Strengthening the Innovation Ecosystem in Tanzania

TANZICT

2011-2015
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Graphic Design & Layout | Printing: Flow Communications (South Africa)

We wish to thank all those who have contributed to making this publication a reality - through the many TANZICT blogs to which we had access, the personal stories and documenting of personal achievements, the myriads of photos, and the very useful feedback on drafts. All have added to making the book what it is. Asante sana!


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TANZICT AT A GLANCE
### National ICT Policy Review

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<tr>
<td>UNECA &amp; MCST collaboration on ICT policy</td>
<td>Dar es Salaam</td>
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<td>Stakeholder workshops</td>
<td>Dar es Salaam</td>
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<tr>
<td>Baseline study</td>
<td>Dar es Salaam</td>
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<tr>
<td>Unconference - citizens feedback on ICT policy</td>
<td>Sengerema</td>
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<tr>
<td>Big Results Now - STI stakeholder workshops</td>
<td>Dar es Salaam</td>
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<tr>
<td>ICT policy review &amp; implementation plan</td>
<td>Dar es Salaam</td>
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### Capacity Building in MCST

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<th>Activity</th>
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<tbody>
<tr>
<td>Training of MCST staff - ICT, telecomms &amp; other</td>
<td>Dar es Salaam</td>
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<tr>
<td>Refurbishment of MCST computer lab</td>
<td>Dar es Salaam</td>
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<tr>
<td>Electronic Document Management System in MCST</td>
<td>Dar es Salaam</td>
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<td>Situational and Needs Analysis for MCST</td>
<td>Dar es Salaam</td>
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<td>Corporate ICT policy development</td>
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### Living Labs

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<tr>
<th>Lab</th>
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<tr>
<td>R Labs Iringa</td>
<td>Iringa</td>
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<tr>
<td>Kigamboni Community Centre (Living Lab)</td>
<td>Kigamboni</td>
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<td>Tanzania Youth Icon TAYI (Living Lab)</td>
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<td>Elimu Living Lab/Elimu Academy</td>
<td>Sengerema</td>
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<tr>
<td>Mbeya Living Lab</td>
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<td>Arusha Ecolab</td>
<td>Arusha</td>
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<tr>
<td>Social media training - CHAVITA, Tanzanian Association for the Deaf</td>
<td>Dar es Salaam, Dodoma, Kilimanjaro, Tanga, Arusha, Shinyanga, Pwani, Iringa, Morogoro, Mtwara, Mbeya</td>
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### Pre-incubation

<table>
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<th>Activity</th>
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<tbody>
<tr>
<td>Pre-incubation cases selected with DTBi</td>
<td>Dar es Salaam</td>
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<tr>
<td>FEMTANZ - FEMTECH training for women entrepreneurs &amp; Train-the-Trainer program (Phase 1)</td>
<td>Dar es Salaam</td>
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<tr>
<td>FEMTANZ - FEMTECH training for women entrepreneurs &amp; incubator managers &amp; Train-the-Trainer Program (Phase 2: extension of FEMTANZ)</td>
<td>Arusha, Morogoro, Pwani, Mbeya, Singida, Tanga, Shinyanga, Kigoma, Kilimanjaro, Mara, Kagera, Dar es Salaam.</td>
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<tr>
<td>Technology transfer and pre-incubation training</td>
<td>Dar es Salaam, Mbeya, Arusha, Zanzibar</td>
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### Entrepreneurship & Innovation Awareness

<table>
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<tr>
<th>Activity</th>
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<tbody>
<tr>
<td>Awareness raising workshops with NM-AIST, UDSM College of ICT, UOI, DIT</td>
<td>Arusha, Dar es Salaam, Iringa</td>
</tr>
<tr>
<td>ICT innovation and entrepreneurship course (SUZA)</td>
<td>Zanzibar</td>
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<tr>
<td>Entrepreneurship week at University of Iringa</td>
<td>Iringa</td>
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<tr>
<td>Entrepreneurship and innovation training - NM-AIST, DIT, MUST</td>
<td>Dar es Salaam, Arusha, Mbeya</td>
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<tr>
<td>TeamAcademy Coach Training</td>
<td>Iringa, Arusha, Zanzibar, Dar es Salaam</td>
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<tr>
<td>Bachelor of Applied Marketing and Entrepreneurship at University of Iringa (TeamAcademy program)</td>
<td>Iringa</td>
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### Innovation Fund

<table>
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<tr>
<th>Activity</th>
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<tr>
<td>Innovation Fund Awards (4 calls)</td>
<td>Dar es Salaam &amp; Arusha</td>
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### TAFINN Exchange Visits

<table>
<thead>
<tr>
<th>Activity</th>
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<tbody>
<tr>
<td>South Africa: Living Labs visit to Rlabs (Cape Town)</td>
<td>Iringa, Arusha, Zanzibar, Dar es Salaam, Mbeya, Sengerema</td>
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<tr>
<td>South Africa: Innovation Theme</td>
<td>Dar es Salaam</td>
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<tr>
<td>Finland: ICT in Education Theme</td>
<td>Dar es Salaam</td>
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<tr>
<td>Finland: Entrepreneurship Theme</td>
<td>Dar es Salaam</td>
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<tr>
<td>Mauritius: IST Africa Conference</td>
<td>Sengerema, Iringa, Arusha, Dar es Salaam</td>
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<tr>
<td>Finland: Foresight Theme</td>
<td>Dar es Salaam, Zanzibar, Tanga</td>
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<td>Finland: SLUSH conferences 2014 &amp; 2015 (startups &amp; hubs)</td>
<td>Dar es Salaam, Arusha, Mbeya</td>
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<td>Kenya: AITEC conference, Nairobi</td>
<td>Dar es Salaam</td>
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### Innovation Spaces

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<tr>
<th>Activity</th>
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<tr>
<td>Innovation Space (Buni Hub) at COSTECH</td>
<td>Dar es Salaam</td>
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<tr>
<td>Innovation spaces - planning &amp; ideation</td>
<td>Mbeya, Iringa, Zanzibar</td>
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### Foresight

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<th>Activity</th>
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<tr>
<td>Foresight training</td>
<td>Dar es Salaam, Tanga, Dodoma</td>
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<tr>
<td>National Foresight (planned)</td>
<td>Dar es Salaam and Bagamoyo but with participation from throughout Tanzania</td>
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THE TANZICT JOURNEY
GREETINGS
Finland and Tanzania have excellent bilateral relations stretching back to the independence of Tanzania in 1961 and even further. The close political relations are well illustrated by Prime Minister Katainen’s successful visit to Tanzania in 2014 and President Kikwete’s equally successful visit to Finland in 2015.

Due to Tanzania’s rapid economic growth averaging around 7% per year since the change of the millennium the relations between Finland and Tanzania are becoming more diverse as time goes by. Development cooperation still plays a major role, while commercial collaboration is increasing. TANZICT and our collaboration in the ICT sector fits well with this transition.

Globally Finland plays a strong role in the ICT industry. Nokia is one of the world’s three largest manufacturers of telecommunications equipment and we have a vibrant community of internationally recognized technology startups in the sector including companies like F-Secure, Rovio and Supercell. In Tanzania the ICT sector has been growing very fast, outpacing the rest of the economy for a number of years. Mobile telephone connectivity and internet penetration are expanding rapidly. There are already over 28 million mobile subscribers and over 50% of the population own a mobile telephone.

As TANZICT was developed in 2011 just before the boom of the telecom industry in Tanzania, its timing was excellent. In addition, the rapid growth of the technology start-up ecosystem in Finland has coincided with the program. This has built the foundation for strong private sector engagement with the program from both Tanzania and Finland.

The private sector is the driver of sustainable growth in all economies. New technology from abroad played a large role in the emergence of Finland’s industry in the 19th century. Also Finnish engineers with understanding of international technology played a large role in the establishment of new industries. The companies created during this period grew to form the bedrock of Finnish corporate capital and investment during the 20th century.

As illustrated by the case studies in this publication, TANZICT is helping Tanzania to go through a similar technological revolution in today’s global economy. Tanzania has a young and bright workforce, a rapidly growing domestic market, improving links with the international market and is a member of a rapidly integrating East African Community. Supporting innovative and entrepreneurial Tanzanians to create jobs, tax income and domestic capital is important for the development of Tanzania.

Helping Tanzania’s economy to grow through supporting technology and innovation is also of benefit for Finland’s economy. The East African economy is among the fastest growing regional economies in the world and there is still limited competition. Finnish-Tanzanian corporate partnerships not only help Tanzanians with access to capital, technology and global networks, but also help Finnish companies in getting market share early in the development of potentially huge markets.

Finland remains a committed long-term partner of Tanzania as our relationship evolves. TANZICT has been a successful demonstration of what new kinds of partnerships can achieve and I look forward to new cooperation in the sector building on what it has achieved.

Asanteni Sana!

Mrs. Lenita Toivakka
Minister for Foreign Trade and Development
Government of Finland
Ministry of Works, Transport and Communication, Tanzania

It is rare to find two nations with more sincere cordial relations than that that exists between the Republic of Finland and the United Republic of Tanzania. From the Tanzanian Government’s point of view, Finland has remained a trustworthy partner since the attainment of the then Tanganyika’s independence, and, later on, the union with Zanzibar to create the unified nation we have today.

We in Tanzania are fascinated by the great strides in development that the nation of Finland has managed to attain in a relatively short time. Finland’s achievements are in great part due to disciplined management of its resources and through investment in its people. Finland today is renowned for its education system and its role in championing new enterprise and new technology. Tanzania can only benefit by learning from Finland’s experience.

When an opportunity presented itself, in 2011, for Tanzania and Finland to collaborate through a programme that emphasizes the use of ICT and Innovation to foster socio-economic development for the citizens of Tanzania, my government embraced it wholeheartedly as a vehicle for cross pollination of the Finnish experience to Tanzania. The Information Society and ICT Sector Development Project, TANZICT, was a bilateral project between the two countries which aimed at bringing to Tanzania what had worked with remarkable success in Finland.

As we draw to the close of the TANZICT Project, I am delighted to see that the project has achieved the intended objectives to a large degree. Through the auspices of the TANZICT project, my Ministry has reviewed the National ICT Policy. This policy document defines Tanzania’s aspirations with regards to how the nation will leverage ICT’s for socio-economic development in the short to medium term and sets in motion the mechanism for realization of those aspirations. Support of the review of the National ICT Policy was only the first of three comprehensive areas of concentration of the TANZICT Project.

The second area of focus was the strengthening of the Ministry of Communication, Science & Technology (MCST) so that it is better enabled to carry out its mandate of leading the ICT Sector and Innovation in Tanzania. TANZICT made commendable work in supporting capacity building for MCST staff and through acquisition and implementation of various ICT systems that have improved productivity at the Ministry and enabled better service delivery to the citizens of Tanzania. This support continued even after MCST was split and its constituent divisions merged into the Ministries of Education, Science & Technology and that of Works, Transport & Communication, respectively, in November 2015.

The third area of focus for the project was the establishment of the Tanzania Innovation System. This is perhaps that area of focus where Tanzania most benefited from the unique experience Finland underwent in its journey to becoming a leading world economy. The TANZICT project worked with relevant Tanzanian partners to support innovation and sprouting enterprise. The project also enabled Tanzanian government officials and academicians to visit Finland to see first-hand how the Finnish models in education, innovation and national planning works. Similar visits were undertaken to South Africa, where Finnish models have been successfully adopted.

The successes of the TANZICT Project, big and small, must be attributed to the hard work of all involved in realizing the goals that were set out by the two countries. May these committed people accept the appreciation of a grateful nation.

The TANZICT project worked at all levels of the Tanzanian society, from grass root level with Living Labs located in rural Tanzania to national policy making levels, where the project collaborated with government Ministries, Academia and Corporate entities. All this work has been neatly compiled in this accessible publication, which will serve as a reference to many in the years to come.

It is with great pride that I launch this publication on the achievements of the Information Society and ICT Sector Development Project in Tanzania.

Professor Makame M. Mbarawa (MP)
Minister of Works, Transport and Communication
United Republic of Tanzania
Dear Reader

You are reading the final publication of the Information Society and ICT Sector Development project, carried out in Tanzania from 2011 to 2015. This publication highlights some of the achievements and successes but also some of the challenges and lessons learned along the way.

The stories and case studies related here are as much about the people as about the initiatives and projects. Indeed, one of the wonderful things for us in the Project Office has been to see the achievements and personal growth of our partners and champions.

Most of TANZICT’s activities have been carried out with Tanzanian partners, and therefore we have many amazing people and organizations to thank. The project could not have achieved any of what is documented here without all of you, and we are deeply grateful for the level of involvement and ownership shown by our partners.

We would especially like to thank our partners in the Tanzanian government, the Ministry of Communication, Science and Technology (MCST) as well as the Tanzanian Commission for Science and Technology (COSTECH). Your involvement, interest, guidance and help have been fundamentally important to the successes of the project, and will continue to be so for the many initiatives that will follow in Tanzania beyond the time scope of TANZICT. We would also like to express our thanks to the members of our Supervisory Board and Steering Committee for the valuable discussions, insights and trust that allowed the project to be innovative and to experiment with new ideas and approaches.

We hope this publication will be interesting and useful to all our global colleagues working in the area of ICT and Innovation for Development. We have benefited from lessons and insights gained from many previous projects and from the experiences of others working across the globe. We hope to pay it forward to all and any of you by sharing our experiences in this publication, but also when and wherever we meet each other in the future.

For the TANZICT project team, the publication of this book is both a happy and sad occasion. It allows us to celebrate the achievements of our many Tanzanian partners, but it also means saying goodbye. At the time of writing, a follow-up TANZICT project is in planning, and we wish the new project team well in this endeavour. We are confident that our many Tanzanian friends will be as supportive of them as they have been of us.

Thank you, Kiitos, Asante!

Kristiina, Arnold, Teemu, Jukka, Iiro, Kezia, Irene, Sanna and Simon
AN OVERVIEW
The Information Society and ICT Sector Development Project

INFORMATION SOCIETY - ICT - INNOVATION

Objective: To strengthen Tanzanian information society with enhanced capacities to contribute to the achievement of the Government’s socio-economic development goals

TANZICT is a bilateral collaboration project between the Ministry of Communication, Science and Technology of Tanzania (MCST) and Ministry for Foreign Affairs of Finland (MFA).

It was initiated on the basis that Tanzanian information society aspirations and developments require the build-up of absorptive and innovative capabilities throughout the Tanzanian emerging Information and Communications Technology (ICT) ecosystem. Ultimately these are necessary requirements to achieve the Government’s socio-economic development goals.

An improved ICT policy framework, with strengthened arrangements for its implementation, formed a key pillar of the project as did support to the Tanzanian ICT sector so that it could assume a meaningful role within the emerging Tanzanian innovation system.
TANZICT DASHBOARD

BUDGET:
Total: 5.8 M€
ICT policy review 1.21 M€
Capacity building in MCST 0.69 M€
Innovation Program Activities 3 M€
Cross-component activities (meetings, project staff associated costs) 0.9 M€

INNOVATION AWARDS
Total: ± 225 000 €
Round #1 (Dec 2012): 25 applications, 6 awards
Round #2 (May 2014): 45 applications, 10 awards
Round #3 (Oct 2014): 73 applications, 7 awards
Round #4 (May 2015): 137 proposals, 11 awards

LIVING LABS
Active Living Labs in 4 locations, 2 other organizations in the Living Lab network

BUNI HUB
75 interns (2014 – 2015)
800 registered active users
6 startups mentored; 20 freelancers operating from the Buni Hub; 3 ready to move into incubation
200 events from 2011 to 2014; about 100 events for 2015
8 workshops (2014-2015) with over 150 participants; 20 information sessions

TAFINN EXCHANGE VISITS
Total persons visiting: 120+
Visits by Tanzanians to Finland, South Africa, Kenya and Mauritius; some visits by Finnish visitors to Tanzanian organizations; internal travel between LLs
2011 = 6
2012 = 7
2013 = 36
2014 = 42
2015 = 29
TANZICT ACTIVITIES

REVIEW OF THE NATIONAL ICT POLICY & POLICY IMPLEMENTATION (NICTP)

The changed ICT landscape in Tanzania gave rise to the need to update the national ICT policy. The MCST, in collaboration with consulting support from UNECA, developed a first draft of the new policy in January 2015. A baseline study on the ICT sector resulted in further changes being made to the draft policy. At the time of writing, the NICTP is awaiting Cabinet approval.

ACTIVITIES

Baseline study - Analysis of current national development policies and strategies, and identification of development challenges.

Revision of the National ICT Policy (NICTP) - Participatory, multi-stakeholder review process ending with parliamentary approval of the revised NICTP.

Awareness raising and communication of the NICTP to key decision makers and stakeholders

Draft implementation strategy formulated with comprehensive program of action

- ICT policies and strategies of 13 key sectoral ministries aligned with the NICTP
- Roll out of objectives to institutes, agencies, universities and others
- Establishment of the coordination body/system for implementation
- Monitoring and Evaluation Framework
- Establishment of permanent forums for stakeholder participation
- Regular updating of the strategy as part of annual planning
- Resource mobilization ensuring financial sustainability.

TANZICT funding selected Quick Start activities.

STRENGTHENING THE INSTITUTIONAL CAPACITY OF MCST

When TANZICT was in its initial stages of planning, the MCST had only just been established as a new Ministry (2008). This component provided assistance to the MCST in building internal capacity to fulfill its role of coordinating ICT policy development and implementation within government. An internal corporate ICT policy had to be developed and implemented, which would subsequently act as a model for all other government ministries.

MCST’s mandated role extended beyond ICT policy to include all areas of ICT, information society and innovation. The mandate was not altogether clear and the intention was that the development of an NICTP would clarify roles, responsibilities and mandates.

ACTIVITIES

Development of a Corporate ICT Policy for the MCST

The MCST has the mandate to drive and coordinate the Tanzanian government’s ICT policy development and implementation. As part of this mandate a Corporate ICT Policy needed to be prepared and a model of ICT utilization within and outside of government to be provided. The outcome of the policy formulation process has been an expression of objectives and commitments in the field of ICT and an embedding of the results in MCST’s short- and medium-term planning (2016 – 2017).

Situation and needs analysis

- Skills, resource and organizational development needs derived from the corporate policy
- Assessment of the current situation against these needs.

Development of a five-year implementation plan

Based on the needs analysis, a five-year implementation plan has been drafted.
Documentation Management System
A pilot system was tested and is now being implemented throughout the Ministry. The intention is that it will be implemented in other Ministries.

THE TANZANIAN INNOVATION PROGRAM (TIP)

The very nature of an innovation system demands that its components are interlinked, that they exploit their synergies and that they support each other - none can be seen in isolation. This is very much how TANZICT has operated and all the TIP activities should be seen within this broader context.

Entrepreneurship and innovation awareness
These activities aim to promote awareness about entrepreneurship and related opportunities, and build necessary skills and structures in individuals, at universities and other institutions. The intention was to stimulate the creation of communities of practitioners who could drive and support entrepreneurship and entrepreneurship education in their own domains.

Originally, this was planned to be carried out with student teams from the University of Dar es Salaam’s incubator. A few demonstration projects would be selected which could later be moved into a pre-incubator. When implementation commenced, there was immediate interest from other universities in working with TANZICT. The activity was therefore opened up to any interested Tanzanian university and to other stakeholders, for example, tech hubs such as KINU. Some stakeholders participated only in training and events. In others the result was extensive collaboration - with the University of Iringa, for example, a Bachelor’s degree in practical entrepreneurship was set up using the Finnish TeamAcademy model.

The Innovation Space at COSTECH (now called the Buni Hub) has been key in promoting entrepreneurship and innovation awareness. Buni is a technology hub that fosters innovation and technology
entrepreneurship through capacity building, internships, mentoring programs and community empowerment. It is the first Innovation space to be established in Tanzania.

**Pre-incubation**
The original intention was to select pilot projects and to apply the Living Lab concept to each project (see below) so that innovative business ideas could be tested. However, during the TANZICT inception phase (August 2011 – March 2012) and after an initial analysis of the innovation ecosystem, it was decided to find a Living Lab concept more suited to Tanzania’s socio-economic environment. The Living Lab activities were therefore loosely modelled on the RLabs and other successful South African Living Lab concepts, which had already been tried and tested in similar environments.

Pre-incubation was also tested jointly with the Dar Teknohama Business Incubator (DTBi) housed at COSTECH in Dar es Salaam. The DTBi decided to broaden their services to include pre-incubation, resulting in the decision that TANZICT would support pre-incubation and incubation activities through partner organizations rather than undertaking the implementation itself. The main focus was on training interventions, e.g. FEMTECH training for women growth entrepreneurs, training for SME coaching, and incubation and technology transfer training.

**Living Labs**
Living Labs in Tanzania are community-driven initiatives where communities and local champions define what problems and challenges they want to address in their environments. They, the community, take responsibility for driving the change required to develop relevant solutions.

TANZICT supported six Living Labs in Iringa, Arusha, Zanzibar, Kigamboni, Mbeya and Sengerema through capacity building initiatives in social media, leadership and digital skills. Entrepreneurship development was a particularly important focus both for the Labs and for community members to ensure financial sustainability.

The Innovation Fund
In the original project design, the Innovation Fund was envisaged to support pre-incubation and user testing of projects within the Living Labs. As the nature of both these activities changed during the inception phase, it made more sense to open the Innovation Fund to all Tanzanian innovators.

The Innovation Fund has supported innovative Tanzanian products, services and businesses, with a particular focus on products and services that would solve a societal problem rather than those providing, for example, entertainment or gambling opportunities. The fund had five calls, of which the May 2015 included social innovations. The last call November/December 2015 focused on ICT enabled innovations in Zanzibar.

**TaFinn exchange program**
The focus as outlined in the original project document was to support group visits for Tanzanian entities, students and university staff to Finland. The idea was to promote long-term exchanges for the latter and one annual trip for other stakeholders. However, TaFinn could not fund full degrees, making the longer-term academic exchange less attractive for Tanzanians. As a result, this budget was re-allocated to short-term exchanges and group visits.

Group trips proved to be the most effective and popular form of exchange, as they allowed communities of practice to develop. Some university partners also applied for individual travel support for specific collaboration activities, with trips both from and to Tanzania. Most group trips visited Finland but other countries were included, e.g. South Africa, Mauritius and Kenya. TaFinn funding was also used for internal travel within Tanzania to enable the Living Labs to network and learn from each other.

**Support for stakeholder collaboration in the Tanzanian National Innovation System**
The original plan was to set up an exclusive ‘innovation club’ which would meet once a month, but after discussions with various stakeholders, the decision was made to support existing and emerging networks, and communities of practice.
PARTNER INSTITUTIONS

TANZICT worked in collaboration with a number of Tanzanian institutions, all of which have an important ongoing role to play in developing the Tanzanian innovation ecosystem, now and going forward.

GOVERNMENT PARTNERS

TANZANIA COMMISSION FOR SCIENCE AND TECHNOLOGY (COSTECH)

COSTECH played a pivotal role in numerous TANZICT activities:

• Hosted the TANZICT CTA office and the innovation space, now called the Buni Hub
• Provided linkages to other government organizations as needed
• COSTECH advocated for and drove the Foresight activity jointly with TANZICT
• Managed the Innovation Fund
• Participated as a member of the TANZICT Steering Committee

MINISTRY OF COMMUNICATION, SCIENCE AND TECHNOLOGY (MCST)

National ICT Policy; Corporate ICT Policy; Implementation of the Arlzy document management system; Support for ICT infrastructural requirements; STI BRN Lab review; STI roadmap development; Training for MCST staff to support implementation of ICT systems
LIVING LABS (LL)

Mbeya LL (with MUST); RLabs Iringa (with the University of Iringa); Tanzania Youth Icon (TAYI) in Zanzibar; Elimu LL in Sengerema, Arusha Ecolab, Kigamboni Community Centre

UNIVERSITIES

Nelson Mandela – African Institute in Science and Technology (NM-AIST), Arusha
Living Lab activities; entrepreneurship education development; technology transfer and pre-incubation activities

University of Iringa (UOI)
TeamAcademy implementation; Innovation Space development; technology transfer and pre-incubation activities

Mbeya University of Science and Technology (MUST)
Innovation Space development; technology transfer and pre-incubation activities.

College of Business Education (CBE)
TeamAcademy Coach training; technology transfer and pre-incubation activities

State University of Zanzibar (SUZA)
Renewed ICT curriculum; technology transfer and pre-incubation activities

University of Dar es Salaam (UDSM), Dar es Salaam Institute of Technology (DIT), Institute of Financial Management (IFM), University of Bagamoyo (UB), Sokoine University

These universities participated in different TANZICT training programs, e.g. TeamAcademy coach training; technology transfer and pre-incubation training; TaFinn exchange visits
ENTREPRENEURSHIP SUPPORT ORGANIZATIONS

KINU
KINU Hub has been an important ecosystem partner. Many activities and training workshops have been run jointly. The Buni Hub has been able to learn from the KINU partnership. KINU has mentored many of the Innovation Fund recipients.

SIDO (SMALL INDUSTRY DEVELOPMENT ORGANIZATION)
FEMTECH train-the-trainer and training of women entrepreneurs; pre-incubation and incubation activities, participation in other training.

DAR TEKNOHAMA BUSINESS INCUBATOR (DTBi), COSTECH
Joint pre-incubation testing; mentoring of Innovation Fund recipients; participation in various TANZICT training sessions.

INSTITUTIONS IN FINLAND
TeamAcademy Jyväskylä, Partus Ltd, Aalto University
Turku University, University of Eastern Finland
SLUSH, Demola Tampere
Jyväskylä University of Applied Sciences
Demos Helsinki, Venture Development Finland Ltd., Courage Ventures, Yhteismaa & Kontupiste
A HUMAN RIGHTS BASED APPROACH

The Constitution of Finland identifies human rights protection as one of the objectives of Finland’s participation in international cooperation. This objective has been introduced into Finland’s human rights and development policies. While there is a common international understanding that the core of the human rights based approach (HRBA) is to strengthen human rights through development cooperation, there is no universally accepted definition of how this should be done in practice. For Finland, the HRBA is operationalised through a commitment to strengthen:

- the realisation of human rights as a development result
- inclusive, participatory and non-discriminatory development processes, which are transparent and enhance accountability
- enhanced capacities of rights-holders, duty-bearers and, when relevant, other responsible actors.

Even though the HRBA has not been communicated as a separate theme in TANZICT, the principles can be seen in several activities, with openness and transparency being core elements throughout the program. TANZICT has collaborated only with organizations that respect human rights - where investigation and evaluation have proved otherwise, appropriate actions were taken.

LIVING LABS

- The Pamoja Labs network, of which all the Living Labs are members, states clearly that there should be no discrimination based on race, religion or gender. In Zanzibar, this has meant reaching out to Christians; in Iringa to Muslims.
- The Living Labs are all based on principles of participation and inclusion, with special attention paid to vulnerable groups: women, children, the elderly and the disabled.

- Living Labs use participatory methods in their work to ensure that everyone has a voice in planning and decision making processes. The use of social media has been another way in which people’s voices could be heard.
- R Labs Iringa has trained social media trainers with hearing disabilities who in turn have trained others facing similar physical challenges. Similarly CHAVITA, the Tanzania Association for the Deaf, was given social media and ICT training, and their staff are now in turn training their members. TAYI also offer such services.
- The Elimu Living Lab in Sengerama provides training for uneducated adults to increase their literacy levels, and the Kigamboni Community Centre provides assistance to homeless children. Both LLs make specific provisions for school dropouts who were unable to continue their schooling, for whatever reason.
INNOVATION SUPPORT

• The participation of low-income community members was encouraged through, for example, innovation space developments as well as through citizens’ inputs into MCST’s ICT policy review process, e.g. the Sengerema UnConference.

• The Innovation Fund placed special emphasis on cases where the everyday lives of vulnerable persons can be made safer and more inclusive. For example, Modesta Joseph, a fifteen-year old schoolgirl was awarded a grant to start up Our Cries, a company that aims to stop girls’ harassment during bus trips.

• There was an almost equal gender balance in the technical assistance offered to the University of Iringa; out of 37 students registered originally, 17 were women. The current total stands at 25, of which 10 are female. One of the two student team leaders is also a woman. There are also several women serving on the management board of the student teams. The TeamAcademy coaching program showed a predominance of women – 13 of the total 19 coaches.

WOMEN & GIRLS

Several women-specific activities were carried out under the TANZICT umbrella: (pp. 82 - 85)

• FEMTECH training for women entrepreneurs who wish to grow their businesses. A comprehensive train-the-trainer program was aimed specifically at female trainers.

• Buni Divaz, part of the Buni Hub, aims to attract, encourage and recruit more girls and young women from secondary schools and universities to embrace and explore the potential of ICTs and entrepreneurship.

• Other women-focused events include the Girls Night Out, Bring your Bibi, and an annual Girls in ICT Day.
MAKING THINGS WORK

The road towards development of an Innovation Ecosystem will not always be a fast, straight, well-built or even safe highway - at times it will be no more than a newly-trodden footpath or a bumpy sand road!

In this chapter we look at the struggles encountered during our TANZICT journey and provide some pieces of advice should other travellers wish to travel a similar path. We have documented our insights, realizations and lessons learned in the hope that these might be helpful to others planning or implementing similar projects. Some lessons are very practical, others less tangible. All contribute to improving how we can make things work better in future endeavours – all will ensure that we have a better chance of reaching the same destination together.

The early days: initiating the TANZICT Project

As is common practice with all Finnish development cooperation projects, TANZICT started its life with very detailed project documentation. However, what became apparent after interactions with numerous stakeholders in the early stages of the inception phase in 2011 was that not all the planned activities were necessarily relevant or realistic to implement exactly as planned.

Following discussions between the Embassy of Finland and the MCST, consensus was reached on how the necessary adaptations could be made without spending too much effort on rewriting the project documentation. Changes were therefore accommodated through annual work plans and reallocations of budget. These changes were approved by an appointed Steering Committee and Supervisory Board, both of which included government representation. This allowed TANZICT the flexibility to respond to changes and new needs in the innovation ecosystem as they emerged. This was particularly important since the period 2011 to 2015 saw many new developments, with the rise of new actors and the disappearance of others. From an implementation point of view, resources could thus be re-allocated to where they were most needed.

The drawback of this more flexible approach was that TANZICT results could not be compared easily to the original project document plans and log frame. A very thorough Mid-Term Review (MTR) at the beginning of 2013 proposed further changes, making the measurement of results and outcomes even more tricky. TANZICT’s achievements, and those of its partners, are easily identified but the change in focus has made it a challenge to evaluate whether the project did succeed in achieving its original intentions.

**LESSON #1:**
Building flexibility into the implementation process makes it possible to respond to changing needs as they emerge during the life of the project, but may make the measurement of outcomes more difficult.
When the TANZICT project was initiated, financial and decision making structures and procedures were put in place which were clearly documented in the original project documentation and approved by the MCST. However, the approved decision making structures – a Steering Committee and Supervisory Board - were additional requirements over and above the prescribed ministerial processes. The National Project Coordinator (NPC) and Chief Technical Advisor (CTA) were also assigned responsibilities to supervise how money could be spent within the approved work plans.

The confusion and misunderstanding in implementing the correct procedures resulted in a number of delays and complications that could have been avoided. Overall, about eighteen months of time was lost out of the four-year program.

- A separate MCST account was created for TANZICT, but MCST staff were not adequately briefed that expenditure had to be linked to the Supervisory Board approved work plan and budget. This resulted in considerable additional workloads and complicated financial auditing forensics to track financial transactions and links to the TANZICT project. It took more than a year for the Tanzanian and Finnish governments to resolve these issues.

- During this time funding for the National Project Office (NPO), which was channelled through the MCST, was frozen and the Innovation Fund and Components 1 (ICT policy) and 2 (MCST capacity building) activities were halted. This was further exacerbated by delays in the transfer of funds.

- The late recruitment of the National Project coordinator (NPC) and the Financial Administration Manager (FAM) meant that the financial processes had to be handled by a number of MCST staff during this early period.

**Improve financial and administrative processes**

Government Ministries are guided by administrative policies, processes and procedures that determine what, how and by whom financial decisions are made. The MCST is no exception. There are strict and rigid rules regarding sign-off procedures with all requests having to be presented in writing, in hardcopy, and with multiple signatures provided on the original paper copy. Ultimately the Permanent Secretary is responsible for signing off on all such requests.
LESSON #2:
Clearly defined financial and decision-making structures and processes need to be coupled with a comprehensive communications strategy so that there is a common understanding of what needs to be done by all involved in implementation.

LESSON #3:
A due diligence assessment could be conducted before the start of a project to test the recipient organization’s capacity to manage funds and handle administrative procedures and processes. This would identify gaps, areas where tools need to be provided and what financial and administrative training would be needed. This could be budgeted for and included as an activity during the inception phase of a project. A Monitoring, Evaluation and Learning system (ME&L) should also be created early during project implementation.

LESSON #4:
Baseline information from similar structures in other projects would be helpful in estimating how long activities will take and what timelines would be realistic under different systems, for example, when using government processes.

Understand government recruitment processes

The National Project Office (NPO) staff needed to be hired through MCST. Although the budget came from TANZICT, MCST still had to follow the normal government recruiting processes, including approval for the new staff from the President’s office. It was not clear beforehand how long this process would take but the expectation was that it would happen in a fairly short period of time. Many activities were therefore placed on hold until the NPC and FAM were appointed. One such activity was the writing of the Project Financial and Administration Manual, which was needed for the management of financial and administrative processes of the project. The Manual was only approved in November 2013, more than halfway into the project. The delays also meant that the NPC had to jump into a moving process as the ICT policy review process had started without him.
Understand government processes for channelling donor funding

Donor funding to Tanzanian government ministries has to be budgeted for in each Ministry’s national annual budget. The budgeted sum is the upper limit allowed for donor funds for that Ministry. When the quota is full, the Treasury cannot release money to that Ministry directly.

When TANZICT came into being, this budget simply was not there and in the coming years in the national budgeting processes the donor fund quota for MCST was cut each time to an amount below what TANZICT had budgeted to disburse to MCST. This caused significant delays in the cash flows and subsequently also in the activities of the NPO.

Communities may not be ready to make their own decisions about how money should be spent and this can, and did, give rise to conflict in some communities.

When communities are granted funding, decisions have to be made by that community on how the funding should be spent. In the case of one TANZICT-supported community organization, this led to disagreements within the management team on what the priorities would be. The result was serious conflict within the organization. Some left the organization soon after the incident. It is difficult to apportion blame only to the funding allocation but the funding may have exposed internal conflicts that were already present within the community.

Some of the TANZICT beneficiaries, especially the Living Labs, lacked experience in managing finances and attending to the necessary recordkeeping. This meant that the TANZICT project staff had to spend a significant amount of time providing financial support and handholding. Although frustrating at times for all parties, the experience was useful in building their capacity to manage not only project funds, but also their personal finances.

LESSON #5:
Project planning time should be used fully to plan not only the content of the project, but to initiate preparations within government and to work within their frameworks - it is not realistic to change government processes to accommodate a project. Since most project planning phases are long, this would be an ideal time to carry out these types of preparations.

LESSON #6:
Implementing organizations need sufficient time to interact with grassroots organizations so that good working relationships are established before any significant funding is disbursed. The disbursement process needs to be inclusive and widely understood. A mutually-agreed plan needs to be developed that is signed off by both parties. Training in financial management for partner organizations will ensure the more effective management of cash flow.

Receiving money can be as much of a problem as lacking it

Lack of funding may be a problem but sometimes the provision of additional funding or expert inputs can create even bigger problems.
Community-driven innovation needs time

The concept of community-driven innovation has been difficult to grasp for many of our TANZICT partners. Tanzanian culture, especially in government organizations, is driven by rules and processes. The self-selecting nature of community-driven activities did cause some anxiety. Questions were raised as to how the Living Labs were chosen in terms of location, which institutions would participate and who in local communities would be involved.

The possibility of communities taking charge of their own futures, as a Living Lab, was not easy to grasp nor was the idea that a passionate community member could mobilise others in the community to get things done. The point that no government intervention was required, in the operations or the focus of a Living Lab, was not well understood initially.

LESSON #7:
Community-driven innovation needs time and local champions, as well as space and time to learn, experiment, fail and learn from the failures. This means a lot of time spent with people and organizations, getting to know them, identifying the potentially right partners and starting by doing things together. Sometimes the early successes are very small, but they can nevertheless be very important.
Reflections from Kristiina Lähde

When I was preparing for our first Living Lab workshop in Iringa I was not sure what to expect - would it work, would people open up and talk about their problems? I planned the participatory workshop and went through the plan with Yusuf Ssessanga and Martin Yesaya who facilitated in Swahili. During the workshop things looked good, people were active and everyone was talking. We listed 19 problems, defined four projects. I did not expect much more for this first round; this was enough of a learning experience to spark an attitude shift. I was really surprised when I got a message from Yusuf a couple of weeks later to say that most of the projects had actually started, they had talked with the municipality, visited local companies and in general taken action! That’s when I knew it was going to work in Iringa.

TANZICT Chief Technical Advisor 2011 – 2015

Innovation is not a garden, it’s a rain forest!

Dr Hassan Mshinda, Director, COSTECH
Cultural differences should be seen as an asset

In Tanzania, as in many African cultures, information is valued but not shared freely, age and status are highly respected, younger people are not expected to speak out in group situations, and they would definitely not disagree or contradict the opinions of their elders. Tanzanian culture is risk-averse and the education system teaches students to conform rather than to do things differently.

In contrast, the Living Labs model is largely about creating culture – a culture of volunteerism, of open sharing of information, of co-creation; of flat, non-hierarchical organizations where every person’s input is valued independent of status; of creativity and risk-taking. This is in strong contrast to societal norms.

LESSON #8:
Understand your fellow travellers and make sure that they understand you. Identifying and discussing cultural differences can define the success or failure of collaboration. Accept that some travelers want to walk, others want bicycles and the rest want to drive. It is not a race and not everyone wants to move at the same pace. This approach may take longer but will pay off in the end.

Not everyone should be welcomed on the bus – not all fellow travelers on the side of the road want to go to the same destination. Do not allow projects to be used for personal gain and focus on commonly-defined goals.

Change attitudes towards standing out from the crowd and risk-taking

Attitudes towards entrepreneurship are changing and the public support from government has helped. A big challenge comes from the school system which does not encourage challenging or questioning existing truths. Students learn to look for only the (supposedly) correct answer, which leads to copycat behaviour instead of trying to do things differently. This attitude is difficult to change in the scope of one project. This is also the reason for including less-educated individuals or self-taught innovators as their thinking is at times less constrained or inhibited by conventional learning.

LESSON #9:
Living Labs require a culture change in terms of co-creation, collaboration and an openness to share. Newly-established organizations are more able to adapt to this type of approach while established institutions find it difficult to adapt to this way of working.

In future, different collaboration structures should be implemented for existing community organizations.
Personal relationships and trust are important

Personal relationships are very important and it is worth the time and effort to get to know the people with whom you work. It increases accountability when agreements need to be reached and the person is known and respected, instead of instructions being received from a faceless organization. The flip side does mean that discipline and negative feedback are more difficult to provide when there is a personal relationship, as are the requests for personal favours and loans.

Trust is a difficult issue. Many times, despite a good trust relationship, information is withheld and problems become difficult to manage because they are brought up too late. This is probably due to the fear of losing funding or losing face.

LESSON #10:
For someone working on a project, think about how much of your own personality you are willing to bring to the relationship. Will you be primarily a friend, a mentor, or a funder, or something in between? Where will you draw the line between work and personal life? Will you be able to say no to requests for help, and will you want to?

There are no right answers, but it helps to be prepared and think about it.
In 2003 Tanzania wrote its first National ICT Policy, referred to as the NICTP 2003. This document instructed government on the course of action it was to take to derive the most benefit from Information and Communication Technologies (ICTs).

At that time ICTs were viewed as merely an emerging phenomenon. They were little understood and only a few forward-looking arms of the government were applying them, although in an unplanned and poorly orchestrated manner. At that stage the potential of ICT as an enabler of socio-economic advancement had not been fully recognized at the national level. NICTP 2003 provided a much needed framework to guide the government in its investment and use of ICTs.

NICTP 2003 is widely acknowledged as the origin of many significant achievements that Tanzania accomplished in the period following its promulgation:

- Enactment of the Tanzania Communication Regulatory Authority Act, which established TCRA, the communications regulator.
- Construction of the National Fibre Optic Broadband Backbone, which has facilitated provisioning of cheap broadband to communities.
- Elevation of ICTs to the national level through the establishment of a Ministry responsible for ICT.
- Improved access and quality of communication services through the deregulation of the telecommunication sector, thereby opening up the sector for competition.
- Orchestrated use of ICTs for service delivery by government through the establishment of the e-Government Agency.

Notwithstanding these successes, by 2011 it became apparent that a policy review was needed to take advantage of the opportunities offered by an ever-changing ICT landscape, and to meet the different challenges presented within this environment. For example, whereas telephone penetration was a major preoccupation in 2003 (with levels at 1.2% of the population), reforms introduced by NICTP 2003 led to the telecommunications sector becoming amongst the most liberal in Africa. The result was an influx of Foreign Direct Investment (FDI) in mobile telephony resulting in the telephone penetration rate rising to above 60%, most of which is accounted for by mobile with a dwindling proportion of landlines.

Internet usage proliferated as a result of the massive investment injected by the public and private sectors into the construction of ICT infrastructure. Through the private sector, Tanzania saw the landing of the first submarine cable, SEACOM, and the installation of a nationwide wireless access network that facilitated the provisioning of mobile internet service throughout the country. The government also participated in the EASSY Consortium which brought in a second fibre optic cable. Installation of the National ICT Broadband Backbone (NICTBB) further reduced the cost of long haul transmission for data and voice.

The changes in the ICT landscape made it necessary for government planners to re-align their focus from the relative absence of telecommunications infrastructure to the use of ICT to promote the economic advancement of Tanzanian citizens.
The ICT policy review process faced many challenges:

- The participatory nature of the process, with inputs from many stakeholders all with divergent requirements, requires time.
- The process is dependent on the willingness of key stakeholders to make themselves available for consultations and inputs.
- The inclusion of new persons late in the process, and the need for iterative approval procedures meant that processes downstream were also delayed.
- There were also delays in the government procurement of the consultants, which together with delays in the availability of funds, led to a late start.

All these resulted in a timeline that was long and slow, a challenge when working in the fast-moving ICT environment.

NICTP 2015

The National ICT Policy 2015 (NICTP 2015) is based on the premise that Tanzania’s accelerated development within the emerging information and digital age will not be possible without an ICT-driven development agenda. It was formulated within the context of national vision statements in the Tanzania Development Vision 2025, which recognizes that ICT is central to a competitive social and economic transformation.

At the time of writing, the draft NICTP 2015 was not yet publicly available and was in the process of being approved by the Cabinet of Ministers. Key areas included in the policy are:

- ICT Leadership and Human Capital Development, e.g. elevating the awareness of decision makers on how ICTs can be used as a tool for socio-economic development; development of skills in the use of ICTs.
- Broadband Access and Infrastructure Development
- Frequency Spectrum and Other Scarce ICT Resources, e.g. equitable use of installed national fibre backbone to prevent hoarding of capacity; government interventions on the supply side to ensure that missing elements necessary for maximising
ICT benefits are available. An example is the national data centre which is currently being built by government.

- E-Services and Local Content Development
- Cooperation and Collaboration. This includes working with other nations to bring in international best practices and attract FDIs to collaborate in building infrastructure such as undersea cables; to leverage Tanzania’s geography by serving landlocked neighbouring countries with access to undersea cables.
- ICT Legal and Regulatory Environment
- ICT Security, Safety and Standardization
- ICT Sector and Industry Development
- Productive Sector Development
- Crosscutting Issues, e.g. good governance, women in ICT, protection of children online.

The policy formulation process was participatory, benefiting from contributions from a wide spectrum of stakeholders including government ministries, departments and agencies; the private sector; ICT operators; research organizations, academia, development partners, non-governmental organizations, public institutions and the general public.

Making Citizens’ Voices Heard – the Sengerema Unconference

On 14 March 2015, Sengerema’s residents were mobilized for the purpose of airing their opinions regarding the potential of ICT and for them to provide a valuable contribution to the National ICT Policy. This was done through an Unconference, a conference organized, structured and led by the people attending it and where all the participants are encouraged to participate.

The Unconference tested the level of understanding in the community on ICTs, how ICTs are used in their everyday lives and what communities need. It also provided insights and perspectives on the accessibility and suitability of the current ICT services available to the citizens of Sengerema.

An intensive mobilization campaign included the use of invitation letters, posters and banners, word of mouth with groups of youth such as bodaboda riders, taxis and commuter drivers and a radio campaign two days prior to the event. Mobilization continued to take place on the day of the event by offering free transport from Sengerema town to the location of the event.

605 people attended – 420 students, 13 teachers, 12 government officers, 67 farmers, 56 entrepreneurs, 3 media workers and 34 were jobless.

Further Unconferences are planned for Iringa, Mbeya and Dar es Salaam.

Next steps

Once the national ICT Policy has been approved by the Cabinet of Ministers, an implementation strategy will be set underway. This will take several years and require substantive financing. It is not the intention that the implementation will be supported by TANZICT.
Reflections from Arnold Thomas Masaro

When I joined TANZICT in 2012, I came from a traditional corporate setting concerned primarily with maximizing returns on investments. I had little knowledge of development support or the type of work carried out by TANZICT. My biggest question was, ‘Where is the profit motive for TANZICT?’

As days went by, I came to a profound understanding that the architects of the TANZICT program were aiming for something greater, that transcends preoccupations with short-term monetary benefits. TANZICT was in the altruistic business of developing people and creating the necessary environment to allow them to grow. If the project’s goal is achieved, Tanzanian citizens will be empowered in using ICTs to achieve socio-economic advancement, including running profitable businesses.

My primary responsibility in TANZICT was around the formulation of the National ICT Policy and the strengthening of the Ministry of Communication, Science and Technology. I also participated in the National Innovation Program. I worked with visionary individuals at the Ministry, the Project Office, the Embassy of Finland and the public at large.

How inspired I was by the young community organizer running the Sengerema Living Lab! Or the young high-flying executive from the biggest bank in Tanzania, who contributed so generously to the National ICT policy formulation process. I will always remember the young schoolgirl who pitched one of the best Innovation Fund grant proposals we ever saw. And there were my Finnish colleagues in the CTA’s office and the Embassy, whose commitment to helping Tanzanians knew no bounds. Indeed, there were many individuals who won my admiration. I am so happy that TANZICT provided a platform for the country to benefit from these people.

Wherever I go, TANZICT has taught me that the wellbeing of a society is attained by uplifting people through the provision of opportunity. ICT will continue to be an important enabler for new opportunities if applied correctly.

TANZICT National Project Coordinator
CAPACITY BUILDING IN MCST
CAPACITY BUILDING IN MCST
Empowering the Ministry to fulfil its mission

The second component of the TANZICT Project aimed to strengthen the capacity of the Ministry of Communication, Science & Technology (MCST) to fulfil its mission in leading the ICT Sector in Tanzania. TANZICT’s interventions were directed at three key pivotal areas:

- Formulation of a Corporate ICT Policy and Strategy
- A Situation and Needs Assessment Study
- A Development Plan for MCST with three focus areas: capacity building for MCST staff, acquisition of ICT hardware, and the deployment of software solutions.

Through its establishment charter, MCST has been charged with providing policy-level oversight of the ICT sector in Tanzania. MCST is similarly responsible for Posts and Telecommunications, Science Technology & Innovation and a number of parastatal organizations affiliated to the Ministry’s mission.

During scoping for the TANZICT project, consultants advised that MCST would benefit from well-targeted interventions to strengthen its institutional capacity, particularly if it was to execute the National ICT Policy (NICTP) effectively. This was also deemed necessary as MCST was designated as the institution to take over TANZICT at the end of its project life, a decision taken as part of the bilateral agreement between Finland and Tanzania.

Formulation of a Corporate ICT Policy and Strategy

Since its inception in 2008 the Ministry had not been able to implement an ICT Corporate Policy pertaining to its objectives regarding staff capacity, business processes, customer services, effective communications and information sharing among staff, the working environment, resource utilization, physical security and ICT awareness and usage for effective service delivery.

To improve this situation, and with support from TANZICT, a consultant was hired to work with MCST staff to prepare an ICT Corporate Policy and to develop an implementation plan for operationalization and the enhanced use of ICTs in the Ministry. The policy and strategy are expected to remain relevant in the medium term, with periodic reviews to respond to the demands of an ever-changing ICT landscape.

Situation and needs analysis

Through the auspices of TANZICT, MCST hired the Eastern & Southern African Management Institute (ESAMI), an international university based in Arusha, Tanzania. The consultant worked with MCST staff to carry out a situation analysis and needs assessment of the MCST and to develop an appropriate implementation plan focusing on the following areas:
• Attitude and behavioural change
• Improvement of business/work processes
• Improvement of the working environment
• Improvement of the communications strategy to ensure efficient and comprehensive information dissemination
• Improvement of performance management practices.

The tendering process for the consultancy faced a series of challenges that resulted in delays in implementation of these activities. The rigorous requirements of government procurement rules and the poor responses from bidders when the tender was first floated were contributory factors.

The methodology adopted by ESAMI included a literature review, internal and external consultations, an institutional self-assessment and capacity assessment, and finally a training needs assessment. The European Foundation for Quality Management (EFQM) Business Excellence Model (BEM) was used for the institutional assessment as the MCST already follows this management model in its corporate strategy. The recommendations, presented in January 2015, were varied and comprehensive and will cover a timeframe of five years.

Although the scope of the recommendations was beyond the resources available to TANZICT, the project has adopted them as a blueprint to guide its own interventions in strengthening MCST’s institutional capacity.

Taking the recommendations forward

Three key areas for improvement have been identified:
• Strengthening communication channels between the Ministry and citizens / stakeholders
• Developing the capacity of MCST staff to manage new systems and change staff mindsets
• Facilitation of the restructuring process at MCST.
Strengthening communication channels with citizens

ESAMI found that communication between MCST and citizens was ineffective in facilitating interaction during policy development and implementation. To address this challenge, consultants recommended putting in place IT systems that would enable both citizens and staff to receive relevant and reliable information. Working on this recommendation, TANZICT supported the implementation of electronic communication systems for MCST, including a Document Management Information System (DMIS) and a government e-mail system.

Acquisition of computing hardware and networks

TANZICT supported the MCST in the acquisition of much-needed computing hardware systems and the installation of networks. To maximize the use of the installed IT systems, MCST staff were trained and an effective change management process has been put in place that is still ongoing at the Ministry.

MCST SUPPORTS THE LOCALLY-DEVELOPED ARLZY DOCUMENT MANAGEMENT SYSTEM

MCST recently purchased a Document Management System from Arlzy Microsystems Ltd, an ICT company based in Tanzania. This positive outcome followed after a review and recommendation by the Public Services Management Division of the President’s Office.

The founders, Joel Mtebe and Philipo Stephen, were pre-incubated at TANZICT in 2012 while they developed the original business concept. They were then incubated at the DTBi where the prototype was developed into a fully-fledged product. TANZICT also provided $10 000 for development and the purchase of testing equipment.
Support for STI Reform

TANZICT supported MCST in its quest to elevate Science, Technology and Innovation (STI) onto the national agenda under the Big Results Now (BRN) initiative. The initiative aims at adopting new methods of working within specified (and accelerated) timeframes for delivery.

TANZICT’s intervention included support for three essential stakeholder consultations that form part of the BRN methodology:

**STI BRN Pre-Lab:** a focus group tasked to coordinate the actual STI Lab. This focus group deliberated and decided on the agenda, invitees, timetable and other logistics for the lab.

**STI BRN Lab:** This workshop brought together stakeholders from the STI fraternity in Tanzania, and produced authoritative documents to be used in taking STI forward in the country.

**STI Lab Syndication Process:** This process is used to disseminate the findings that were derived from the STI BRN Lab. The process serves as a tool for broader awareness creation to parties that are relevant in the execution of the findings of the workshop.

The Tanzanian Big Results Now initiative is an adaptation of a Malaysian model of development that aims to achieve goals at a faster pace than would normally be expected.
BUILDING AN INNOVATION ECOSYSTEM
Innovation Spaces offer a comfortable but stimulating and inspiring environment where innovation can be fuelled and ignited. They are designed in such a way that they meet the needs of a wide range of users – entrepreneurs, businesses, students, community members, NGOs and any others who could make a contribution or benefit from its use. They are spaces where people can network, collaborate, train, work and study and where different programs can be offered by a range of stakeholders. The key element is that it is an open space that encourages collaboration and networking, with a reliable supply of electricity and internet connectivity. Ultimately the most critical element is the users - they form the heart of the space, they are the ones who shape and define the programs they need and who, as a result, gain new levels of knowledge, skills and understanding.

An Innovation Space is not static – it has to respond to the ever-changing needs of its users and to ongoing changes demanded by an evolving innovation ecosystem. Constant feedback is needed from users to ensure that the space remains relevant and effective in generating new knowledge and skills.

In the creation of Tanzanian Innovation Spaces, the universities, Living Labs, existing technology hubs such as Buni and startups have played a crucial role, while government has taken the role of supporting and nurturing the early stages of innovation space development.

Initially known as the TANZICT Innovation Space, the Buni Hub at COSTECH (Dar es Salaam) was the first innovation space in Tanzania. Since its inception in 2011, the Hub has become a place where users share innovative technology and entrepreneurship ideas that can create value in Tanzanian society. Initially the Hub was an open co-working and co-creation space, a place where young entrepreneurs would meet and network, share and work on their ideas and business ventures, study in a quiet environment.

The past four years have seen a major transformation and Buni now supports several communities and entrepreneurship initiatives using ICT and technology, e.g. two student communities at the University of Dar es Salaam, a fabrication lab at Kitunda, an ICT-for-girls initiative Apps and Girls and the recently established Buni Divaz, a women in
ICT community. The latter are particularly important since fewer than 20% of the Buni community are women.

To date, Buni has received more than 3000 registration requests and is home to over 800 registered active members who take part in various Buni programs and activities. Over 60 percent of Buni Hub users are college students. From an initial two Buni Hub managers, the management team has increased over time to six full time members, all drawn from the Buni community.

Buni offers four core programs:

- **Buni Internship Program.** The Program assists college students to build their capacity and develop their skills. It also acts as a pipeline for college students who wish to establish their own startups at Buni. The Program has reached more than 120 students from different universities throughout Tanzania and has produced 14 projects that will move forward to the Buni Mentoring Program.

- **Buni Mentoring Program.** First piloted in 2013-2014, the Program assists early stage startups and individuals with good ideas to develop these further by providing access to mentoring. The program requires the entrepreneur to meet with a mentor at least once a week for a three-month period. Successful graduates from the intern program can apply for a space in the Buni Mentoring Program to deepen their business knowledge and transform their ideas into early-stage businesses.

**Soka** (www.soka.co.tz) is an example of one of the projects taken through the Buni internship program. After joining in 2014, the team developed an Android mobile application that provides an African football experience with updates on match scores, news, statistics and video clips from soccer teams, leagues, cups and other African competitions.

Soka has now progressed to the mentoring program where Buni has assisted in bringing the product to market.
Reflections from Iiro Kolehmainen

I have worked with Jumanne and Brian, Buni Hub managers, from the beginning of my stay in Tanzania. Both managers have taken huge steps when it comes to managing the community and nurturing it in order to reach the next level. Buni Hub and its members are starting to learn faster and develop the hub in a more active manner than ever before. People care about what is happening in the space, how the community is operating and there is a shared vision on what Buni Hub is to become in the coming years.

TANZICT Associate Expert 2013 -2015

Agrinfo maps farmland ownership and serves those looking for farms and who need to confirm ownership. The database records locations of the agricultural investment and related information including ownership, area size, type of investment and expected outputs. Agrinfo works in partnership with farmers’ associations, financial Institutions and input/output suppliers.

Rose Funja, one of the founders, joined Buni in 2013 and was supported in her business from the ideation stage to startup. A highlight was the two-week startup boot camp where entrepreneurs learnt from Tanzanian and international startups who were already beyond the Minimum Viable Product (MVP) stage.

- Buni Community Outreach Program. This program aims to pull in diverse members from local universities and other communities through social media and referrals from friends and family. For example, Buni Divaz has attracted young women from secondary schools and local universities who wish to further their interests in ICT and technology. Another initiative, the Buni Makers Community, has built an e-waste 3D printer, the first of its kind in Tanzania; the community has also built an e-waste drone. Buni provides a platform for other activities such as Buni monthly talks, community meetups, bootcamps, hackathons, workshops and career briefings.

- Buni Mini Fabrication Laboratory. Started in January 2015, the ‘fablab’ is a small workshop equipped with sophisticated rapid prototyping tools for product development. The goal of the Buni fablab is to inspire makers to learn, create and commercialize new products. One example is Prinpo, who are using the fablab to produce teaching aids for Tanzanian schools. (p. 92).

Three outstanding factors have contributed to Buni’s success: open minded hub managers willing to learn, technical support from the TANZICT team, and a user community who have valued what Buni offers, as a space and as a ‘family’ where new ideas are spawned.
Developing Regional Innovation Spaces - MOVING BEYOND BUNI AND DAR ES SALAAM

TANZICT has supported the development of three regional Innovation Spaces - in Zanzibar, Iringa and Mbeya. Each of these has its own character and unique base of knowledge and skills. In each location the process followed was much the same. Local communities took the lead in deciding for themselves what goals and objectives needed to be met in the Innovation Spaces. Creating a shared vision through a process of consensus decision making became the cornerstone for determining what programs would be implemented and where the spaces would be located. Ideas were debated at meetings and workshops. Only then were the eventual requirements for the Innovation Spaces determined and decisions made about the design and look-and-feel of these spaces.

How Innovation Spaces started in Finland

Many innovation spaces start from small beginnings. The movement in Finland was initiated by three students at Aalto University who established the Aalto Entrepreneurship Society. After visits to some of the most advanced hubs in the world, they came up with the concept of the Aalto Venture Garage, an Innovation Space. This was followed by collaboration with the Stanford Ventures Program, resulting in support from businesses who wanted to help these youngsters. Start-Up Sauna and several other programs were created, with the Startup Sauna Foundation arising from these early efforts - created with 57 representatives from the top Finnish businesses. The most recent outcome has been the creation of SLUSH, an annual Finnish event where startups and tech talent can meet with top-tier international investors, executives and media.

Training sessions were organized for the stakeholders, together with many study visits to the Buni Hub in Dar es Salaam, South Africa, Kenya and Finland.

Peer-to-peer learning became a fruitful experience and Buni increasingly played a key supporting role as their own experience and knowledge in hub management and content creation matured.

Once the innovation spaces mature and grasp how to collaborate with local partners, the next step will be to create a national network of collaboration between the various regional innovation spaces.
Iringa

The town of Iringa has seen the collaboration of two institutions in establishing Innovation Spaces, RLabs Iringa (a Living Lab) and the University of Iringa.

RLabs Iringa is located in the town centre and has offered a number of business and leadership development programs for grassroots businesses, e.g. Leadership Academy and Grow Next Level (See chapter on Living Labs). RLabs Iringa was renovated in late 2014, the main focus being on creating an inspiring and colourful environment that would stimulate community innovation.

The University of Iringa is located some way outside the town, and the University’s Centre for Entrepreneurship was identified as an appropriate facility where next level business cases could receive

Proposal for the University of Iringa’s Innovation Space. The idea is to build a deck in the cylindrically-shaped lecture space.
higher level business advice and support. At the time of writing the University has started renovations to set up their innovation space.

The Iringa region is well-known for its dairy and other food production. It is therefore not surprising that some of the startup companies emerging from the University are focused on food production and catering services. By combining the strengths of the university’s knowledge base, the enthusiasm created in the community by RLabs Iringa, and Iringa’s food production capacity, it would be a natural option for the new facility to position itself as a ‘food innovation space’.
Zanzibar

After a year of conceptualization, planning and design the program for the proposed Zanzibar Innovation Space was completed, based on inputs from a broad range of stakeholders and collaborators such as Tanzania Youth Icon (TAYI), local universities, NGOs and ICT business representatives. At the time of writing, designs for the renovations were at the final stage.

The Zanzibar Innovation Space will be located near the House of Wonders and in the heart of the Stone Town Heritage site. The space is owned by the Government of Zanzibar (represented by the Department of Urban and Rural Planning) and is rented to an NGO called Reclaim Women Space in World Heritage.

The Zanzibar Innovation Space has remarkable archives of local women’s stories about old Stone Town. This is a valuable base for mobile applications development, film and video production and other audiovisual creations. The space also offers arts and crafts and tourism activities. Together with the TAYI programs and local universities, the Zanzibar Innovation Space offers huge potential.

Reflections from Teemu Seppälä

When an excited Dr. Muhammad Juma from the Zanzibari Government’s Department of Urban and Rural Planning contacted us with ‘I want to do something similar to Buni in Stone Town’, I was amazed. We visited Stone Town a few weeks later to view a possible site at the Reclaim Women Space in World Heritage site. This felt like a dream come true with the best possible location, a funky neighbourhood and diverse working groups with many different stakeholders.

I have worked with Innovation Spaces on four continents and Stone Town compares with the coolest. The cultural history, diverse groups of people, and the greenfield stage of innovation will make it stand out, even when compared to the most remarkable hubs in the world.

Mbeya

Mbeya is the first city reached when travelling along the main road from Zambia and Malawi to Tanzania. It lies in the Southern Highlands, as does Iringa, and the area is well-known for its forestry and agricultural activities.

The Mbeya Innovation Space concept developed along similar lines to that in Iringa. Both the Living Lab and the Mbeya University of Science and Technology (MUST) need spaces for innovation creation. Both are exploiting the strong synergies they offer in providing different expertise to different audiences.

The Mbeya Living Lab has new premises located centrally in Mbeya near to the main road. The Living Lab reaches out to local communities and provides programs that address their challenges.

MUST is located conveniently in the industrial area of Mbeya where the main industrial companies, e.g. beverage companies, are located. The MUST Innovation Space will be located in an open space next to the main gate of the university. MUST has well-equipped workshops that could be geared to serve the needs of local technology start-ups.
LIVING LABS
Connecting Communities to the Innovation Ecosystem

There are multiple definitions for what constitutes a Living Lab. In industrialised countries they are often driven jointly by companies with their user communities, but in Tanzania the focus is more on uplifting communities and capacitating them to participate in improving their own societies.

In TANZICT, the innovation structure used to improve the role a community plays in the innovation ecosystem has been loosely based on the South African RLabs development model, already existing Tanzanian sustainable community organizations and proven successful Finnish training techniques and methodology.

TANZICT did not specifically select the locations of the Living Labs. When the project was initiated, the focus was on introducing the concepts of Living Labs and community-driven innovation to many different stakeholders and by offering training and workshops around these topics. Many organizations, individuals and groups participated in these early activities and interested groups were asked to bring their ideas on collaboration back to TANZICT. Those organizations and groups that did follow up were the ones who became TANZICT partners.

Following these principles, the communities and local champions defined what problems and challenges they wanted to address in their environments and how they would develop solutions and projects locally. TANZICT played a role in providing capacity building in areas of need as identified by the Living Labs. The project also supported the development and refinement of the Living Lab model so that it could be customized for the Tanzanian context.

RLabs (rlabs.org) is a social enterprise from Cape Town, South Africa. They are one of the more successful community driven Living Labs globally, and operate as a social franchise giving other organizations access to their programs and processes. They were brought into TANZICT to work as trainers and facilitators and to share their experiences and ways of working to transform communities.

The Living Lab approach has at times been challenging for our government partners who are not familiar with such an organic approach, and tend to work with centralized decision-making and government-driven applications and selection processes.
The Lab gave me a sense of volunteering, of being transparent and increases my passion about social work. Today I come out with the formula that leads my life: ME + SOCIETY = SOCIAL IMPACT

Madhu Ruben, Mbeya Living Labs

LEARNING TO HOPE AGAIN
IMMAKULATA NG’ELENGE CARLOS

Lost, confused, hopeless ... that is how I can describe my life two years ago. Having failed secondary school, I did not have many options except working as a nanny earning less than $1 a day. My job did not last long so I went back to my village. Then I came across RLabs and joined the Grow Leadership Academy. There I learnt to hope again and change course. I am now an intern at RLabs and in the Grow Next Level program I am learning to do business. I have planted vegetables and rear pigs on the land my grandfather offered me. My business runs all year with the water pump I bought. I also support my siblings in school. My family is very proud of me.
A SNAPSHOT of our LIVING LABS

Mbeya Living Lab

A small team of committed, spirited and motivated young leaders are running the Lab, located in Iyela, near Mbeya’s city centre.

In addition to the free social media and basic computer classes they have been offering to community members since they started, they have developed a customized champion building strategy based on delivering practical leadership and entrepreneurship knowledge through talent development. The Lab is operated as an open Innovation Space and uses a flat management system to define and implement its activities and projects. Their main focus is to provide a space where community members can learn, grow and develop their talents to improve their livelihoods and ensure the long term organizational and financial sustainability of the organization.

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RLabs Iringa

Initiated as the Iringa Living Lab by TANZICT and collaboration between the University of Iringa and a nearby primary school where university students provided computer training to pupils. It officially became part of the RLabs family in 2013. The organization focuses on customizing and implementing RLabs youth empowerment strategies as well as providing business development support and coaching to the community. The Lab benefits from strong organizational sustainability as quality champions are grown through their various activities; many are involved in the development of the organization. A number of success stories have emerged out of RLabs Iringa as young champions have created personal income generating activities or found employment. The Lab is now building a tissue culture laboratory that aims to ensure future funding of its activities and provides another base to spark innovative ideas amongst community members.

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Tanzania Youth Icon

The only Zanzibar based participant of Pamoja Labs was created with a simple objective in mind: Improve the lives of young Tanzanians. To achieve this goal the team at TAYI secured a space not far from Stone Town where they provide a wide range of free services. Deeply anchored in their community since 2011, TAYI attracts an impressive number of youth from different walks of life. In addition to ongoing training programs in life skills, computer literacy, sign language and entrepreneurship, they also organize topical events to address different social issues present in their environment. Personal growth opportunities are provided through sports, cultural activities and games. A student/member council is elected who, together with management, define plans and implement TAYI’s activities and programs.

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Kigamboni Community Centre

Operating since 2007 and registered since 2009, KCC is the longest running participant in the Pamoja Labs Network. It was initiated by four motivated young Kigambonians who suffered from severe family poverty, parental abuse, lack of education and homeless childhoods; all wanted to give back to the community that had helped them grow into respectable adults despite the everyday challenges they faced. The main aim of the Centre is to be a place where talents can be shared while also benefiting from what others have offered to share along the way. KCC offers free services ranging from sports activities to sewing classes, running a homeless children’s centre as well as income-generating activities through their businesses and through developing strong local and international partnerships. Their initiative covers five main components which are education, social services, vocational training, talent development and business development.

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Elimu Living Lab

The Elimu Living Lab (ELL) was set up as a trial experiment to foster innovative solutions for addressing various challenges facing communities within the Sengerema district in the Mwanza region. The focus was on education for children and youth unemployment. Following positive responses from participants, the Lab was structured into the organization it is today, providing services to hundreds of community members on a monthly basis. Social entrepreneurship development is an important part of the Lab as students are invited to co-innovate, create business plans and implement profitable enterprises that address identified challenges. ELL also offers formal education to primary and secondary school dropouts, an open working space with computers and internet to community members, and runs a number of small to medium scale businesses that ensure the organization’s financial sustainability. A new vocational training centre, focusing on practical skills development coupled with business creation opportunities, is being developed at the time of writing.

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Arusha EcoLab

NM-AIST started a project called the Arusha EcoLab where some of the Living Lab methods were applied. They have been part of the Living Lab network even though the project is currently more of a university outreach project than a fully-fledged Living Lab.

CHAVITA

Tanzanian Association for the Deaf, CHAVITA, participated in some of the Living Lab training workshops. TANZICT organized separate training for CHAVITA regional staff around the country. Even though they are not a Living Lab, they have benefited from the methodology and training, and have been able to train more staff and members of the Association.

Morogoro Living Lab

For a short while, there was a budding Living Lab-type activity in Morogoro, led by the US-based non-profit organization Global Student Embassy (GSE). The group participated in training and workshops in 2012. However, the volunteer leading the organization had to return to the US for family reasons, and the activity died down thereafter.
WILBERT GWIDO’S STORY

Wilbert attended a one-week social media training course organized by the Iringa Living Lab. His story goes as follows. A first born in a family of seventeen, Wilbert lost his father in 2010. As a result, he could not continue with studies after Form 4 because his mother didn’t have enough money to send him to high school.

Wilbert is self-employed and sells SIM Cards as a mobile agent for TIGO, a mobile telephone operator. TIGO was promoting internet services in the country but Wilbert’s problem was that he did not know how to use the internet. After the training Wilbert understood the basics of social media and gained confidence in the use of email, Facebook and blogging. After the training Wilbert went back to his business and confidently started persuading his customers to join TIGO internet. In one week, he managed to convince 48 customers to join. His efforts did not go unrewarded. He received a commission from TIGO for connecting so many customers in such a short time. Wilbert’s business is doing well. Thanks to GROW’s influence where you are challenged to follow your dreams and create your own future, he has decided to go back to school.

Champion building strategy

One of the goals of the Living Labs has been to show that innovation is not only the realm of the highly educated. From the very start, local champions have played a very important role through their ability to drive change and to tackle problems in their own communities and broader society. These champions come from a wide range of backgrounds (university graduates to former homeless children), ages (from 15 to 60+), religions and gender - all work together to achieve common goals.
Grow Leadership Academy (GLA)
BUILDING YOUNG ADULTS INTO CONFIDENT CHAMPIONS

The GLA is an example of a successful program that has been spun out from the Living Lab environment. The program, developed by RLabs South Africa, focuses on leadership development in young unemployed adults (18-25) who are not going to school or who do not have a career path to follow. The program focuses on building personal leadership and goal setting, entrepreneurial and digital skills.

GLA was piloted in RLabs Iringa with a tailored curriculum created for Tanzania. Most of the work was done by the Iringa champions together with Ms Sanna Nevala, a Finnish volunteer who continued working as a Living Lab coordinator with TANZICT. The program has since been replicated at the Elimu Living Lab in Sengerema, using peer trainers from Iringa.

Besides getting young people back on track with their lives and starting new companies, GLA has been important for RLabs Iringa in growing new generations of champions for the organization. Several of the first group of GLA graduates have remained as co-trainers and assistant coaches to new groups. The program is now being replicated in other Living Labs, but adapted to meet local needs and interests.

Physical space and community platforms

Almost all of the Living Labs (Iringa, Mbeya, Sengerema, Kigamboni) started their first activities without a physical space they could call their own. Training sessions and meetings had to take place in spaces owned by their partners – a local university, a church or premises belonging to other NGOs. This had advantages as there were no fixed rental costs and activities could start almost immediately. It also forced the community to seek collaboration and find synergies with others in their environment.

Even though a Living Lab does not necessarily need to be a physical space, all did eventually secure a permanent location. These became important as a focal point for local communities and facilitated broader community involvement. This being said, most spaces are quite moderate and associated costs are kept low.

Local government in Kigamboni offered free space to the Kigamboni Community Centre (KCC) for their activities

"I feel alive in the sense that I’m living to change someone’s life from zero to a hero"

Victoria John, Mbeya Living Lab
In the Living Lab young people are empowered to explore opportunities and idle resources around themselves. I developed my fantastic idea to use plastic water bottles to build water tanks in Sengerema. This has grown to building houses. It’s a real business for me.

Emmanuel Zacharia, Elimu Living Lab
Income generating activities

Financial sustainability is a constant challenge, both to individuals within Living Labs and to them as organizations. For this reason, most focus their capacity building efforts on entrepreneurship development and have started businesses to generate income.

The Elimu Living Lab in Sengerema has opened a print and graphic design shop where they print t-shirts for school uniforms and events, supply posters, and offer other printing services to the community. This now saves the local community many hours of travel. Young people work as interns with the expectation that they will eventually leave to start their own businesses or be employed elsewhere.

Other successful small scale businesses that have been spun off from the different Living Labs cover a wide range of industries, such as:

- manufacturing (moisturizing cream, soap, furniture making using recycled materials)
- services (dry cleaning, hairdressing, tourism, garbage collection and recycling)
- construction (water tanks or other structures using recycled bottles)
- agriculture (amaranth seeds, mushrooms)

Being part of the Elimu Living Lab has restored my happiness and hope, after losing them when my father died four years ago.

*Osward Samwel, Elimu Living Lab*
By the time I joined the Grow Leadership Academy, I was on the verge of making a very stupid decision. I had given up on life having failed secondary school national examinations. There weren’t many options for me. But thank goodness I was told about RLabs and the GLA program. I joined immediately and my life will never be the same.

Having done the six months of GLA, I discovered what I want to be in life. So I enrolled for a certificate course in community development, against my father’s wishes. My father wanted me to become a primary school teacher because jobs for teachers are assured. I resisted his advice because at RLabs we were taught that following your passion is the best approach to life, not doing things that others want us to do. It’s my life and not my father’s life. My reluctance to study what my father wanted me to study caused friction at home, so I was forced to leave home. A family friend who understood my reasoning offered me accommodation at his home and I have now finished the certificate course and will soon enrol for a diploma in community development. I am one of the best students at college and I always come back to RLabs to inspire new students. My desire is to help more young people who could be stuck in life the way I was. I want to be an exemplary community leader.
Peer-to-peer collaboration

As the project has progressed, training and capacity building has shifted from using the TANZICT team and external trainers towards the use of peer trainers. A small team of champions has trained at other Living Labs; this has become the preferred way of working in replicating programs between the Labs.

There are clear benefits to this approach – it is cost effective, there are no language problems, and trainers know the environment and the people. Relationships are strengthened between the Living Labs and champions from different locations, while trainers improve as they learn from each assignment. On the downside, there is less external supervision and problems are sometimes difficult to foresee and understand from the perspective of the TANZICT project office.

As a result of the collaborations, a formal network of Tanzanian Living Labs has emerged with the objective of cross-fertilising skills, knowledge and resources as well as implementing larger-scale projects at the national level. For example, as a team the Labs were able to support the Tigo Digital Changemakers program, thereby broadening the stakeholder’s audience geographically and increasing the quality of applications received.

The Network also collaborated with the MCST by organizing an Unconference aimed at collecting community inputs that would later support the drafting of the government’s National ICT Policy.

Overall, the Living Labs approach has been very positive:

- Over time, relationships have grown between champions, resulting in support to one another outside of the TANZICT support structure.
- The network of Tanzanian Living Labs is also attempting to generate income for the whole network. At the time of writing, plans are underway for a Finnish funded project to use the Living Lab network as trainers and facilitators in entrepreneurship and community development initiatives.
- The concept has been very effective in community development and spreading innovation to the grass roots level. The MCST has already included their replication in future plans for Tanzania. The first TANZICT-supported Living Labs are likely to have an important role in supporting this development.

Achieving the right balance between the independence of each Living Lab and the harmonization of different processes, methodology and metrics continues to remain one of the many challenges. For example, the definition of a champion in Mbeya may not be the same as the one in Sengerema. An impact on a community member in IrINGA may be evaluated completely differently from one in Zanzibar.
Guiding Principles for a Tanzanian Living Lab

LEARNING ORGANIZATIONS

• Accept changes and practice change. Do not be afraid of change. Be able to show how the organization evolves and changes.
• Accept challenges and learn from them. Know your challenges and understand how to overcome them and learn from them.
• Use a knowledge capturing system. Demonstrate what you know about your past, current and future projects.

COMMUNITY DRIVEN INITIATIVES

• Demonstrate that the challenges come from the community and the process used to identify these challenges.
• Demonstrate that the solutions come from the community and the process used to identify these solutions.
• Ensure that implementation of the solutions is driven by the community.
• Solutions must focus on using available local resources (people, material, funds, etc.).
• There is a practical contribution to the Labs from the community (time, space, funds, etc.).

FINANCIAL SUSTAINABILITY

• Demonstrate the steps taken towards the implementation of income generating activities with a development plan. Show how actions to generate funds are constant and positively evolving.

ORGANIZATIONAL SUSTAINABILITY

• Demonstrate a mentoring strategy at ALL levels.
• Understand the inflow and outflow of champions.
• Show implementation of champions’ inflow strategy.
• Show implementation of champions’ outflow mitigation strategy.
• Demonstrate how responsibilities are shared within the organization and what the process is to engage and motivate champions.
• Provide a capacity building strategy for all champions.

SPACE & ENVIRONMENT

• Create an environment that sparks innovation and creativity.
• Provide all basic amenities (water, toilets, electricity and internet) as best as the local context allows.
• Provide working tools and equipment. Broken material should be repaired fast and not lying around.
• Environment must be clean and safe.
• Environment must be welcoming and friendly.

INNOVATION

• Demonstrate uniqueness of operations within the organization.
• Demonstrate uniqueness of solutions to challenges.

PARTNERSHIPS

• Lab must be integrated in the development ecosystem of the community (inflow and outflow of champions) which includes Government, Civil Society, Private Sector and Academia.
• Show how ALL partnerships are mutually beneficial.
• Show how ALL partnerships are built following the current focus of the Lab.

These guiding principles were developed by the Living Lab communities themselves - they debated, they reflected and they reached consensus on how Living Labs should work.
FELISTA’S STORY

My name is Felista Mbilinyi. I finished high school in 2012 but was not successful to join a college. I felt I had lost hope until December 2013 when I was told of an opportunity to join the Grow Leadership Academy at RLabs. I joined GROW and graduated in May 2014. During the program, we were introduced to entrepreneurship, digital media and leadership.

It was then that I realised I am responsible for my life and I can do things that add value to me and my community. We were challenged to think of a community problem which we can turn into a social enterprise.

I thought about malnutrition in Iringa, the region I come from. This region is very productive agriculturally but is leading in malnutrition in the country. I decided to come up with a nutritional product that can help reduce this problem. With advice from the facilitators, I was able to come up with a highly nutritious product that is made from grain amaranth, maize and millet flour.

I didn’t realise the impact this product would have until a friend of mine who is HIV positive used the product and it helped increase her CD4 count beyond the threshold. My product also helped a severely malnourished three-year old girl, who was almost on her death bed. In just two weeks of using the product, the girl regained her health to the surprise of everyone in her family and the community.

I gained more confidence in myself and my product. I am now working on branding the product. It is called Eden Nutritional Flour. I have many customers now and I have engaged women in my village to grow more grain amaranth for selling to me. This opportunity for them has multiplied their income fivefold because the price of grain amaranth is five times the price of maize, yet grain amaranth is easier to produce.

I am now part of the Grow Next Level program and my plan is to become a big social entrepreneur in Tanzania. I have just completed an internship program at RLabs and I continue to be part of the movement to create more change agents in the community.
The story of my life: a Living Lab experience

My name is Samwel Kadeghe, I am from Iringa, from a village known as Ismani. I am from a family of seven children, and I happen to be the fifth child. I am thirty three years old and currently live at Iringa municipal in an area known as Mkimbizi. I am not married yet.

Throughout my life, I honestly never got the opportunity of advancing my educational level. I did my primary education, though I had to end in class five. From there I got the opportunity to study theology at the certificate and diploma level. I am among the people who are literally from the least privileged environment and background.

In 2012 I joined Living Labs - what mostly got my attention was to really learn more about computers. One of the workshops that I truly loved was about thinking outside the box, led by Madame Kristiina. The other workshop was about ways to solve problems in society. These two workshops had great significance as they changed my way of thinking.

Before I joined the Living Lab, I had the mentality that life was really hard and most of the things I wanted to accomplish seemed almost impossible. But after the workshops it did make me see different ways to do things in my life.

Rapid changes happened to me after I went to South Africa and learned the many things that were taught through the programs at RLabs (Cape Town). Frankly speaking, the Living Lab has played a crucial role in the following areas of my life:

- My value as a person has kept on improving every now and then, as I consistently keep working hand in hand with the Living Lab
- I have personally learned to see and believe that everything is possible. And it has had a great impact in my life, since I have been able to accomplish a number of things personally: to live a life that is well organized, a life with vision, goals, focus and priorities.

I have being able to start my own nursery school that is known as ALIGHT A CHILD ACADEMY. It is a great school that reaches out to the society. The other impact is simply based on me becoming one of the great facilitators in the entire Living Lab network, particularly in the Iringa living lab. And the more I facilitate the better I become in various areas. And well, I get to improve as a person.

Therefore, all that has positively changed in my life in one way or the other was related to the impact that TANZICT had on me through Living Labs. Frankly, I now believe if one person changes, he can change the society, and changing the world is impossible if you don’t change. I am a changed man - that I believe.

The philosophy behind the Living Labs helped me develop my own business with which I am able to share the movement’s vision with my team members

Fanuel Ansigal, Local Expert, Pamoja Labs
Reflections from Simon Flamand

In January 2015, during a network meeting, the crew came up with their seven indicators of what a Tanzanian LL should be (see Guiding Principles for a Living Lab, p. 68). This may seem like a trivial achievement until you realize that this group represents several different organizations, with completely different backgrounds and environments. Yet they managed to define the core of what they believe is the future of social innovation in the country. This totally amazed me.

Many times the team felt this was an impossible task but then there was always someone to step up and move things forward to the point where everyone was completely satisfied, wearing a grin and proud of a job well done.

TANZICT Living Lab Coordinator
LINKS BETWEEN LIVING LABS AND OTHER INNOVATION ECOSYSTEM COMPONENTS

Knowledge sharing
Define and refine African LL concepts and methodologies

**Entrepreneurs**
- Business development and leadership skills
- Visibility

**Support Partners**
- TANZICT
- RLabs Cape Town
- UNICEF
- VSO

**Universities**
- NM-AIST
- MUST
- UOI
- DIT
- Turku University

**Living Labs**
- Elimu LL
- RLabs Iringa
- Mbeya LL
- TAYI
- KCC

**Incubators**
- DTBi
- Entrepreneurship and Incubation Service Centre (Zanzibar) SIDO

**Local Communities**
- Community development agents
- Community development services
- Entrepreneurs
- Community members

**Innovation Spaces**
- Buni
- Mbeya (MUST + MLL)
- Iringa (UOI)
- Zanzibar (Reclaim + TAYI)
- KINU

**Networks**

- Funding
- Capacity building
- Partnership development support
- Organizational development support
- Program and activities development support

- Business cases

- Community inputs for potential useful research or business development
- Technical support
- Research on LLs
- Training partnerships

- Collect information regarding community needs
- Shared users
- Technology development for LLs
- Co-design of innovation spaces: content and environment
- Training partnerships
Pamoja Labs Collaboration Strategy

Peer to peer support
Collaboration on national projects
Knowledge sharing
Define and refine Tanzanian LL concepts and methodologies

Local partners
- Neema Craft
- Elimu Kwanza
- Africare
- Matumaini Centre
- Iringa Girls School

Pamoja Labs Members
- ELIMU LL
- RLabs Iringa
- Mbeya LL
- TAYI
- KCC

Business Partners
- Reach for Change
- Sengerema Telecentre
- FUNZI
- Panda Miti Kibiashara.

Government
- MCST & COSTECH
  - Institute of Adult Education
  - Zanzibar Ministry of Empowerment,
  - Social Welfare, Youth, Women and Children
  - Local Government & Authorities

- LL support government to gather community based information
- Supportive policy making
- Provide initiative to develop LLs
- Training certification
- Space & facilities
- Awareness campaigns
- Youth rehabilitation program

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UNIVERSITY COLLABORATION

One of the major goals for TANZICT was to strengthen the ICT and entrepreneurship ecosystem in Tanzania. As universities are key contributors there was keen interest from the first days of the program to explore collaboration. The original TANZICT project plan made provision for support to only one university in business incubation (University of Dar es Salaam, UDSM). It was soon evident that there was a much wider demand and interest from the universities, so the project team focused on exploring and understanding the key issues facing other universities in this field and providing support where it could.

The Government had expectations that universities would produce more innovative and entrepreneurial students, but many lecturers felt that they were not adequately equipped to do so. For this reason TANZICT’s early efforts provided tailored support to several universities through its first Associate Expert, Jukka Siltanen:

- The University of Dar es Salaam received support for coaches of the newly established ICT Incubator at the College of ICT (UDICTI).
- The State University of Zanzibar (SUZA) wanted to bring innovation and entrepreneurship into the new curriculum, so a new multidisciplinary project course was created as part of the ICT program, later approved by the university senate.
- The Nelson Mandela African Institute of Science and Technology (NM-AIST) educates post-graduate students whose main interest is research, so the university’s first large industry collaboration workshops were organized jointly. The intention was to explore how businesses and university students and staff could collaborate in research and commercialize resulting innovations.

- The most extensive collaboration in entrepreneurship and innovation was with the University of Iringa (UOI). The university had defined entrepreneurship as one of its key values, and had a Vice-Chancellor who was supportive of testing new participative teaching methods and shifting the mindsets of staff on learning, innovation and entrepreneurship. This started a very exciting collaboration with the Centre for Entrepreneurship but also with other academic staff in a series of engaging workshops. Usually such transformations take many years or even decades but the results shown within just three years have been remarkable. Today the university offers East Africa’s first Bachelor’s Program in Entrepreneurship with a completely new and practical approach; and the mindset of the university has shifted towards becoming a centre of excellence in entrepreneurship in East Africa.
Reflections from Jukka Siltanen

Successful collaboration will only happen when you find the right partners who have an intrinsic interest, motivation and passion for innovation and entrepreneurship. Innovations result from a combination of dialogue and listening to other people’s ideas, hard work, perseverance and chance. Chance because the first meeting at the University of Iringa’s Centre for Entrepreneurship was pure chance. We have also been extremely lucky to find and work with many inspiring and motivated innovators in Tanzania - the change-makers at the University of Iringa, and many equally amazing young people in the tech community in Dar es Salaam. At least part of TANZICT’s success is due to the fairly loose program description that allowed us to listen and adapt the program to what different partners wanted to do. That’s what development collaboration should be all about.

TANZICT 1st Associate Expert 2011 – 2013

These universities received some financial support for their entrepreneurship activities and were able to define for themselves what needed to be done, on condition that the plan was communicated and approved by TANZICT.

CAPACITY BUILDING

MCST and COSTECH requested training on innovation concepts for the universities under the MCST’s jurisdiction: Dar es Salaam Institute of Technology (DIT), Nelson Mandela African Institute of Science and Technology (NM-AIST) in Arusha and the Mbeya University of Technology (MUST). At a later stage this was repeated at the State University of Zanzibar (SUZA). This was offered by the TANZICT CTA, Kristiina Lähde and second Associate Expert, Iiro Kolehmainen. Different innovation concepts and case examples were presented: Living Labs, Pre-Incubation and Incubation, Innovation Spaces, Technology Transfer, Science Parks, and various entrepreneurship education models. Discussions centred on how these would fit into each university’s strategy and what would be realistic in terms of available resources. Participants worked in groups to discuss and plan possible ways forward. On request, this was followed up by further training on Technology Transfer and Pre-Incubation in February 2015 (see pp. 78 – 81).

INNOVATION SPACES AND LIVING LABS

More TANZICT funding became available during the years 2014 – 2015, some of which was allocated to expanding the number of Innovation Spaces in Tanzania (pp. 50-57). MUST, SUZA and UOI have played an important role as the three new Innovation Spaces in Mbeya, Zanzibar and Iringa are partnerships between the universities and local Living Labs. NM-AIST has also used the Living Lab methodology in its own community outreach activity, Ecolab.

TAFINN KNOWLEDGE EXCHANGE

The universities have actively taken advantage of the TaFinn knowledge exchange fund and in November 2013 a special group trip was organized for Tanzanian universities to Finland. The goal was to develop partnerships between academic institutions in the two countries, especially in areas of entrepreneurship and ICT education.
The participants - from NM-AIST, UOI, SUZA, UDSM and DIT - met with Finnish universities in three cities, as well as other organizations related to entrepreneurial education activities:

- Tampere: Tampere University of Technology, University of Tampere, TAMK Tampere University of Applied Sciences, New Factory
- Jyväskylä: JAMK Jyväskylä University of Applied Sciences, Jyväskylä University, TeamAcademy, Protomo, Technopolis Science Park
- Espoo: Aalto University, Startup Sauna, City of Espoo, FORGE Service Lab, AppCampus, EIT ICT Labs.

In addition to many new ideas and learning experiences, the trip did spark concrete collaboration between the University of Iringa and TeamAcademy, and NM-AIST and the JAMK learning technology unit. The College of Business Education (CBE) and the Institute of Finance Management (IFM) did not participate in the TaFinn group trips, but both applied for funding support for individuals who needed to travel to prepare and support their international partnerships.

**PRE-INCUBATION AND THE INNOVATION FUND**

Tanzanian universities in general, and our partners specifically, have been active in pre-incubation and incubation during the TANZICT years. Some have participated very actively in our training, others have proceeded independently or with other partners, some have created partnerships with the Buni Hub, e.g. Institute for Finance Management (IFM), UDSM and the Centre for Business Education (CBE). The activity in this area was also apparent in the Innovation Fund applications. During the first two rounds most applications came from the DTBi or KINU. By the last two rounds (2014-2015) many university-supported innovations were received, with professors or lecturers acting as mentors. This is indeed an excellent development.

**TAking the TeamAcademy Program to Africa**

TeamAcademy is a special unit of entrepreneurship at the JAMK Jyväskylä University of Applied Sciences in Finland. Since 1993 it has been running a three-and-a-half-year bachelor degree program, where students spend time running their own real-life companies together. The learning model is based on training (dialogue) sessions with all team members present, real-life projects and client relationships involving real money. Business books are read in order to reflect learning in their current projects. During this period, team companies are supported by their own coach, who follows the team’s development closely and is responsible for the team’s learning process.

The TeamAcademy model has a good track record as about 25-38% of its graduates continue as entrepreneurs immediately after graduation (in traditional education this is about 4%). Two years of graduation, almost half of the graduates are working either as micro, small or medium-sized entrepreneurs. This might be due to the very practical hands-on approach and the focus on real-life business skills that are a necessity in today’s working life. The concept has been exported to European countries such as Spain, UK, Netherlands and Hungary and more recently new programs have been started in Brazil and China, with Argentina and Australia in the pipeline.
The University of Iringa in Tanzania is now the first in Africa to apply the full program through a three-year Bachelor of Applied Marketing and Entrepreneurship (BAME) degree, officially approved by the Tanzanian Commission for Universities (TCU) on 2 July 2015. Pilot courses were introduced in 2013-2014 to gain experience on how team learning and its tools were suited to the local context in Iringa.

In October 2014, a full-time pilot program with 28 students was introduced. Selections were based on participatory team sessions, team role tests and individual interviews. The pilot program was supported by two outside junior experts who had both been studying at the TeamAcademy in Finland. This support was crucial in the first four months as they could consult the university and bring tools as well as a new type of learning culture into the initiative. Pilot teams worked with their clients and ran projects for almost a year, making reasonable turnover when compared with the results from the international network of different TeamAcademy units worldwide.

After introduction of the full-time approved curriculum, students will complete their studies in a totally different way – applying theories gained from books into practical work and projects rather than trying to memorize pieces of information for an exam. The student intake for the academic year 2015-2016 stands at 60-80 and other universities in Tanzania and the East African region are already showing interest in this new approach to learning.

Reflections from Iiro Kolehmainen

For me personally, supporting the University of Iringa (UOI) has been a big thing. It usually takes a university about 2½ years to start this kind of program; UOI did it in 1½. At the core are the young and enthusiastic team entrepreneurs. They believe they can change the world and their own lives through their own actions and dreams while making a business on the side. Their drive and energy are unbeatable. This new generation will learn and complete their studies in a totally new way. Many will most likely become entrepreneurs while others will find their professions in different organizations through the networks they are building during their studies. Regardless of where I work and live in 2017, I want to come back to Iringa to see these first teams graduate.

TANZICT 2nd Associate Expert 2013 – 2015
Government organizations and universities in Tanzania recognize the role of entrepreneurship and innovation in developing the country’s economy.

The TANZICT Technology Transfer and Pre- Incubation Program was started during the latter part of 2014 by visiting and evaluating universities’ level of knowledge on these topics. The assessment included the following Tanzanian institutions:

• State University of Zanzibar (SUZA)
• University of Dar es Salaam (UDSM)
• Nelson Mandela African Institute of Science and Technology (NM-AISM)
• Dar es Salaam Institute of Technology (DIT)
• University of Iringa (UOI)
• University of Bagamoyo (UB)
• Mbeya University of Science and Technology (MUST).

The outcome was that, although the institutions were committed to launching entrepreneurship and innovation activities and processes, there were no operational policies in place and existing models and practices were weak. To address this need, a training program was initiated in February 2015 and offered by Finnish experts Marko Sorri (Venture Development Finland Ltd) and Tuomas Maisala (Spinno Enterprise Center, Finland).

Participants for the program had to apply and successful candidates were selected from a diverse range of institutions – College for Business
Education (CBE), DIT, MUST, NM-AIST, SUZA, UB, SIDO and the Buni Hub. A one-day training workshop was also offered to high-level government officials from the Ministry of Communication, Science and Technology (MCST), Small Industries Development Organization (SIDO), Tanzania Chamber of Commerce, Industry and Agriculture (TCCIA), Confederation of Tanzania Industries (CTI), Tanzania Private Sector Foundation (TPSF), Business Registrations and Licensing Agency (BRELA), Dar Teknohama Business Incubator (DTBi) and the Commission for Science and Technology (COSTECH).

Two training modules were offered:

- **Module 1 (3 days)** dealt with the pre-incubation process; deal-flow activities; business idea testing; business plan development; fundraising; technology transfer and commercialization; the challenges of coaching idea owners; and the business development advisor’s role, knowledge and skills.

This was followed by a three-month period during which participants were required to complete seven tasks with colleagues in their own institutions. These ranged from gathering innovation cases on given templates; preparation of a deal-flow activation plan; market research; formulating service offerings; drafting a code of conduct and practical service rules; creating an innovation database and completing a feasibility study for pre-incubation and technology transfer.

The homework was challenging but almost all organizations were able to deliver on the required tasks before the second training module commenced in May 2015.

- **Module 2 (4 days)** consisted of four themes: how to establish and manage an incubator; business planning; technology transfer; and funding. These themes were chosen based on the feedback received after the first training module and delivery of the homework assignments. All participating organizations were required to present their findings and colleagues were given an opportunity to provide feedback. Thirty university development managers, incubator managers and government officials participated from UB, CBE, MUST, NM-AIST, SUZA, SIDO and UOI.

### Outcomes and Achievements

Besides gathering innovation cases, developing tools and processes to improve services to business owners, and creating innovation policies for the universities, perhaps the most important achievement was that university colleagues decided to create a network for collaboration. First agreed-upon tasks were the creation of a group Facebook page, an incubator manual that could be commercialized, and an open portal where Tanzanian students and incubators could publish their innovative ideas so as to network idea owners with prospective venture capitalists.
I am a lecturer at the NM-AIST and have an interest in working on Science, Technology and Innovation (STI) studies. My institution has entrusted me with the opportunity to be part of the team establishing a Business Incubation Program. Much has been done – we have organized a joint business plan competition with Washington State University (USA) and delivered innovation and entrepreneurship courses to various stakeholders. However, the basics on how to run an incubation program, and tools that could facilitate their operationalisation, have been lacking.

The Pre-incubation and Technology Transfer course, with its hands-on training and methodology, has helped my colleague, Dr Ahmad Kipacha, and I to work in a more organized way by using the business idea collection template, the database sheet for all the innovation cases, and setting up deal flow activation. We even went so far as to establish a code of conduct for the NM-AIST incubation staff.

Since the course participants were drawn from universities and other organizations such as SIDO who have gone far in their business incubation program, we have been able to create a strong network that will ensure that we are well connected with our fellow colleagues from other institutions.

I would like to quote Marko Sorri, one of the instructors, who said “We need to help the fishermen in our society to start selling their catches even before they reach the shore”. This is a great inspiration to my work, my institution and the whole nation; to see to it that one day, the ambitious youths in academia and the entrepreneurs in our society are rewarded by their innovations through commercialization and business establishments. This leads the way towards contributing to the NM-AIST motto, Academia for Society and Industry.

Nelson Mandela African Institution of Science and Technology (NM-AIST), Arusha
Reflections from Rose Funja

My participation in the two workshops made me understand the concept of incubation better, and the process and services that can be offered at each stage of growth. I realised how broad a concept it is and that it called for partnerships with several players in the technology and business sector as well as government.

This training has guided me to formulate a proposal that I shall put forward to our University Council at the University of Bagamoyo – the university has always supported leadership and entrepreneurship. The intention is to implement the same principles in a more practical way during the pre-incubation and incubation phases for the innovative ideas that our students work on during their studies. I believe that it will make a huge difference in the learning process and engagement of students, allowing for community problems to be solved in an innovative way.

Director of ICT and Research,
University of Bagamoyo

Reflections from Teemu Seppälä

When running the training for Tanzanian universities and SIDO I felt that participants had many other duties and obligations. After the last session, I received an email that same night telling me that the participants had a meeting after the training and had decided to start their own nation-wide network so that private and public universities could collaborate on their commonly shared mission.

Moments like these make my day, when you see that people realize that their future is in their own hands and that they can make it happen together because that’s the only way to make an impact.

The most important thing is that you are answering a real-life need, and that people want to use your product. Bring a big dream together with a small solution.

WOMEN & GIRLS IN TANZICT

During the TANZICT inception phase in 2011 and early 2012, it became apparent that few women were participating in activities and events, not an unusual situation in technology environments worldwide and Tanzania was no exception. For cultural reasons women felt anxious in a male-dominated environment and were not comfortable expressing their opinions or asking questions in front of a male audience. After the Innovation Space (later Buni Hub) activities commenced in March 2012, the time was ripe to introduce specific women-focused activities to see whether this would increase the levels of participation. Initially these activities took the form of a series of events in the Innovation Space. Later, in 2013, TANZICT introduced a longer women-only entrepreneurship training program, FEMTECH, with a second phase in 2015. The second round was requested by SIDO, the Tanzanian Small industries Development Organization, so that their women trainers could be accredited to offer FEMTECH training in Tanzania.

- 10 accredited FEMTECH trainers (9 female: 1 male)
- 1 female Master Trainer who can in future train new Tanzanian trainers
- Training successfully completed by 50 women entrepreneurs & 7 SIDO incubation managers

GIRLS’ NIGHT OUT & BUNI DIVAZ

Girls’ Night Out was a series of events for girls that was offered in the early days of the Innovation Space at COSTECH. The idea was to test whether more women would participate if they knew it was for women only. The concept proved to be a resounding success and has with time evolved into Buni Divaz, a female community within the Buni Hub.

Some examples of events include:

Mobile Monday on Social Media. Female guest speakers shared their social media and blogging experiences with other women.

Bring your Bibi (‘grandmother’). Younger and older women were paired up to ensure that women of all ages could fully utilize their mobile phones for basic functions such as using a recharge voucher; how to read, reply, delete and send messages; creating and using contact lists; setting up reminders, and how to use the alarm clock.

After the Buni Hub managers, Brian Paul and Jumanne Mtambalike, started work in February 2013, the community within the space became more organized. Female community members started the Buni Ladies Community (BLC), which was revamped and rebranded to Buni Divaz (BD) in 2015. It aims to attract, encourage and recruit more girls and young women from secondary schools and universities to embrace and explore the potential that lies within ICTs and entrepreneurship. The intention is to provide professional networking opportunities and to offer customized mentoring, training workshops and events.
TRAINING FOR WOMEN AND GIRLS

A number of ICT training events were supported through TANZICT:

**Joomla training.** Apps and Girls, a project started by three young Tanzanian girls, provided training on website development and how to apply and customize Joomla templates and modules.

**Apps for Women by Women.** RLabs South Africa offered a hands-on training workshop on how to use mobile applications for addressing challenges faced by women.

**Apps and Girls.** Tigo and Reach for Change, together with TANZICT, funded a one-day training workshop for more than 80 secondary school girls at the Buni Hub. The session introduced them to basic coding and motivated them to develop interests in ICT. Volunteers from the local Apps and Girls initiative facilitated the session.

**Rails Girls.** TANZICT collaborated with KINU, a co-creation space in Dar es Salaam, to present a Rails Girls workshop. Rails Girls was started in Finland and is a worldwide volunteer network of young women and girls encouraging each other to make technology more approachable. Two Finnish volunteers offered basic training in HTML and young Tanzanian women were given the opportunity to design their own websites.

**Ladies in ICT Hookup.** Why-Not Women, an international NGO that supports women in growing social entrepreneurship ventures, collaborated with Apps and Girls in organizing a meet-up session on how to change parents’ attitudes towards ICT courses for girls.

**Futures workshop.** Super Sisters Finland, a global network that inspires women to pursue their passion with an entrepreneurial mindset, creativity and technology, offered a workshop where women could discuss their future ideas and dreams. Women were also given a chance to explore possible challenges during the journey and to discuss topics such as the fear of failure and learning from one’s mistakes.
**SUPPORT FOR WOMEN ENTREPRENEURS IN TANZANIA**

During the period 2013 to 2015 TANZICT provided funding for the implementation of a training program aimed specifically at supporting women entrepreneurs in Tanzania. The program was implemented in two phases, FEMTANZ (2012-2013) and FEMTECH TANZANIA (2015), the latter on request from SIDO. Both were offered in Dar es Salaam, but in the second phase entrepreneurs were chosen from regions throughout the country (Arusha, Morogoro, Pwani, Mbeya, Singida, Tanga, Shinyanga, Kigoma, Kilimanjaro, Mara, Kagera and Dar es Salaam). They were accompanied by SIDO incubation managers from their regions so that both the women and the managers could benefit from joint training.

FEMTECH has developed a comprehensive train-the-trainer program that underpins the entrepreneurship training component. This is also an important contributor to building local capacity by ensuring that local trainers can carry forward future training efforts in their countries.

The FEMTECH program (www.femtech.co.za), founded by two South-African based entrepreneurs Tina James and Jill Sawers, focuses on training women to grow their existing early stage businesses substantially by introducing women to innovative ways of improving their product and service offerings. This includes the use of ICTs. The approach is practical and based on experiential learning, with the inclusion of creativity exercises to stimulate new ways of thinking. Peer-to-peer knowledge sharing forms a key component. The program is modular and constructed in such a way that programs can be customized according to the needs of the participating women. There is a strong emphasis on understanding markets, management of cashflow, marketing, use of ICTs as tools, and creative thinking to innovate products and services.

Potential candidates are selected on the basis of i) having a registered business, ii) the future growth potential of the business, iii) willingness to learn and iv) businesses where technology could make a difference. The types of businesses have varied considerably – from the traditional catering and arts and crafts, to food production e.g. baobab flour, coffee and tea production, gemstone production, website development, communications and social media, manufacture of cleaning materials, health products, clothing and fashion design.

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**GIRLS IN ICT DAYS**

Tanzania has joined many countries worldwide in celebrating the annual International Girls in ICT Day, an idea first introduced by the International Telecommunication Union (ITU). Girls from secondary schools and universities are given the opportunity to spend the day at the offices of ICT companies, government agencies and academic institutions so they can better understand the opportunities the ICT sector offers as a future career option. The first Girls in ICT day in 2013 was organized by the Computing and Information Association (CIA), KINU, Telecommunication Regulatory Authority (TCRA), UNESCO and COSTECH, with support from a number of funders including TANZICT. Organised as a two-day event, the first day saw 48 girls visiting local ICT companies after which they worked on presentations for the second day’s conference. More than 160 girls attended the day of presentations, discussion groups and interactions with eight motivational speakers. Girls were given the chance to interact with many of these women to learn more about the options open to them. Hundreds of girls from local schools and universities have participated in this annual event since that time.
Women face many unique challenges in running their own businesses, over and above the typical lack of business skills – work-life balance and conflicting roles as entrepreneur and family caregiver, and the societal norms of what women may and may not do. These are often in conflict with the demands placed on them to build a successful business. For this reason the FEMTECH program devotes a significant amount of time to learning through self-actualization and self-reflection. This gives women a better understanding of themselves, their situations and how they can work on challenges relating to their businesses and their personal lives. Participant feedback consistently reflected that FEMTECH was very different from other training courses because it was so practical. Participants indicated that they were able to look at specific issues that could, and did, improve their businesses. Comments from women entrepreneurs (and trainers who also run businesses) reflect these changes:

- **Rose Romanus** provided her staff with job descriptions and found that this improved efficiencies in her business.
- **Zainab Rashid** had never considered her competitors’ unique selling proposition but realised that to compete favourably she needed to look at what her competitors were doing.
- **Betty Rweabura** is now using ICT tools to market her business and has been able to reach customers in six regions through the use of social media. Using her mobile phone she has sold more than she ever had previously. She now keep daily sales records. She has joined two professional networks, Women Business Coaching and a Business Network, where she is getting new tips on how others are running their businesses.
- **Gladness Foya** has gained the confidence to test her new business idea to provide an enrichment / childcare centre in her town. As an accredited FEMTECH trainer, she believes that she now offers a more professional service.
- **Hyasintha Ntuyeko** qualified as a telecoms engineer but started her business in feminine hygiene products, Kasole Secrets, after leaving university. On completing the FEMTECH training in 2013, she had registered her business, was expanding such that her product is now on sale in local supermarkets, has a sales team to do her marketing and selling, and is aiming to set up her own factory for bamboo, chemical-free sanitary products. She has also launched awareness campaigns for young girls. She was awarded the prestigious Mandela Washington Fellowship for Young African Leaders in 2015.

Reflections from Beata Minga

What I see as an achievement is the way trainers have appreciated and changed their attitudes towards developing training programs in their regions. Before, trainers conducted training without putting emphasis on practical work, on what really happens in the business environment. Now they have started designing hands-on training that is more active and with more participant involvement. In future training, assignments will be a way of assessing the evidence base for business improvements. We, SIDO, have also mainstreamed the training content and methodology into our training workshops with the assistance of lead trainers. Incubation awareness in assisting women SMEs has also increased. SIDO is translating the FEMTECH manual into Swahili, which will increase the accessibility for more women entrepreneurs.

Training Manager, SIDO

Tanzania has also benefited from the sharing of African knowledge and experiences through the involvement of Tanzanian, Mozambican and South African trainers and the fact that the program has been implemented in other African countries (South Africa, Namibia and Mozambique). Future collaboration between Tanzania and other countries where FEMTECH has been implemented will serve to strengthen networks. Further opportunities exist to use multi-country African teams of trainers to stimulate cross-cultural learning and cross-border networking.
The TaFinn Knowledge Exchange Fund was definitely one of the most well-liked elements of TANZICT. The fund was earmarked for travel, either for capacity building or networking purposes.

Most travel was in the form of group trips to Finland, with the TANZICT project office taking responsibility for organising the agenda and the travel arrangements. Some group trips were also arranged to other African countries, for example, both the Living Labs and our Tanzanian innovation space partners visited South Africa to learn and benchmark from similar activities there. Small groups also attended events such as the SAFIPA program end conference in South Africa, IST Africa conference in Mauritius, AITEC event in Kenya and the Global Forum organised by the World Bank and Nokia in South Africa.

Government TaFinn visits

Our government partners appreciated the possibility of learning from the Finnish system. Three trips were funded: the first focused on the Finnish innovation system; another concentrated on the information society and education theme; the third looked at foresight and futures thinking and how these are used in planning processes in the Finnish government and other organizations.

Participants came from numerous government institutions: the Ministries of Communication, Science and Technology (MCST), Trade and Industry, and Education and Vocational Training (MoEVt); Tanzania Institute of Education; Prime Minister’s Office Regional and Local Government (PMO-RALG); Planning Commission of Zanzibar; Uongozi Institute; President’s Office Planning Commission (POPC); Tanzania Commission for Science and Technology (COSTECH); and the Rukwa regional government.

Perhaps one of the biggest eye-openers I experienced was to observe the Finnish education system - quite different from the approach in many African countries where the focus is on the wholesale provision of hardware and the distribution of laptops to learners. The Finnish approach, instead, emphasizes pedagogics and uses ICT as an aide to be applied sparingly but very effectively.

Arnold Masaro, TANZICT National Project Coordinator
Universities

A tailored group trip was organized to create networks and collaboration between Finnish and Tanzanian universities. Several follow-up individual trips were also supported to strengthen the collaboration.

Another trip focused on entrepreneurship, with most of the participants drawn from universities and a few from hubs such as Buni and KINU.

The most important outcome from these exchanges was the establishment of the TeamAcademy program at the University of Iringa.
Entrepreneurs

Entrepreneurs and hubs were invited to the SLUSH 2014 event in Finland, the Global Forum and AITEC East Africa. A second visit to SLUSH 2015 is being planned at the time of writing this book.

Living Labs

Living Labs have been supported to visit RLabs in South Africa. Funding was used to bring trainers to Tanzania, but a small travel fund was also established for the Living Labs to visit each other, and train and learn from each other. This has been one of the most impactful ways to support local innovation and is perhaps a good reminder for all programs that facilitating travel within a country can be just as useful as learning trips abroad.

There was a sense that the mission was never to superimpose the Finnish ecosystem on Tanzania but rather to share knowledge, expertise, and experiences with Tanzanians working in the space, allowing us to experiment and tinker with what works in the local context. There was never a sense of being on the receiving end of expert opinion. The TANZICT team truly were co-conspirators in trying to achieve what at the outset might have seemed like a crazy idea.

Johnpaul Barretto, KINU
Learning through first-hand seeing and experiencing

Trip participants were asked to write trip reports and reflect on what they had gained out of their travel. One major benefit reported by participants was the discussions and learning that happened within the group. The government officials in particular spent much time at the end of each day’s official program reflecting and discussing what they had learned, and how that could be used to improve Tanzania.

Seeing in practice how things work and not just hearing about it was one of the to-be-expected positive outcomes. For example, the university participants were able to talk to the Finnish TeamAcademy students - that helped them to see the benefits of the program.

Many things can happen through email and Skype, and information about nearly anything is available on the internet. Nevertheless, face-to-face contact builds real relationships and real understanding. TaFinn helped TANZICT to achieve that.
THE INNOVATION FUND

Why an Innovation Fund?

In August 2011, when TANZICT commenced its program in Tanzania, very little start-up funding was available. At the time, the Innovation Fund was a new type of instrument, introduced to support emerging entrepreneurs and to stimulate the development of innovative ICT and technology products and services.

The original budget allocation was €600,000 but because of delays and time-lags in implementation, only €225,000 was finally awarded; the remaining funds were re-allocated to other activities within the TANZICT program.

Since 2011 many other challenge funds have appeared and disappeared. One such instrument is DFID’s Human Development Innovation Fund (HDIF), offered in partnership with COSTECH. Multiple hackathons and pitch competitions, with monetary prizes at various levels, have been instituted. However, there are signs of ‘hackathon fatigue’ in the community, and the lack of long-term commitment continues to be a challenge.

A start-up grant fund for potentially innovative ICT products and services in Tanzania

Initial focus was on ICT for development, later expanded to include other technology and social innovations

Four calls for proposals from December 2012 – May 2015
280 applications – 34 successful awards

Innovation Fund Grantees

Bongo Live
Omnigrid
Mobile Parliament
Non-dairy probiotic drink
Energy saving stoves
Fertiliser from compost
Xcommodity
MoView
Mushroom incubator
Zalego
Mobile Lab
Ourcries
Fake identifier
MoParliament
Mobile Parliament
TIME-system
Tango TV
Tango TV
StockPoint
On-line Booking
Pellet machine
MoShip
Mparliament
Event App
Tango TV
Mobile Donation system
Non-dairy probiotic drink
Land Ownership Documentation System
Green Rock Drill
Xcommodity
Barua SMS Notification
Africa Safari
Go Join
3D printer educational project
Fake identifier
Arlzy Document Management System
Fake identifier
Implementing the Innovation Fund

The Innovation Fund was made available through open calls advertised on social media and through TANZICT partner networks. From small beginnings in 2012 when only 25 applications were received, the final call in May 2015 elicited 138 responses. The application process was kept as simple as possible so that the ability to write proposals would not be a limiting factor for entrepreneurs. This also simplified the portfolio management and associated work load for what are essentially small grants.

The CTA office took responsibility for shortlisting applications in the first rounds but at a later stage the NPC and COSTECH were also pulled into the process. Shortlisted applicants were invited for an interview, with funding decisions made within a day of the interviews.

Applicants were requested to link themselves to a mentoring organization such as the DTBi incubator, the KINU technology hub, or a university. Contracts were signed by both the entrepreneur and the mentor, and there was joint responsibility in ensuring that the grants were used as agreed and that results were reported. This was required as neither TANZICT nor COSTECH had the necessary manpower to engage with every grantee in an effective manner.

As COSTECH managed the fund, the money was disbursed through a specific COSTECH account, with the Director General of COSTECH and the TANZICT CTA as co-signees. Contracts were created by the COSTECH legal department, but signed by both COSTECH and TANZICT.
Challenges

The concept of innovation proved to be a challenge as many applications were in essence repeating what already existed. The selection process also had to consider the danger of distorting competition – if TANZICT awarded a grant unknowingly to a product or service that a competitor was bringing to market without external help, there could have been the risk of doing more harm than good to the market.

There is also the possibility that donor-funded grants may slow the development of local angel investors and other local funding mechanisms.

The timing of the Innovation Fund proved to be another challenge. Delays in the recruitment of the National Project Coordinator and the Financial Administration Manager had a spillover effect, with the first call taking place only in December 2012, eighteen months after TANZICT was officially launched.

Delays in disbursement of the grants meant that grantees only received their money about six months after they had been awarded the grants. This slowed down their processes and caused some damage to TANZICT’s image and credibility.

Following the 2013 TANZICT Mid-Term Review and Audit, there were further delays while resulting recommendations and necessary changes in the financial processes were implemented. The second call in May 2014 could therefore only take place after TANZICT had been operational for almost three years. On a positive note, two further calls took place during the period October 2014 to May 2015.

The level of commitment of entrepreneurs continues to be the most critical factor in determining the success or failure of a business. Full-time entrepreneurs do tend to progress faster with their businesses than those who are merely experimenting and the latter do tend to give up more quickly on developing their ideas.

A Success Story

Overall the Innovation Fund has been a fairly successful pilot and much was learnt about how to manage a fund from the many encountered challenges and difficulties.

All grants were allocated as planned, and even though not all entrepreneurs were successful most have continued with other ventures. This can only point to the usefulness of the experience and the value of the learning that was gained.

Prinpo sells affordable 3D educational tools to schools. It has built a 3D printer from e-waste so that products can be printed locally. By producing visual teaching tools for the natural sciences, they aim to enhance learning in Tanzanian schools.
BONGO LIVE DEVELOPS AN SMS GATEWAY

A grant was awarded to Bongo Live Enterprise Ltd (bongolive.co.tz) for the design and development of an advanced SMS gateway capable of aggregating multiple mobile operators and customers. This gateway has subsequently allowed the business to expand significantly by allowing Bongo Live to handle larger volumes of SMS traffic as well as to interconnect directly with mobile networks.

Established in May 2010, Bongo Live is a Tanzanian owned mobile technology company based in Dar es Salaam, Tanzania. It is a licensed National Application Services provider with the Tanzania Communications Regulatory Authority (TCRA). Bongo Live has been able to establish relationships with three mobile networks in Tanzania and is now seeking to expand by interconnecting with regional operators and other aggregators in East Africa.

MODESTA JOSEPH

15-year-old Modesta Joseph was awarded a grant for her idea to create a website, Our Cries (http://ourcries.com) where students can report harassment incidents they experience on school buses.
TIME TICKETS – TANZANIAN TICKETING MADE EASY

TIMETickets Company Limited received a grant in 2014 to take their business idea from prototype to startup. Launched in January 2015, the product provides an easy, convenient, time-saving and safe ticketing experience. By July 2015 the company had 1000+ users, sold 800+ tickets, and had a growing base of paid events.

It runs on a state-of-the-art platform using a converged mobile-web ticketing application that offers an end-to-end convenient selling and buying solution using mobile money payment options.

The company was co-founded by local entrepreneurs Josepah Mandara, Mwasapi Kihongosi and Godluck Akyoo in March 2014.

www.timetickets.co.tz or www.timetickets.net

TANGO TV - ON-DEMAND MEDIA STREAMING

Tango TV is a Tanzanian technology company focusing on integrated media streaming services, particularly African films, music videos and TV shows. It has developed customized media streaming TV set-top boxes that enable media distribution through various internet connected devices and television sets.

They used their TANZICT grant to move from concept design to a fully working product ready for market. Currently the business is entering the beta testing phase and limited orders have been accepted from customers who will serve as beta-testers. Content agreements are in place with Ubongo Kids for children’s content and the Tanzania Film Federation.

Website: http://www.tangotv.co.tz/
Facebook: https://www.facebook.com/tangotvtz
Twitter: https://twitter.com/tangotv_tz
Taking the Innovation Fund Forward

A number of useful ideas were received over the years on how the management of innovation funds could be improved:

- The size of the grants (on average about €8700) was seen as an appropriate sum for a start-up company. However, smaller grants with a less onerous application process would have helped student teams to pilot ideas and learn from the process.

- Two calls per year would have been the ideal setup as the process, from opening of the calls to disbursement of funding, always took a few months.

- The awarding of grants has received mixed reactions. On the one hand it has eased the risk associated with new innovations; on the other, concerns were raised by outside stakeholders that grants could be seen as ‘risk-free’ money that might promote irresponsible behavior. Although this was not the case with the TANZICT awards, others felt that grant money might be used for other purposes or for not taking the business seriously.

- Some partners would have preferred a revolving fund with loans instead of grants, or possibly a combination of ‘soft’ loans and grants. They felt that this would be more sustainable as some of the money would be made available for new loans after it had been paid back.

- Repayment of a portion of the grant might also result in more cautious risk-taking by entrepreneurs.

- Some community members felt the fund should have been advertised more widely. This should be taken into consideration in the future. That would mean a dedicated advertising budget but also more resources to handle the increased numbers of applications.

- Ideally, there should be a working network of different institutions that jointly raise the needed funding for supporting innovation. Representatives from each participating institution could then be assigned a seat on the selection committee. Selection committees could also be improved by including more serial entrepreneurs and representatives from the mentor organizations. Mentors are an important part of the selection process, as is their involvement in the actual work and follow-up on projects.

- With hindsight, the roles and responsibilities of grantees, mentors, COSTECH and TANZICT should be re-defined and clarified so that expectations are clearly understood between mentors and mentees.

In conclusion, it is too early to judge success or failure of the Innovation Fund. It succeeded in that all the funded projects were completed and most have completed the required reporting or are in the process of doing so. Some failed as ventures, but much was learned and some have already moved onto new projects and ventures.
FUTURE OPPORTUNITIES
FUTURE OPPORTUNITIES

TANZICT has catalysed change in the Tanzanian innovation ecosystem, not on its own but with a number of other international and local stakeholders.

All this has opened up new possibilities for the future. The TANZICT team asked some of its stakeholders what they thought should happen next and where new opportunities could be found for taking forward Tanzania’s early steps in innovation. The outcomes are presented in this closing chapter - in themselves they represent new beginnings and the starting blocks for further change.

Entrepreneurship in education

There has been a significant mindshift regarding the role of universities in Tanzania. Increasingly they see themselves preparing students for a working life and as future job-creators, for themselves and others. This reflects a move away from earlier times when a university graduate could expect to be employed almost automatically and often by government. The current reality is that many young graduates are not employed or even regarded as employable by companies. A large number require significant additional training to become useful in a corporate environment. Not everyone can or should become an entrepreneur but equipping students with entrepreneurial skills could add to their employability.

Some of the coach training has already been carried out by TANZICT with participation from a number of universities. This skills base should be sufficient to provide a springboard for further replication.

The TeamAcademy approach presents a wonderful opportunity for Tanzanian universities, but they will have to resist the temptation to dilute the concept by doing it ‘almost but not quite’. Coaches must be trained and there will have to be a move away from traditional teaching methods - the approach cannot be lecture-based and exam-driven.

Initially the programs will be resource-intensive and coaches will need enough time to dedicate to the program. This implies that they will not have much time available for lecturing other students. This will require an even larger mindshift in universities, but it can be done.

“Action without vision is a nightmare while vision with action can change the world.”

Sarah Peter, Elimu Living Lab
Reflections from Simon Flamand

I paid a surprise visit to the Elimu Living Lab in Sengerema. Nobody expected me there, it was simply a catch-up visit. By pure chance, I met with two young professionals who were visiting the Living Lab to discuss possible collaboration opportunities in Mwanza. A long discussion followed the usual greetings - only when I left did I realize that these people, out of nowhere, had heard of the Labs. More than that, they had similar ideas and were looking to be part of the movement. It is something they believe in, not something they had been taught or told about. This network is growing - it is organic and that makes me smile.

TANZICT Living Lab Coordinator

Grassroots innovation and entrepreneurship

The successful implementation of Living Labs in several locations throughout Tanzania has proved that innovation is not only the realm of the educated. The initiative and drive shown by communities has created much interest, and as a result Living Labs have been integrated into the MCST’s future plans. The use of existing Living Lab champions as trainers for new Living Labs is now seen as an effective practice. However, it must be remembered that Living Labs cannot be managed as a top-down intervention but must be driven by the needs of the local community and led by local champions from the community.

Community-driven innovation by its very definition must remain community driven - it cannot be controlled or directed centrally. The government can support and catalyse the development of new Living Labs, with support from existing Living Labs, but the temptation to direct them should be resisted.

Promoting innovation through Foresight

Since September 2014, a Foresight process has been underway under the leadership of the Tanzania Commission for Science and Technology (COSTECH), the primary advisor to the government of Tanzania on Science, Technology and Innovation (STI). Foresight is seen as a beneficial approach to integrate STI into planning for development. It presents a pragmatic, futuristic approach to availing evidence and vision into planning and evaluation processes.

In partnership with planning think tanks from both the mainland and Isles of Tanzania and other national STI-related organizations, COSTECH is championing capacity building for Foresight in the country. The capacity building thus far has focussed on three aspects: 1) learning first hand from countries such as Finland where Foresight has been transformational; 2) simulated exercises in Foresight and 3) training of trainers. The goal of the activity is that Foresight methodologies will in future be included as part of the planning process for all levels of government. Taking a wider range of participants through a Foresight process is likely to result in mindshifts with many new perspectives and opportunities for innovation.

It is envisioned that Foresight will form a core component of planning and evaluation to ensure Tanzania is able to consider and assess different futures by taking a systemic approach when planning.

Dr Flora Ismail Tibazarwa,
Director of Life Science, COSTECH
Implementing the National ICT Policy and beyond

The National ICT Policy (NICTP 2015) provides a long-term outlook on how ICTs should be deployed in the country and will act as a beacon to guide the formulation of new legislation and the setting of regulations for the ICT sector. The proposed Implementation Strategy will provide an actionable score sheet to guide implementation of the ICT Policy, a process that is expected to last several years and require substantive financing. During this period the ICT scenario may change significantly, requiring further changes in the strategy itself. The strategy therefore offers a medium-term outlook.

TANZICT will support the execution of the strategy through a list of identified quick-start but high-impact activities that can still be achieved within the funding and time available to the project. One such activity is a study to identify the impediments preventing the manufacture of ICT products in Tanzania. The study stems from the NICTP 2015 focus on local content and will guide government departments in setting a more conducive environment for local ICT manufacture.

At a fiscal planning level, the Implementation Strategy will be embodied in the various annual plans of the Ministries responsible for realization of the different aspects of the National ICT Policy.

Establishing an ICT Agency in Tanzania

TANZICT has supported capacity building in MCST through staff training and the deployment of ICT systems aimed at improving the operations of the Ministry. However, the rate of transfer of MCST officials to other Ministries has been high, which has to some extent negated the original intention of training staff to benefit MCST. The Ministry also does not have full liberty in deciding what ICT systems can be deployed to improve its operations - these decisions rest with other parties.

The idea has been discussed for the establishment of a semi-autonomous agency that reports to the Ministry but has the operational flexibility that Ministries do not. Such an agency will have better agility to respond to the dynamic nature of the ICT sector. The Cabinet of Ministers has already directed that such an agency be created and MCST is in the process of preparing the necessary legislation for it to be established by an act of parliament. TANZICT is supporting MCST in this particular effort by organizing opportunities for the sharing of knowledge and experiences with other governments who have established similar agencies.

Creating a supportive entrepreneurial culture

A more balanced approach is needed by the Tanzanian government and Tanzanian society towards business and entrepreneurship. The present climate reflects ambivalence and inconsistency between the stated goals and objectives of achieving national economic growth and the reality of doing business in the country. On the one hand, entrepreneurship is seen as vitally important for creating jobs and economic growth; on the other attitudes towards business are bureaucratic, restrictive and often perceived as punitive. The regulatory and legislative environment will need to be brought in line with stated goals so that businesses are supported rather than hindered in growing the economy.
Entrepreneurship needs to be supported through organizations such as SIDO and others, and they need to receive adequate resources from the government. However, clear goals and measurable indicators need to be put in place to ensure that they are really adding value and creating competitive companies.

Different types of businesses require different levels of support and separate mechanisms are needed to address their very different needs:

- Small family businesses and those in self-employment are important but do not usually show growth. They seldom move beyond providing a livelihood for one person or one family. Starting these types of businesses should be easy, with simple regulations and few formalities. They do not require much support.

- The manufacturing sector and small industries can create employment opportunities, including for those with low levels of education. To grow, these businesses need support in the form of, for example, investment loans to buy machinery and knowledge support in packaging, branding, marketing, sales and international business.

- The third group, technology-based growth companies, are high risk but potentially bring high rewards for the country as well as for the entrepreneurs who start them. These companies need a very different type of support system with rapid linkages into international networks.

Rethinking is needed on how individuals can be supported in their entrepreneurial endeavours. Although not experienced first-hand by TANZICT, other incubators and universities who work with young entrepreneurs have expressed concern that the present system of awarding grants is counterproductive. Their view is that some grantees have seen these as ‘free money’, with little accountability for achieving results. Grants may also distort competition by favouring one company over another potential competitor in the market.

Possible innovative funding tools for companies could include revolving funds, ways of earning start-up funding instead of winning it, pay-it-forward schemes, crowdfunding, or other creative options not as yet defined.
Reflections from Johnpaul Barretto

For stakeholders within the Tanzanian start-up ecosystem the opportunities for knowledge transfer could potentially have a huge impact. As a co-founder of an innovation space in Dar es Salaam that aims to grow and accelerate Tanzanian start-ups, I would urge careful consideration when engaging ‘aid for trade’, or as I prefer to call them ‘traid’, funding mechanisms. With the vast differences in the health of the startup ecosystems in Finland as compared to Tanzania, importing Finnish start-ups into Tanzania could negatively impact the growth of home-grown initiatives. As such the litmus test focuses on two points:

1) Partner selection is extremely important. To hit the often elusive win-win point, Tanzanian organizations and startups need to engage with appropriate partners that complement the work that they are already doing. Only chasing Euros will have a negative impact on the future of the local ecosystem.

2) Imported technology needs to be open and hackable. There is no need to rebuild the wheel in each ecosystem. If there is a Finnish start-up with the right tool for the job then kick the service provision into high gear, and ensure that there is a way for Tanzanian start-ups to connect to the technology and build complementary services and products.

KINU

A group of stakeholders from KINU, an innovation and co-creation space in Dar es Salaam, brainstormed on ways to re-imagine a different future for innovation and entrepreneurship in Tanzania. Their re-imaginings on improving the enabling environment for businesses are:

- Increased investment in:
  - Systems infrastructure to run basic services such as business registrations
  - Business support institutions
  - Innovation spaces throughout Tanzania
  - Capital and human resources
  - Community innovation, improved education on innovation and entrepreneurial leadership, particularly for the youth
- Improved legislation to support small businesses, including the protection of intellectual property and protection of local business investments
- Tax incentives for businesses such as reductions during the startup phase of businesses and tax exemptions on import/export taxes
- Improved trade agreements and ease of travel between African Countries; consider adoption of the EAC policies
- Improved visibility and awareness of ecosystem initiatives
- Improved connectivity throughout the country, including free Wi-Fi.
Growing an innovation culture - it’s all about attitude

It has been exciting to witness the rise of the Tanzanian innovation environment and how the ways of working are changing. Having worked with many different stakeholders - government, universities, Living Labs, inventors, entrepreneurs and other key actors - some key characteristics have emerged that separate out the winners of the future from the losers.

- Be passionate and love what you are doing from the bottom of your heart.
- Focus on what you are offering but combine this with an ability to be agile and a willingness to change your concept if this is what your audience wants.
- Listen carefully to those around you - your clients, citizens and key stakeholders - and use that continuous dialogue as fuel for development.
- Work with many different organizations and people. Understand that different talents and perspectives are needed to achieve innovation.
- Nurture difference and celebrate out-of-the-box thinking. The most advanced innovation ecosystems are tolerant and open. Highlight the importance of these values and create a society with Innovation Attitude - everywhere and at all levels of society. This is particularly important for a country taking its first steps towards creating an innovation environment.


Bigger steps, larger leaps – taking innovation forward in Tanzania

The TANZICT program has been successful in supporting innovation by Tanzanians in Tanzania. It has highlighted what young and bright people can do in a growing market if they are empowered as entrepreneurs and innovators. Companies growing in Tanzania not only have the Tanzanian market at their fingertips, but also the wider East African Community and a rapidly developing global south.

Finland is committed to continuing to support this development and in particular to empowering Tanzanians to take the driver’s seat in private sector innovation. A lot of challenges however still remain in terms of the enabling business environment, infrastructure and access to finance and markets. Finland can amongst other things help with methodologies to support the emergence and growth of growth-oriented innovative enterprises, access to global knowledge and market networks and access to capital. Finnish companies that partner with Tanzanian ones also benefit themselves.

I strongly believe TANZICT is only the first step in a lasting innovation partnership between our countries, which is likely to be generating even more impact in the future.

Oskar Kass, Counsellor (Economic Growth), Embassy of Finland
ACRONYMS
& ABBREVIATIONS
### Acronyms and Abbreviations

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<thead>
<tr>
<th>Acronym</th>
<th>Full Form</th>
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<tr>
<td>BAME</td>
<td>Bachelor of Applied Marketing and Entrepreneurship</td>
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<td>BEM</td>
<td>Business Excellence Model</td>
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<td>BICO</td>
<td>Bureau of Industrial Cooperation</td>
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<td>BRELA</td>
<td>Business Registrations and Licensing Agency, Tanzania</td>
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<td>BRN</td>
<td>Big Results Now</td>
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<tr>
<td>CBE</td>
<td>College of Business Education, Tanzania</td>
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<td>COSTECH</td>
<td>Tanzania Commission for Science and Technology</td>
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<tr>
<td>CTA</td>
<td>Chief Technical Advisor</td>
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<td>CTI</td>
<td>Confederation of Tanzania Industries</td>
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<td>DFID</td>
<td>Department for International Development (UK)</td>
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<td>DIT</td>
<td>Dar es Salaam Institute of Technology</td>
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<tr>
<td>DMS / DMIS</td>
<td>Document Management (Information) System</td>
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<td>DTBi</td>
<td>Dar Teknohama Business Incubator</td>
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<tr>
<td>EFQM</td>
<td>European Foundation for Quality Management</td>
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<tr>
<td>ELL</td>
<td>Elimu Living Lab</td>
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<tr>
<td>ESAMI</td>
<td>Eastern &amp; Southern African Management Institute</td>
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<td>FAM</td>
<td>Financial Administration Manager</td>
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<td>FDI</td>
<td>Foreign Direct Investment</td>
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<tr>
<td>GLA</td>
<td>Grow Leadership Academy</td>
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<tr>
<td>GNL</td>
<td>Grow Next Level (Entrepreneurship Training)</td>
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<td>ICT</td>
<td>Information and Communication Technologies</td>
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<td>IFM</td>
<td>Institute of Finance Management, Tanzania</td>
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<td>IP</td>
<td>Intellectual Property</td>
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<td>ITU</td>
<td>International Telecommunication Union</td>
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<td>KINU</td>
<td>Innovation and co-creation space, Dar es Salaam</td>
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<td>LL</td>
<td>Living Lab</td>
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<td>MCST</td>
<td>Ministry of Communication, Science and Technology, Tanzania</td>
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<td>ME&amp;L</td>
<td>Monitoring, Evaluation &amp; Learning</td>
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<td>MFA</td>
<td>Ministry for Foreign Affairs, Finland</td>
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<td>MLL</td>
<td>Mbeya Living Lab</td>
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<td>MTR</td>
<td>Mid-Term Review</td>
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<td>MUST</td>
<td>Mbeya University of Science and Technology</td>
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<td>NGO</td>
<td>Non-Governmental Organization</td>
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<td>Abbreviation</td>
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<td>NICTBB</td>
<td>National ICT Broadband Backbone</td>
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<td>NICTP</td>
<td>National ICT Policy</td>
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<td>NM-AIST</td>
<td>Nelson Mandela African Institution of Science and Technology</td>
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<td>South Africa - Finland Knowledge Partnership on ICT</td>
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<td>SIDO</td>
<td>Small Industries Development Organization, Tanzania</td>
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<td>STI</td>
<td>Science, Technology and Innovation</td>
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<td>SUZA</td>
<td>State University of Zanzibar</td>
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<td>SVB</td>
<td>Supervisory Board</td>
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<td>TA</td>
<td>Technical Assistance</td>
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<td>TANZICT</td>
<td>The Tanzania Information Society and ICT Sector Development Project</td>
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<td>TAYI</td>
<td>Tanzania Youth Icon</td>
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<td>TCCIA</td>
<td>Tanzania Chamber of Commerce, Industry &amp; Agriculture</td>
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<td>TCRA</td>
<td>Tanzania Communications Regulatory Authority</td>
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<td>TIP</td>
<td>Tanzania Innovation Program</td>
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<td>TPSF</td>
<td>Tanzania Private Sector Foundation</td>
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<td>UB</td>
<td>University of Bagamoyo</td>
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<td>UDICTI</td>
<td>University of Dar es Salaam ICT Incubator</td>
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<td>UDSM</td>
<td>University of Dar es Salaam</td>
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<tr>
<td>UNECA</td>
<td>United Nations Economic Commission for Africa</td>
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<td>UNICEF</td>
<td>United Nations Children’s Fund</td>
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<td>UOI</td>
<td>University of Iringa</td>
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<tr>
<td>VSO</td>
<td>Voluntary Service Overseas</td>
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PHOTO ACKNOWLEDGMENTS

We thank the following people for the use of their photos - all have contributed to making this publication as vibrant and colourful as it is.

- **Laura Kotila**: photo of the Minister, Ministry for Foreign Affairs, Finland, p. 12
- **MCST**: photo of the Minister, Ministry of Communication, Science and Technology, Tanzania, p. 13
- **TANZICT team**: Jukka Siltanen, Kristiina Lähde, Teemu Seppälä, Iiro Kolehmainen, Arnold Masaro
- **Buni Hub**: Brian Paul, Jumanne Mtambalike, Basil Malaki
- **Pamoja Labs (Living Labs)**: Yusuf Ssessanga, Simon Flamand, Sanna Nevala, Karol Novat
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