

Scientific collaborations on Living Labs: Some lessons learnt from South Africa and Tanzania

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Abstract

The purpose of this paper is to provide an overview of the specific lessons that were learnt when Tanzanian and South African Living Labs (LL) collaborated to support one another. It was a scientific collaboration which focussed on Living Labs and co-creation with stakeholders, between Tanzania and South Africa and this provided new insights on innovative mechanisms and success elements that can be applied to make LL more self-sustainable in an African context. The research methodology which was applied was qualitative research and multiple case study as the strategy to exploratory how the SA LLs viewed success elements compared to the Tanzania LLs. Two workshops were used to collect data on success elements and innovative mechanisms and this resulted in data which was triangulated and analysed to provide results. The main challenges facing these LLs were funding and to become a legal entity especially in

Tanzania in order to be able to apply for funding using European mechanisms or calls. The main success elements were that LLs should be relevant in their own contexts and should make use of external experts to support their vision, business plan developments and revenue streams. The most popular innovative mechanisms that were applied by LLs from both countries are reflection sessions, co-creation workshops and the creation of innovation spaces to support creativity and new innovative ideas.

Keywords

Living Labs, innovative mechanisms, sustainability. Lessons learnt and new insights

Introduction and background

As part of the initiative to develop and strengthen the research cooperation, local innovation, entrepreneurship and wider socio-economic and community development, the Tanzania Living Labs were established with the assistance from the European Commission (EC) and African Union Commission (AUC) Living Lab task force for Africa. Its overarching goal was “to support Science Technology and Innovation (STI) and Information Communication Technology (ICT) capacity-building initiatives for mass diffusion of ICTs and related services, as key enablers for poverty reduction, economic growth, social development and regional integration” (Cunningham, Cunningham & Herselman 2011).

Based on this initiative, researchers and LL experts from South Africa and Tanzania developed a scientific collaboration proposal with the purpose to create a space for both countries to meet and exchange ideas through workshops and to support new Living Labs and innovation in both countries. The proposal was accepted by the Research funding support organizations in both countries (National Research Foundation (NRF) in South Africa and Tanzania Commission for Science and Technology (COSTECH) in Tanzania). The significance of this project is to have a long lasting bilateral research and development relationship through LLs between Tanzania and South Africa as the LLs. The LLs will act as the catalysts for this relationship to grow and self-reliance to be attained. The purpose of this paper is to share the results of two LL workshops in both countries. Each of the workshops focused on different themes and wanted mainly to determine what can be regarded as elements of success, challenges and innovative mechanisms which are applied to get new innovative products and services and to allow for co-creation between different stakeholders in LLs in both countries.

Living Labs in an African context

The Living Lab paradigm creates inter-disciplinary spaces where participants or stakeholders can co-create solutions to challenges. LL research typically incorporates ICT research and development, with a core focus on human-computer interactions (De Arias et al. 2014). LLs are seen as places where input from users as co-creators can be utilised to research the context of ICT use, find new uses, and evaluate new solutions within their everyday contexts (Følstad 2008).

The importance of LLs as catalysts of innovation is voiced not only in South Africa, but also in African countries. This has been indicated in the Second Action Plan (2011 – 2013) of the 8th Africa - EU Strategic Partnership (Science, Information Society, and Space). LLs create opportunities for collaboration between different sectors (public and private), as well as research communities in Africa and Europe. The synergies between the European Union (EU) 2020 Digital Agenda and the African Union (AU) ICT Development Framework create the opportunity to complement investments in, and deployment of, ICT infrastructure.

The nature of the Living Lab environment fosters cooperation, innovation, entrepreneurship and development (Schaffers & Turkama 2012). LLs can support Science and Technology, infrastructure and ICT innovation and diffusion as “key enablers for poverty reduction, economic growth, social development and regional integration” (De Arias et al. 2014; Guzmán, Schaffers, Del Carpio & De la Cruz 2010). Various groups (AU Commission, IST-Africa national partners, World Bank, EU Commission, LLiSA, and European Network of Living Labs - ENoLL) support the establishment of more LLs to address Africa’s socio-economic and developmental needs (Cunningham, Cunningham & Herselman 2012; LLiSA 2014; ENoLL 2014).

LLs are typically established to understand what can ultimately be described as human behavioural responses to ICT and IT within a specific context and according to Følstad (2008), this includes, for example, to investigate the context in which ICT is used (i.e. context research), to discover new uses and service opportunities for ICT, to involve users as co-creators, to evaluate new ICT solutions with users, and to conduct technical testing of ICT products and/or services in an everyday (user) context. However the greatest benefit of LLs is within emerging economies (Smit et al. 2011; Hronszky & Kovács 2013). This is especially relevant for an African context. The focus seems to be on the application of ICT-related products and services as catalysts for capacity building and community development or empowerment (Chesbrough 2011; Herselman 2011). Living labs can thus be seen as ‘functional places’ where enabling actors may have settled a public private partnership (or the like) of collaborating universities, research institutes, public entities, companies and individuals. Most experience so far is in healthcare, wireless communication, and in energy saving in connection with building and architecture, mainly in user-driven innovations. Although the idea is that LLs are firmly anchored in local communities, there may be various important links on distance between user groups, universities and large firms (communities of practice, other LLs) to increase learning from practice and to make use of the diversity of global technical knowledge. Accordingly, LLs may also emerge as networked living labs connecting different places (De Arias 2014).

Living Lab in Southern Africa (LLiSA) Network who participated at the 3rd Annual LLiSA Workshop at Rhodes University, Eastern Cape, South Africa (20 - 21 June 2011), organised by the Siyakhula Living Lab, indicated that Living Labs worldwide, are too focused on external tangible outputs of living labs (e.g. process, product or service) and not sufficiently focused on equally valuable but less easily quantifiable outputs and benefits at a community development, socio-cultural and socio-economic level (Cunningham, Cunningham & Herselman 2012).

One key dimension seen as critically important in an African context, is the rural community perspective and engagement, and proposed adaptation of the innovation concept and process, which is often misinterpreted as only tangible, ignoring knowledge or idea creation.

Thus for LLiSA members, a successful Living Lab requires a strategic, mutually beneficial partnership between a minimum of two key stakeholders (e.g. government, industry/business, research/academia, community) with complementary expertise and experience, a common vested interest in the outcomes of enabling users (community) to actively participate in the research, development and innovation process, and at least one stakeholder ensuring the necessary methodological rigor is applied so that results are valid.

The minimum requirement for a successful Living Lab in an African context includes a clear focus/vision, credible community champion(s), the potential for sustainable community development and a strong sense of community own challenges in relation to rural socio-economic development and sustainable quality of life, due to the current state of evolution of infrastructure, educational and employment opportunities and the resultant migration - particularly of youth, to urban environments and sometimes to other countries or even different continents. The multi-stakeholder partnerships on which Living Labs are based can provide the necessary foundation for addressing some of these challenges, but only when communities are fully engaged.

Based on an integrated developed and developing country perspective, Cunningham, Herselman and Cunningham (2012) propose this definition for Living Labs from an African perspective:

“Living Labs are environments, a methodology or an approach which caters for user-driven open innovation within real-life rural and urban settings/communities, where users can collaborate with multiple committed stakeholders (whether NGOs, SMMEs, industrial, academic/research, government institutions or funders) in one or more locations, to become co-creators or co-designers of innovative ideas, processes or products within multidisciplinary environments. Successful deployments can result in improved processes or service delivery, new business models, products or services, and can be replicated (with necessary socio-cultural adaptation) to improve overall quality of life and wider socio-economic impact (including entrepreneurship) in participating and other communities”.

This definition was also accepted by all Living Labs in South Africa and Tanzania as a working definition which needs more evidence of application before it can be further refined.

Objectives purpose and question

The main purpose of the scientific collaboration between South Africa and Tanzania was to develop a framework which shows how co-creation with stakeholders within a Living Lab can contribute towards innovation in both countries. The main objective for this proposed project is to organise workshops in the two countries and with all stakeholders involved in research, development and innovation from the Living Labs perspective to share ideas while also identifying challenges that collaboratively could be addressed. This grand objective can be subdivided into the following:

- To apply the LL successes and lessons learnt from other Southern Africa countries in order to support the new LL in Tanzania.
- To allow Living Labs from Tanzania to indicate their challenges and identify how LLiSA can support them.
- To identify possible postgraduate research opportunities between Tanzania LL and Southern Africa LLs;
- To develop a framework of how LL methodology can be used to strengthen and to support innovation possibilities in Tanzania and apply their experiences within a SA context.

Based on these objectives it was decided to have two workshops, one in Tanzania in 2014 and one in South Africa in 2015 and to use these workshops as platforms to elicit success elements, innovative mechanisms and challenges as experienced by ten (10) established Living Labs in both countries. LLs in South Africa have been in existence since 2009 and have evolved into strong LLs each with their own focus and business models. The LLs in Tanzania was only established in 2012 so their track record was not that extended. However some of these Tanzanian LLs were called projects before and realised that they actually are LLs as they all comply with the requirements of being LLs.

Methodology

In order to address the purpose of the scientific collaboration, a qualitative approach was chosen in order to ascertain through feedback at workshops how LLs have contributed to research and development, human capital needs and capacity development and innovation. It involved the application of qualitative type research through applying multiple case study methodology within the theoretical framework of interpretivism as a philosophy. **To address this purpose** this study has applied interpretivism as its **philosophy** and theoretical underpinning. Klein and Myers (1999:1), define interpretive research as based on knowledge obtained through “social constructivism such as language, consciousness, shared meanings, document tools and other artifacts”. The researcher is seen as investigating the phenomenon based on the perceptions of participant’s history or experience that the participants have encountered.

Walsham (2006:320), states that the philosophical base of interpretive research is phenomenology and hermeneutics. This is because interpretive research seeks to investigate meanings of words or texts as they are expressed within definite social contexts by various participants according to individuals’ previous experiences (Carr and Kemmis 1986). It is in the social context that one can find various groups interacting with

one another and with objects within a given context. Therefore interpretive researchers underpin the perceptions of the social actor in order to make sense of the activities that exist within the defined contexts (Hesse-Biber and Leavy 2010:5).

A qualitative research approach was followed, as it allows for a careful and nuanced examination of the data, while reducing the likelihood of biased assumptions from an outsider's perspective by providing a more objective view from an insider's perspective (i.e. people's subjective views of their world and reality) (Babbie & Mouton 2001; Creswell 2007; Yin 2013).

A case study strategy (Fouche & Delpont 2002) was used during which a bounded system or, in this case, multiple bounded systems (various existing models of Living Lab networks and platforms for co-creation) were explored over time through detailed data collection involving triangulation of information sources, including a questionnaire, document study and telephonic and personal interviews. This resulted in thick descriptions of the LLs in the Eastern Africa context and allowed for the emergence of case-related themes as well as central or recurring themes between the cases (different models in LLs). The advantage of using a case study strategy is that it allows new ideas and hypothesis to develop from careful and detailed triangulation of methods (Creswell 2007; Terre Blanche, Durrheim & Painter 2006). Multiple case studies represent the class of cases better, it allows for comparisons across cases and it also allow for more breadth and depth (Rule & Vaughn 2011).

Findings on LL comparisons and lessons learnt between Tanzania and SA

Report from the workshop in Tanzania

The workshop in Tanzania took place on 11th March 2014 in Dar Es Salaam, Tanzania. Theme of the workshop was “ Living Lab innovation and stakeholder integration”. Three specific goals for this workshop were: awareness creation on what is generally regarded as a Living Lab; differentiate types of Living Labs and their sustainability models; and share experiences between South Africa and Tanzania Living Labs.

A total of thirty eight (38) participants representing the official ten (10) Living Labs in the two countries, researchers, development partners (UNPD and ILO), government Officials, community practioners (prospective LL managers) and upcoming entrepreneurs attended the workshop. The Living Labs participated in this workshop from SA are: the WIN project, Siyakhula, Rlabs and Siyadala. Those from Tanzania were: Tanzania Youth Icon (TAYI), Elabs, Rlabs-Iringa, Arusha ECOLAB, Mbeya and Kigamboni Community Center (KCC). Fishbowl methodology was used where a number of Living Labs stakeholders were identified and the participants were asked to give their inputs as to how these stakeholders can participate in the Living Lab programmes and also their views on innovation, how and why they contribute to a Living Lab. The identified sectors were: Institutions of higher learning, NGOs, industry, and government. Participants shared their experience/knowledge on how these sectors can participate in the Living Labs. From the group discussions; the following issues were indicated as prevalent:

- There is a need for a framework development on how different stakeholders can contribute to co-creation of innovation.
- Different stakeholders saw their roles within a living lab in many ways.
- Development partners or Community Based Organisations saw LLs as platforms where they can promote their work globally and raise funds.
- NGOs see LLs as platforms which are community driven where development partners reach the community.
- Government sees LL as platforms which give an opportunity to support and finance, provide working tools and infrastructure which mobilize communities to solve their problems.
- Universities consider them as where research, community work, integrated learning and community engagement meet to share ideas and information between the universities and the community.
- In terms of Innovation different groups saw it as doing something differently to solve a problem
- In terms of the LL they found a need for community involvement in finding their own solutions.
- There are key words which were seen running through different group discussions regarding this concept of innovation and co-creation. These include: create, improve, solve, new products and services and community involvement.
- In relation to the LLs the groups think that innovation mechanisms can be in the form of co-creation workshops/ seminars, road shows; media like websites, television, radio, magazines, social media, banners, newspapers and exhibitions (show and tell). They all provide opportunities for exposure.

The role of the different stakeholders in LLs should never be underestimated. For a community to have a voice and to provide inputs as co-creators of their own destiny is invaluable.

Report from the workshop in South Africa

The workshop was held in Pretoria on 17 March 2015 at the Meraka, CSIR buildings, South Africa. This event was organized by the Meraka, CSIR in collaboration with the Dar Es Salaam Institute of Technology (DIT) of Tanzania. The workshop participants were nineteen (19) from eight (08) Living Labs in the two countries and consisted out of Living Lab researchers, government Officials and Living Lab representatives from both countries. The aim of the workshop was to focus on identifying elements that can sustain successful Living Labs within an African context. Based on the inputs from the participants the following important success factors emerged which were seen as crucial for sustainability:

- Outputs: Publications, postgraduate students which provides the dissemination of results of your Living Lab;
- Products or services: technical models for rural connectivity or skills development and training are important to develop or establish,
- Keep stakeholders satisfied as this creates a value proposition for your Living Lab
- Have a clear focus with a strategy or business plan
- Integrity: be open, transparent and act in such a manner that others will trust you and be motivated by you to succeed as well. Believe in the vision of the LL. Expose users to the LL value system to create change in their behaviour
- Understand the needs of the community and context
- Arrange regular reflection sessions as learning from mistakes grow people
- Be open to others for them to feel part in what you are doing? (open learning environment)

- Create a common ground for understanding each other (Communication) – everyone understand the same message
- Publicity/marketing of events at LLs should be done regularly
- Define user-driven as the common denominator in order for the user to value the innovation and to stay motivated;
- Create a positive user experience in training and involve those who want to stay and work in the LL to become part of an internship or mentorship program to incubate new products and possible services. Grow individual entrepreneurs and form clusters of entrepreneurs to collaborate with one another;
- Have a solid management, leadership and governance structure and process with a strong administrator to do record keeping
- Create network links (have these and use these to grow the LL)
- Understand the definitions of legal entities and the processes involved to become a legal entity in your own country;
- Create and maintain a revenue stream and allow for new ideas to emerge by creating innovative spaces for people to collaborate and to reflect
- Invest in tools and infrastructure for growth and expansion
- Re-visit your goals and strategies and be able and willing to evolve and adapt to changes (economical, political or organisational)

These success factors are seen as crucial for future innovation possibilities.

Challenges

For Tanzania the major challenge identified was the lengthy process of becoming a legal entity. Not being a legal entity hinders the living labs when it comes to formal representations or collaborations especially for European funding.

The Tanzania LLs already formed a network known as “Pamoja Labs”. However, as mentioned above, it is not yet a legal entity that can legally represent all living labs in the country. However this is a first step to ensure that an East Africa network for Living Labs will be established which can then collaborate with both LLiSA and other networks of Living Labs. This network will also bring their LL managers together to learn from each other and to grow as new mechanisms of innovation in their own right. The South African LLs indicated that to get industry to become and to stay involved has always been a challenge. With this is also the challenge to manage stakeholders as the one who is providing the funding normally wants to dictate the end results and drive the innovation.

Conclusion

The two workshops allowed for every LL to learn from one another and to share best practices and gain new links and networks. This allowed for sharing at a different level and provided new ideas and opportunities for improving current products and services amongst LLs in two countries in Africa. This also allowed for a new view on what a foreign concept like Living Lab means within an African context. The value of these engagements ensured that innovation can have a new face in Africa through the Living Lab methodology where all stakeholders have an equal chance of providing inputs.

A next step can be to collaboratively work on new proposals for funding and to use the successes of the existing Living Labs to grow new ones. This can result in a difference in innovation in each country over a period of time.

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