

ICT4SIDS Partnership Status Report (July 2016)

Website: www.ict4sids.com

Partnership Highlights

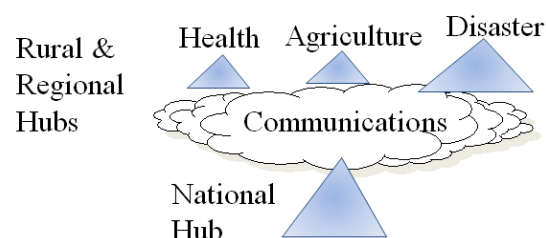
- The ICT4SIDS Partnership was formed during the Samoa Conference in 2014 between (SIDS), UN organization (OHRLLS), academic institutions, and startup industries.
- The Partnership has grown significantly from only 3 partners to over 12 – it now includes IBM, a healthcare NGO and 10 SIDS countries.
- Our objective is to accelerate the Samoa Pathway and UN 2030 Agenda for Sustainable Development through ICT. Specifically, we want to use collaborating ICT hubs at rural, regional and national levels for health, education, public safety, public welfare, and other vital sectors.
- These hubs also support the SDG (Sustainable Development Goals) related services at rural, regional and national levels.
- Our main challenge is that implementation of the vision of large number of interacting ICT Hubs is a non-trivial task with failure rates up to 80% in developing countries.
- To address these challenges, we are using a computer aided methodology that completes a feasibility study and produces a funding proposal plus a working prototype of the selected Hub(s) within a day.
- Our biggest achievements are high impact projects such as the Hypertension Hub in Haiti and significant reduction of failure rates and implementation times by using computer aided planning approaches.
- The best lessons and practices we have learned are based on using agile methodologies and not to look for quick victories – complex tasks need investment of time and energy.
- Our short range targets, in 2016, are expansion of the World Hypertension Hub with Haiti to two more islands, a DRM (Disaster Recovery Management) Hub for at least one island, and capacity building training for hub masters.
- Our long range targets, in 2017, are to expand the Hypertension Hub to 10+ islands, the DRM Hubs to 5 islands, and offer extensive capacity building training for hub masters.
- We have presented our results at the UN Infopoverty World Conferences and at the OHRLLS Aruba P3a Conference. We have also published several white papers, educational materials and demonstrations (for details, see our Website www.ict4sids.com).

Partnership Overview and Objectives

The ICT4SIDS Partnership was formed during the Samoa Conference in 2014 (SIDS ID#8005), between Small Islands and Developing States (SIDS), UN organizations (Infopoverty and UN-OHRLLS), academic institutions (Harrisburg University and Oklahoma University), and startup industries (e.g., NGE Solutions). The partnership has grown since then to include companies such as IBM and NGOs such as Colleagues in Care (CIC). Our objective is to use ICT for rapid adoption of the Samoa Pathway and UN 2030 Agenda for Sustainable Development.

The Samoa Pathway document highlights the importance of Capacity Building in Section 109 and clearly specifies the role of ICT in Para h (Section 109): *“To establish national and regional information and communications technology (ICT) platforms and information dissemination hubs in small island developing States to facilitate information exchange and cooperation, building on existing information and communication platforms, as appropriate;”*. The objective of ICT4SIDS Partnership is to use these collaborating ICT hubs at rural, regional and national levels for health, education, public safety, public welfare, and other vital sectors. These hubs also support the SDG (Sustainable Development Goals) related services at all levels.

The following Figure shows a conceptual view where several rural and regional hubs that support health and human services are interconnected to a larger National hub that consolidates and disseminates vital information to other users. The hubs may be combined into highly effective community centers for remote villages and may be physical (e.g., rented rooms in a school) or completely virtual (e.g., portals located somewhere in the “Cloud”). Examples of ICT hubs are eSeva Centers in India that allow rural populations to pay bills and buy bus tickets, Telemedicine centers in Africa, and Community Centers for adult education by Faith-based organizations.



Progress Made Since the Samoa Conference and Main Achievements

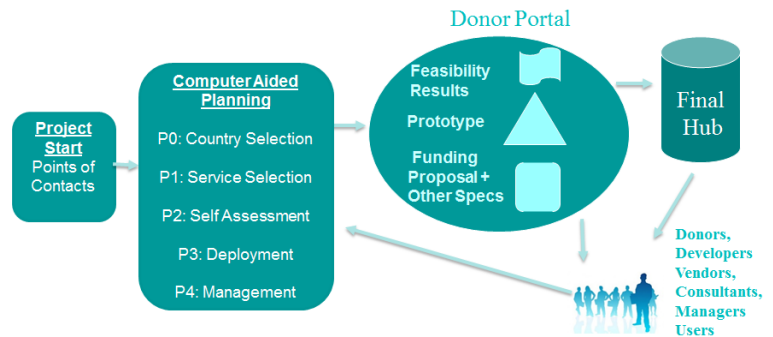
The Partnership has grown significantly from only 3 partners (Harrisburg University, Oklahoma University, and Infopoverty/OCCAM) to over 12. Specifically, we have:

- Established a strong working relationship with OHRLLS Officials and Staff. Due to this relationship, we held 6 working sessions with representatives from 11 SIDS in 2015 and 2016
- Established strong working relationships with 11 SIDS (Antigua, Bahamas, Jamaica, Grenada, Maldives, Nauru, Palau, Solomon Islands, Samoa, Timor-Leste, Vanuatu). The Ambassadors to UN and their staff from these islands attended the workshops.
- Expanded private partnership to include large private organizations such as IBM. As a result of this partnership, IBM has donated a large scale machine that is currently housing the Central ICT Hubs to support the ICT Hubs in SIDS for Health, Education, Public Safety and Public Welfare.
- Expanded partnership to include World Class Organizations such as the World Hypertension League (WHL) and Colleagues in Care (CIC). WHL and CIC are at the core of the World Hypertension Telemedicine Center that is housed at the IBM Machine on Harrisburg University Campus. This Center is already working with Haiti. Hypertension is the largest Non Communicable Disease (NCD) that is highlighted in the Samoa Pathway as well as SDGs (Goal3).
- Established a very strong partnership with Harrisburg University of Science and Technology (HU) for capacity building and ICT technical support. The IBM machine is housed at the HU campus and will support capacity building programs in ICT for SIDS

Challenges Faced and Approaches Adopted to Overcome Challenges

As stated previously, we are concentrating on large number of collaborating ICT Hubs for Rapid Adoption of Samoa Pathway and UN 2030 Agenda for Sustainable Development. However, implementation of this vision of large number of interacting ICT Hubs is a non-trivial task with very high failure rates -- up to 80% in developing countries. To address these challenges, we used the following computer aided methodology, displayed in the Figure.

- *Phase1:* A Hub vision is proposed
- *Phase2:* A Pilot Project is initiated by a SIDS and a Point of Contact (POC) is appointed.
- *Phase3:* A computer aided planning tool conducts an extensive feasibility within a day and produces a funding proposal and a working prototype of the selected Hub(s).
- *Phase4:* The results of the feasibility study are published in a Donor Portal for attracting funding sources and a final hub is created in collaboration with local experts.



The objective of this computer aided methodology is to do more (provide more services to more customers) with less (less time, money and trained staff). Specifically, this methodology can save \$50K to \$70K per Hub, plus time (almost a year) and significantly reduce retries, errors and failures. These improvements reduce ICT risk, and therefore can attract greater participation by the private sector, which is key to accelerating the rate of value for SIDS organizations and individuals.

Lessons Learned

- Implementation of World Hypertension Telemedicine Hub, currently, focusing on Haiti addresses a very urgent need for SIDS and can be replicated beyond Haiti.
- Computer aided Pilot Projects are essential for rapid deployment of large number of collaborating ICT Hubs needed to support SDGs and Samoa Pathway
- The first three phases (Phase1 to Phase3 of the computer aided planning methodology) are a complete success with very promising and repeatable results (high value with low cost). In addition, the knowledge gained is fed back into the tool for future use
- Phase4 needs some work. In particular, choice of Point of Contact (POC) and Funding are the key challenges that are being addressed at present.
- The computer aided planning tool called SPACE (Strategic Planning, Architectures, Controls and Education) is a very effective capacity building aid for SIDS because it allows hands-on planning experiments.

Next Steps based on Lessons Learned

- The World Hypertension Telemedicine Hub will be replicated to many SIDS, first focusing on 10 SIDS that are already working with us (see Exhibit1 for details of a sample Hub).

- The next major World Class Hub will focus on Disaster Recovery & Management (DRM) by using Sahana Open Source software. SPACE is currently being extended to support Sahana.
- Reduce failure rates doing thorough but very quick phases 1, 2, 3 by using computer aided planning. However, we get stuck in phase 4 due to POC, capacity building and funding issues.
- Focus on Phase 4 issues by using the following approaches: First, encourage young entrepreneurs from SIDS to become POCs and help them start their own businesses. Second, connect the small existing hubs that are successful with larger more successful hubs by using ICT. Third, use our successes and insights to develop solid funding proposals.
- Keep refining SPACE based on lessons being learned and use SPACE extensively for SIDS capacity building.

Presentations and Publications

- We have presented our results at the UN Infopoverity World Conference (IWC), held on April 14-15, 2016, at the UN Headquarters, NYC.
- We also presented our results at the Aruba P3a Conference in March 2016
- We have published several white papers, educational materials and demonstrations that can be found at our Website (www.ict4sids.com)
- We will publish and present our results more widely in research journals, conferences and UN meetings

Exhibit1: Example of a Hypertension Telemedicine Hub

The World Hypertension Telemedicine Hub, currently, focusing on Haiti addresses a very urgent need for SIDS and can be replicated beyond Haiti. The configuration shown in the Figure shows a set of Telemedicine Clinics (Clients) that may be located at rural, regional, and national levels to serve the remotely located patients.. The Hypertension Hub houses hypertension specialists, doctors, nurses and other healthcare providers who diagnose and advise the patients.

In addition, several analysts may use decision support and business intelligence tools for visualization of the patient data stored on the Center Database. The Center may also provide educational, training and consultancy tools for nurses and patients.

The major advantage of this Hypertension Telemedicine configuration is that a very large number of patients located in rural and remote areas in poor countries can be helped by world class specialists.

