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# Catalysing innovation: the promise of the Living Lab Approach in South Africa

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**Abstract**: Members of the Meraka Institute of the CSIR have been active in ICT for Development (ICT4D) activities in South Africa and Africa over the last ten years or more. An overview of the lessons learned in the areas of Community Wireless Networks, eHealth and the incubation of community based service enterprises, is provided and the reasons for experimenting with the Living Lab approach is discussed. A research agenda has been developed to guide the Meraka Institute's Living Lab research. The Living Lab approach focuses on community-driven innovation and has the potential to change the perspectives and practices of the various role players involved in ICT4D initiatives. The establishment of the first Living Lab in South Africa started in 2006 and initial experiences have shown both the promise and difficulties in establishing collaborative contexts with multiple role players. The Living Lab approach can make a significant impact in South Africa and the possible role of Living Labs in the South African innovation system is outlined.

**Keywords**: Living Lab, community-driven innovation, ICT4D, innovation system

## Introduction

Members of the Meraka Institute (MI) of the CSIR have been active in ICT for Development (ICT4D) activities in South Africa and Africa over the last ten years or more. The need for greater involvement by communities and sustainability beyond the piloting stage has led to the consideration of the Living Lab (LL) approach. This approach was developed in Europe as a way to deal with community-driven innovation (Schumacher and Niitamo 2008). It is described by Erikkson et al (2005) as a "R&D methodology where innovations, such as services, products and application enhancements, are created and validated in collaborative, multi-contextual empirical real-world settings". The Living Lab approach has the potential to change the perspectives and practices of the various role players involved in ICT4D initiatives and could also play a role in the South African innovation system. Community-driven innovation also has the potential to impact on a wide range of issues such as empowerment.

This paper sets out to describe the journey towards Living Labs by MI researchers, the development of a research agenda and strategy, the current state of LL activities in South Africa, and plans for growing the network of LLs.

## The journey towards Living Labs

Members of the Meraka Institute have been involved in various ICT for Development (ICT4D) activities over the years and in this section the results of interviews with some of

these practitioners are recounted (they are also co-authors of this paper). They were asked to reflect on their journey in the ICT4D field, particularly, their experiences that led them to believe that they needed to change the approach to ICT4D and why they thought that Living Labs provided possible answers to some of the key challenges. Open questions were asked by the interviewers (the first two authors), such as: "What bugged you?". In the case of one practitioner, Rensie van Rensburg, the journey of his team has been described in several publications and the publications are used to summarise the key elements of the journey. Another valuable source has been the websites of several of the projects that have been executed or is in progress (as of September 2008) where some of the learning of the project team has been documented.

## A technologist and research manager's perspective

Kobus Roux has been a manager of research groups in the telecommunications field, especially wireless telecommunications for at least ten years (Franz-Kamissoko 2007), and is now leading the emerging innovations group which includes the Living Labs research group. He has been the driver behind the introduction and fostering of the Living Lab approach and was asked to discuss what where the experiences and questions that led to his interest in the Living Lab approach.

The first questions that emerged were about the need to do technological research projects without having to provide ongoing support after the conclusion of the project. How can we do research without creating dependencies? This is just one of many ethical issues that emerge as soon as communities are involved. Technologists are ill-equipped to deal with research that involves people and cannot be expected to be able to have the expertise or experience to deal with it, hence leading to the need to partner with social experts in doing research projects.

An additional dynamic is that ideas are developed and product design is done from a "techie's" perspective of what would be fun and what would work for people. A lot of these products end up on the shelf due to the lack of user and community involvement. A natural progression seems to be evident: an ICT tool gets developed and tested, in the process new needs are uncovered, such as the need to maintain the product, and the need for a sustainable business model for the support and services associated with the product. The need is to leverage the learning that we seem to repeat again and again: how should we approach this RDI (Research, Development and Implementation) cycle so that the end-result and hence our own research becomes more sustainable? An example of the learning that has been accumulated along the way is the Digital Doorway initiative's (Cambridge et al. 2008) strategy: instead of selecting communities and then expecting them to take ownership, communities have to apply for a Digital Doorway, since this leads to greater long term ownership and commitment.

At the strategic level Meraka needs to play a role in developing an indigenous ICT industry in South Africa. Meraka needs to be relevant to both the citizens and ICT industry of South Africa. It was found to be difficult to get industry to work with Meraka in research projects. One of the reasons identified is the large mismatch between industry's needs and what Meraka had to offer. Industry's prime need is to understand more about the whole range of issues (technical and social) influencing the uptake of their products in different contexts (especially in developing countries). The current situation is that companies active in the South African context are supporting research into products for emerging economies that is being done by institutions that are based in the developed world. An example is the eHealth research and wireless solutions that is being developed by the Technology and Infrastructure for Emerging Economies (TIER) research group of the University of California at Berkeley and has been deployed in countries such as Ghana for example. Meraka needs to move our

research base closer to the "real world", reflecting our engagement with our developing world context, so that we can attract the major technology companies to support initiatives such as technological research centres in South Africa and Africa. These research centres with associated partnerships will support the growth of the South African ICT industry. We need to move away from Africa being a context within which global technology companies do market research to one where technology research is done. This is one of the reasons why the Living Lab concept is attractive since it establishes a context within which strategic partnerships between local role players and technology companies can be formed for true mutual benefit.

Another key strategic issue is building a research base that can truly engage with the complexities of the interaction between technology and society. Multi-disciplinary research is required and a push towards supporting integrative research across discipline is required. The dynamics within universities seems to reinforce research silo's and Meraka has, in practice, found it difficult to find social researchers that are willing to participate in ICT research, or that has enough capacity for meaningful, long-term collaboration. It might be easier to create contexts for multi-disciplinary research integration outside the universities. The Living Labs approach might provide a way to create these contexts. Meraka' role here should be as inclusive as possible, acting as a catalyst and playing a leadership and visionary role in creating open contexts for collaboration.

It is interesting that, in a search for relevant research to point the way forward out of ICT4D dilemmas, community informatics (CI) was identified early on. From an engineering perspective, CI was experienced as being fairly philosophical and without clear methodologies to guide the practitioner. Upon the discovery of the Living Lab concept it was seen as providing methodologies and models that could be applied to create contexts within which the principles of CI could be applied.

## A technologist and project manager's perspective

Ajay Makan has been involved in numerous ICT4D projects in several countries in Africa over the last ten years, in the field of eHealth and Community Wireless Networks. Wireless telecommunications networks have the potential to address rural communication needs in a sustainable and cost-effective manner (Johnson 2007). Meraka is doing research in the area of wireless mesh networks which have relatively low costs, thus enabling community based, or bottom up, deployment. Current projects include First Mile First Inch (FMFI 2008, Franz-Kamissoko 2007, African Communications 2007) and Wireless Africa (Wireless Africa 2008). There are significant challenges to be overcome in this context, for example, at the national level social objectives inform ICT policy and regulation such as universal access strategies, while the current regulatory framework in Southern Africa poses significant challenges to deployment of Community Wireless Networks.

In the projects mentioned above, the key principle is that the technical people cannot do the project on their own. The prerequisites for success are community champions and a consortium of partners composed of a variety of experts and organisations that are well connected to the local contexts.

A progressive community champion aligned with the cause of the project and, ideally is well-resourced as part of an established entity, is required. The project team cannot go to the community and sell them the idea that they are a partner in the project since that has been found to detract from real community ownership. A process of working with and through the community champions is required with collaboration in determining the timelines. Too often the project-based funding framework leads to imposition of timelines without communities necessarily being ready to adopt the pace required. A major challenge is the fact that most of the project team are based far away and hence have limited time in the communities, spend

most of that time on implementing solutions and fixing problems, and hence have little interaction with the communities. The project team can only have "snapshot" views of the community dynamics. Researchers tend to put words into people's mouths instead of listening to the voice of the community. Community champions and local partners are important since they will have a greater chance of becoming aware of local influences. It has been experienced time and again that negative side-effects of interventions are never mentioned to the technical project team.

Apart from the fact that medical and ICT expertise are required in an eHealth project, an important bonus of a diverse team is that there are more partners who have different timelines. This leads to more frequent interactions with the community, leading to a greater sense that things are happening and that a wider range of community members are engaged by the project team (e.g. not just the clinic sister, but the patients as well). A diversity of perspectives on the community context is also developed, leading to critical discussions within the project team and increased learning. The partners have different short and long term agendas, increasing the possibility of longer term sustained engagement with the community and increasing sustainability. A Living Lab could create a context within which projects can come and go, but the evolution of the solution in context is driven by the growth in alignment of the key role players.

The planning of projects needs to move beyond the pilot-mode to take into account the wider context of the intervention. The Living Lab approach can assist in this regard since it will focus the thinking about the scope and sustainability of the intervention and the nature of the partners required (e.g. who will be doing training). Early engagement with key stakeholders is required for sustainability. Stakeholders cannot be expected to take ownership based simply upon exposure to a pilot. A good sign is the development of solutions by the community in order to address a need that they have identified. An example is the development of the baboon monitor in the Scarborough community near Cape Town. The Living Lab approach's focus on user-driven innovation could make the project team more aware that problems are the community's intellectual property, and that solving problems is a part of their growth process and therefore the team should not interfere by quickly stepping in and solving the problems for them.

## A social entrepreneur's perspective

Rensie van Rensburg has worked for the past 14 years in the ICT4D arena, focussing on the neglected rural contexts of a developing economy and evolving models that enable sustainable impact on these economies (Veldsman and Van Rensburg 2006, Van Rensburg et al. 2008a). His team has been the first in South Africa to establish a Living Lab, namely the Sekhukhune Rural Living Lab, which started in 2006 in partnership with SAP Research (Van Rensburg et al. 2007).

The evolution in their thinking has described as follows (Van Rensburg 2008a):

> The focus of our work as ICT4Dev researchers and developers have shifted extensively from: (1) researching, developing and deploying technology tools and applications to: (2) establishing an ICT-enabled, sustainable community of enterprises that delivers on the (economic) development and trade outcomes required in the South African context, i.e. a network of people we call Infopreneurs™. This change in approach resulted from our own failures at ICT4Dev implementations, and our observation of those of others around us.

This change in focus is "an effort to address both the service gap (between local level government and under-serviced communities) and the trade gap (between so-called 2nd

economy, emerging enterprises and formal, 1st economy enterprises" (van Rensburg et al. 2008b). The details of the series of activities and resultant learning which lead to the shift in focus is summarised in Table 1 below.

**Table 1: R&D activities and related outcomes (Van Rensburg et al. 2008a)**

| Activities | Dates | Outcomes |
|---|---|---|
| Obtain an understanding of SMME development practice and processes in a developing economy (SA) | 1994-1998 (5 years) | Highlighting the importance of the ***mediator /champion*** in a developing community context. |
| Deploy a national network of public, self-help, touch-screen kiosks in a franchise model in high pedestrian traffic environments. | 1995- 1996 (2 years) | Highlight the importance of ***allocating resources*** (tools, skills) to all ***tasks*** in the "information economy". |
| Developing & deploying software systems in community level development facilities (SMME & Multi-purpose community centres). | 1999- 2004 (5 years) | Highlighting ***implementation challenges*** in the technology ***adoption and ownership*** spheres. |
| Developing robust implementation models for sustained (development) service delivery in developing economies. | 2004- to date (4 years) | Highlighting the importance of solid ***business development*** approaches in the ICT4D arena. |

The robust implementation models mentioned in the Table 1 follows a "development through enterprise" approach that delivers a whole range of services to rural communities via an ICT-enabled distribution channel that is established via the creation of a comprehensive and sustainable community of Infopreneurs™ (Van Rensburg et al. 2008a).

Infopreneurs™ are community based, ICT-enabled micro service enterprises that deliver services such as creating local video material (e.g. videos at weddings) and creating and maintaining an electronic business directory and catalogue of local business (that can be used in local economic development planning of local governmental authorities) (Van Rensburg et al. 2008b). A key aspect is the adoption of a franchise model as part of the overall goal of providing a comprehensive support system that is sustainable. Young community members are set up in their own community Infopreneurs™ service businesses following a MicroFranchise approach (Magleby 2005) to provide direct support. This support is delivered via Master Infopreneurs™ that function as area franchise holders (Van Rensburg et al. 2008a). The Master Infopreneurs™ are guided and enabled to be social entrepreneurs (Martin and Osberg 2007) by the support context (Franchisor) or so-callled "back-office" that not only supports the IT system but also does strategic marketing, establishes service level agreements with national commercial and government entities and provides financial assistance and training (Van Rensburg 2008b).

As discussed in the previous interviews, the role of a local champion was found to be critical. The Infopreneurs™ as well as the community context are profiled. Infopreneurs™ are profiled and screened in order to determine capabilities such as problem solving skills. This model adds the element of entrepreneurship to Heeks' suggestions regarding the creation of "ICT4D 2.0 champions" (Heeks 2008). The relationship with the local community is vital and, for example, it was necessary in some cases to manage negativity towards Infopreneurs™ as they started to generate money. Social entrepreneurship as a concept also had to be sold to the community (Van Rensburg 2008b).

The Meraka Institute is an associated partner in the Collaboration@Rural: a Collaborative Platform for Working and Living in Rural Areas (C@R), which is an Integrated Project in the EU 6th Framework Programme (Collaboration@Rural 2008). This project investigates collaborative work environments as key enablers for catalysing rural development and has established a network of seven Rural Living Labs (RLL) in six countries as human-centric rural innovation environments (Schaffers et al. 2007). These RLLs covers broad areas of collaborative innovation, one of which is rural enterprise incubation. The Sekhukhune RLL in South Africa is one of four Living labs in this category and implements the Infopreneurs™ model supporting micro-service enterprises. In a paper written to reflect on the experiences gained in establishing the Sekhukhune RLL with research partners, Van Rensburg (2007) proposes the concept of a marriage between the Infopreneurs and the System of Innovation (the institutional actors fulfilling research and technology development (RTD) functions) in the rural Living Lab. This metaphor is designed to describe how the SOI faces challenges of embedding itself into the "community of practitioners" in ways that will ensure a working, tight "marriage" between the SOI and "community of practitioners". The marriage needs to address issues such as: What are the (lasting) value propositions for both parties, should the embedding be phased and what would the roles and responsibilities for the "marriage partners" be during the different phases? (Van Rensburg et al. 2007).

The use of the metaphor forces the SOI to "seriously re-think and re-plan its own mindset, capacities and internal (RTD) processes" (Van Rensburg et al. 2007). In practice, the establishment of a Living Lab requires a great deal of long term commitment and the flexibility from the institutional actors in the SOI. The C@R project ends in 2009 and they have set themselves these tasks in order to answer some of the many unanswered questions:

- To embark on an ongoing participatory design, specification and validation process with the "natural daily life" inhabitants – predominantly SMMEs but also including (economic) citizens - of the rural economy of a specific deep rural area in Southern Africa.
- To determine the nature (and benefits) of the long term "marriage" between SOIs and these "natural daily life" inhabitants.
- Identify (and adopt) the changed mindsets, especially within the SOIs, that would be required to "open up" these systems of innovation for free participation by all inhabitants of a specific economy.

## The promise of the Living Lab approach

The Living Lab concept, it seems, promises "win-win" situations and to overcome the ills suffered by conventional ICT4D such as "weak sustainability, lack of long-term collaboration between partners, and the fact that user/community-based innovation has not been supported adequately" (Mulder, 2008). In line with Erikkson's (2005) definition, LLs are 'functional regions' where stakeholders have formed a Public-Private-Partnership (PPP) of firms, public bodies, universities, institutes and people all collaborating for co-creating, exploring, prototyping, validating and testing of new services, products and systems in various real-life contexts. We hope to see the adoption of the LL approach as an integral part of local economic development strategies and this has been initiated in the Limpopo Province in South Africa.

In terms of research and technology development, LLs create a platform where fundamental research and pure applied research meet; and is inspired primarily by user involvement and participation. The participation in LLs by technology companies (mainly in the European context) provides an opportunity to involve technology companies in

partnership with technology researchers and communities in developing solutions that will be accessible to communities and will have an impact on aspects such as local economic development and social inclusion. The LL journey is important and needs to walked in order to make a real difference. MI technologist and project manager, Ajay Makan, in listing his ten reasons *why* LLs are important, mentioned: "management of expectations, long-term relationships, community is key partner, platform approach allows focus on discipline"; to state a few.

## Developing a Living Lab research agenda and strategy

In this section an overview of the establishment of the Living Lab research group and the development of a research agenda and strategy is provided.

### The DST mandate

The terms for researching and participating in Living Labs in South Africa as user-driven open innovation platforms are covered in an approved proposal by the Department of Science and Technology (DST). The proposal included the establishment of a research group in the Meraka Institute to carry out the department's mandate. The focus of the group is the advancement of information society applications, tools, support infrastructure and services. The research agenda originates primarily from the defined priority objectives and activities (Table 2) that were developed with the DST.

**Table 2: Elements of the three year DST plan for supporting Living Labs research**

| Objectives | Activities |
|---|---|
| 1. To establish Living Labs as a centres of gravity enabling community-academia-industry-institution interaction, with a national agenda and fast results<br><br>2. To build critical mass consisting of infrastructure, R&D, students and leadership<br><br>3. To establish local and international networks and co-operation of South African researchers<br><br>4. To increase the number and quality of scientific publications in the field of ICT4D | • Conduct research in the identified rural Living Labs of Elandsdoorn, Sekhukhune and Dwesa<br>• Conduct a baseline study to investigate user needs and set parameters for affordable infrastructure<br>• Enabling the identified communities through awareness and training in technology handling or use<br>• Enabling the identified rural areas by deploying necessary technology<br>• The development of Living Lab strategy in line with the developed research agenda<br>• The adoption of Living Lab techniques for collecting and analysing real-life data<br>• Monitoring and Evaluation |

## The visit by Living Lab expert and workshop of the South African initiatives

Some of the major discoveries whilst adopting the Living Lab methodology were the need to have a mindset shift and to identify similar initiatives with whom to share knowledge and experiences but also start long term collaboration. In order to help the new research group key in to the Living Lab way of thinking, a Living Lab expert from Europe was invited to spend three weeks at MI. The objective was to learn from the experience of setting up the European Network of Living Labs (ENoLL) whilst at the same time draft a research agenda for Meraka. During the same period, April 2008, a workshop was held at MI where six different LLs presented their stories according to the Harmonising cube framework. The harmonising cube or 'interoperability' cube has been used in the ENoLL as a representation of shared methods and tools. In part using some of the ideas of 'participatory theory', the harmonising approach illustrates "bridges between existing LLs" (Mulder et al. 2008 and Mulder et al. 2007) and therefore promotes best practice exchange. In this workshop of 'living labbing' initiatives, it was clear that each is based on a unique set of values and thus has different focus and approach (see Table 3). Almost all the initiatives are in the set-up phase. The only exception perhaps, is the Sekhukhune LL which has been an associate member of the European FP6 Collaboration@Rural project since 2006, and is now focusing on establishing services as well as interfacing with the local economic development initiatives of the Limpopo Provincial government. The Sekhukhune experience has been discussed in more detail in a previous section on "The journey towards Living Labs".

**Table 3: Different contexts and focal areas of existing LLs in South Africa**

| Living Lab | Context | Key Focus Area | Progress | Meraka's involvement |
|---|---|---|---|---|
| A | Rural | Telemedicine and rural connectivity | Set up | Wireless mesh connectivity, networking, coordination |
| B (Sekhukhune) | Rural | Local economic development, Rural enterprise incubation | Third year of operations | Infopreneur™ model ICT tools |
| C | Rural | Rural connectivity and ICT applications | | Baseline study (developing the tool), Wireless connectivity support, Human Capital Development |
| D | Rural | Provincial local economic development | Set-up | Infopreneur™ model ICT tools |
| E | Semi-urban | Education, Research and Community development | Planning | Networking, sharing learning |
| F | Rural | Patient health system | Set-up | None |

The next step was the development of a strategy.

## Strategic plan

Meraka recognises the potential of LLs as a systematic approach designed to empower users to become active partners in the research development and innovation process. Thus the agenda that follows stems from the vision to enable user-driven innovative products and services which can be applied to the benefit of all South African citizens. The research mission will therefore establish a platform where affordable user-driven ICT infrastructure can enable access to information, education, and healthcare through developing and evaluating innovative applications and services in order to contribute to social inclusion, local economic development and ICT innovation. We believe this approach will engender socio-economic development driven by community participation and innovation where partnerships are built and networks are created.

The work so far, led to the strategic plan of the research group being clarified. The following strategic objectives will guide the research execution:

1. Establish a centre of gravity enabling community-academia-industry-institution interaction, with a national agenda and fast results
2. Build a critical mass consisting of infrastructure, R&D, students and leadership
3. Provide Meraka support to build a national network of LLs
4. Leverage of existing interests (such as involvement of C@R EU rural living lab, digital doorway infrastructure, wireless connectivity and eHealth partners)
5. Development of new technology solutions and innovations
6. Local and international networking and co-operation of South African researchers.

Some of the planned activities within MI include:

- Identify roles of partners in LL establishment (nationally and internationally);
- Ensure that Meraka projects strive toward participation in the LLs in different communities;
- Establish best practices from LL projects by developing a questionnaire to capture this data;
- Develop monitoring and evaluation of processes and procedures in order to develop a baseline assessment framework;
- Develop a communication platform between different LL projects based on best practices and baseline study;
- Identify similarities and differences between different LL projects;
- Establish criteria for projects to be regarded as LLs;
- Apply LL methods and tools (logging, sensing, user generated content; experience sampling);
- Establish specific targeted conferences or platforms to promote research on the LL idea;
- Support the establishment of a LL network in South Africa.

Due to the recognition of the multidisciplinary nature of LL, our unfolding view is that the glue that will hold together the LL movement in South Africa and transfer it to the rest of Africa depends on the strength of collaboration, first locally; then as a team, internationally.

### Supporting the network of LLs in South Africa

MI strategy is viewed as integral part of the bigger scheme of LLs nationally and internationally. Thus the approach to developing a research agenda is to define problems and seek solutions for them in a collaborative manner with other researchers and practitioners involved in the LL networks. The search for relevant partners for particular key focus areas (including amongst others, wireless connectivity, ICT for education, e-health, digital doorway, disability group, and SMME development) and facilitating their collaboration is one of MI's functions. We have an open invitation to bring in potential partners on board from various sectors and disciplines to collaborate in a network of LLs in South Africa.

The Cooperation Framework on Innovation Systems between Finland and SA (COFISA), together with Meraka Institute has initiated a project for establishing a community and network of Living Lab practitioners, Living Labs in South Africa (LLiSA), interested in advancing user-driven innovation and Living Labs in South Africa (LLiSA 2008).

## Future development of Living Labs in South Africa

COFISA is a programme that has been developed jointly by the Governments of South Africa (through the Department of Science and Technology) and Finland (through the Embassy of Finland in Pretoria). Its objective is to enhance effectiveness of the South African National System of Innovation, contributing to economic growth and poverty alleviation. In addition, COFISA aims to build structures and competences that accelerate innovation system development at the provincial level. The COFISA programme promotes Living Laboratories as key mechanisms for creating sustainable, user-centric innovation environments in South Africa both in rural and urban environments (Enkenberg 2008).

The purpose of the LLiSA network is to create capacity for understanding, establishing and developing Living Lab activities, support pilot projects in SA and to facilitate local and international collaboration and linkages. It links interested developers, research organizations, industry, and government together for advancing regional Living Lab initiatives. The role of COFISA specifically is to facilitate the network activities and learning opportunities in South Africa and between South African and Finnish/Nordic Living Lab communities, connected to the European Network of Living Labs (EnoLL). LLiSA objectives include:

1. To build a strong, coordinated and functional network between existing and potential Living Lab researchers, utilisers and facilitators in South Africa
2. Facilitate learning about Living Labs and open user-driven innovation in South Africa
3. Encouraging collaboration between government, research organisations, the private sector, NGOs and users in Living Lab contexts
4. Disseminate knowledge, experiences, build collaborative (project) activities and share resources among the members of the network
5. Facilitate international collaboration, knowledge transfer and exchange between SA and Finnish/Nordic Living Lab experts and create international linkages in general
6. Showcase successes and raising the status of Living Lab work in SA for impacting RDI policies and funding frameworks

Furthermore, the COFISA/Meraka partnership will promote awareness about Living Labs in South Africa, create collaborative, networked activities around thematic areas and facilitate knowledge transfer between Finnish and South African Living Lab practitioners.

The network collaboration was started by a working visit to Finland in May 2008 which provided an opportunity for a few South African Living Lab stakeholders to get acquainted with various Living Lab cases and models in Finland and the critical issues when developing open innovation environments. The delegation met with different organisations involved in urban and rural Living Lab initiatives in Finland: research communities, private sector companies and municipalities. The purpose of that visit was also to construct a view on the key issues and proposed actions for South African contexts.

A workshop was hosted on Living Labs and open, user-centric innovation in June 2008 which reviewed the motivations for developing Living Labs in South African context and drafted a collaborative agenda for a network of Living Lab practitioners.

## Future agenda

A decision in principle has to be taken by the LLiSA network whether it will form a co-ordinated, collective body of knowledge, reason, resources and influence. If so, this will dramatically widen the approach beyond research agenda to policy. At a national level, the LL research also aims to have significant influence on, and be recognised for, shaping the South African system of innovation. As a start, establishing a position paper ('the case for LLs in South Africa') is absolutely crucial. If LLiSA role players are involved in defining the potential for LLs and what can be achieved, aggregation could occur on a massive scale, and synergies with wider socio-economic development interests would have far greater power. Granted, uncertainty as to what is a LL is still an issue among South African role players. However, there seems to be keenness to tackle the strategic and ideological aspects whilst the research and practical implementation continues.

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