jacqueline	Collaborator, Case Study Researcher, NERG	Law	Strathmore University	Kenya	Kenya	Kenya
Ncube	Caroline	Steering Committee, Hub (Co)Leader, NERG (Co)Leader	Law	University of Cape Town	South Africa	Zimbabwe	
Ngom	Esther Sandrine	Collaborator, NERG	Law	Nkana Law Firm	Cameroon	Cameroon	
Nzomo	Victor	Collaborator, Case Study Researcher, NERG	Law	Strathmore University	Kenya	Kenya	Kenya
O'Toole	Darren	Collaborator	Aboriginal Law	University of Ottawa	Canada	Canada	
Oguamanam	Chidi	Steering Committee, Theme (Co)Leader, Hub (Co)Leader, Case Study Researcher	Law	University of Ottawa	Canada	Canada, Nigeria	Nigeria, Uganda
Ogunjemilua	Emmanuel	Collaborator, Case Study Researcher	Science Policy and Innovation	African Institute for Science Policy and Innovation	Nigeria	Nigeria	Nigeria
Okurut	Francis Nathan	Collaborator, Case Study Researcher	Statistics	University of Botswana	Botswana		Botswana
Ola	Kunle	Collaborator	Law	Nigerian Copyright Commission	Nigeria	Nigeria	Nigeria
Oluwale	Billy	Collaborator, Case Study Researcher	Science Policy and Innovation	African Institute for Science Policy and Innovation	Nigeria	Nigeria	Nigeria
Oriakpo	Vincent	Collaborator, Case Study Researcher	Statistics	National Bureau of Statistics	Nigeria	Nigeria	
Ouma	Marisella	Collaborator, Case Study Researcher	Law	Strathmore University	Kenya	Kenya	Kenya

SURNAME	FIRST NAME	PARTNERSHIP ROLES	DISCIPLINE/ EXPERTISE	ORGANIZATION	COUNTRY OF RESIDENCE	COUNTRY OF CITIZENSHIP	RESEARCH COUNTRIES
Rizk	Nagla	Steering Committee, Hub (Co)Leader, Theme (Co)Leader, Case Study Researcher	Economics, Business	American University of Cairo	Egypt	Egypt	Egypt,- Egypt
Robert	Agnes	Case Study Researcher		Terrat Computers and Vocational Training Centre	Tanzania	Tanzania	Tanzania
Rutenberg	Issac	Steering Committee, Theme (Co)Leader, Hub (Co)Leader, Case Study Researcher	Law, Natural Sciences	Strathmore University	Kenya	United States	Kenya
Rutert	Britta	Collaborator, Case Study Researcher	Anthropology	Free University Berlin, Natural Justice	South Africa	Germany	South Africa
Sarfo	Beverly	NERG	Law	University of Ottawa	Canada	Ghana	Nigeria
Schonwetter	Tobias	Director, Steering Committee, Hub (Co)Leader, Case Study Researcher	Law	University of Cape Town	South Africa	Germany, South Africa	South Africa, Kenya
Schorr	Victoria	Manager, Steering Committee	Political Economy, African Studies	University of Ottawa	Canada	Canada	
Sihanya	Ben	Collaborator	Law	University of Nairobi	Kenya	Kenya	
Soliman	Adam	NERG	Law	University of Ottawa	Canada	Australia, Canada	
Tivana	Sigfried	NERG	Development Studies	Tshwane University of Technology	South Africa	South Africa	South Africa
Traynor	Cath	Collaborator, Case Study Researcher	Natural Sciences	Natural Justice	South Africa	United Kingdom	South Africa
Trudy Toona	Lebo	Collaborator	Economics	Tshwane University of Technology			
Ugwu	Uchenna	NERG	Law	University of Ottawa	Canada		
Uyanze	Candide	NERG	Law	University of Ottawa	Canada		
Van Wiele	Bram	Collaborator, Case Study Researcher, NERG	Law	University of Cape Town	South Africa	Belgium	Kenya, South Africa
Waldman-Brown	Anna	Collaborator, Case Study Researcher	Innovation Studies	Practical Education Network (PEN)	Ghana	United States	Ghana
Warner	Nan	Manager, Steering Committee	Management	University of Cape Town	South Africa	South Africa	
Webb	Phyllis	Administrator	Administration	University of Cape Town	South Africa	South Africa	
Weheba	Nadine	NERG, Case Study Researcher	Economics, Development Studies	American University of Cairo	Egypt	Egypt	Egypt



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