Building an Ecosystem to Provide Sustainable eHealth Technical Capability for the Philippines

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Context: The Need and the Challenges

- **The Need:**

  - **The Philippine government program to implement eHealth services on a national scale**

- **The Challenges:**

  - **The lack of preparedness of Health Care Organizations to apply Information Technology on a technical, organizational, and cultural perspective.**

  - **The lack of local technical capability to develop, implement, and maintain I.T. Solutions for Health Care Organizations**

Technology Transfer through North-South Collaboration

- **Lack of familiarity with needs and opportunities**

  - **The Massachusetts Institute of Technology (MIT) sent a student intern to the Philippines in 2009 to study delivery of Telemedicine services in a remote area.**

- **Difficulty finding appropriate partners**

  - **MIT Team found a local partner through the MIT alumni association**

- **Issues of Trust**

  - **Collaboration was started when the founder of SANA visited the Philippines in 2009 and sent two interns to start projects in the Philippines in 2010**

- **Communication and coordination challenges**

  - **Language barriers, disparate time zones, geographic distance, varied cultural norms**

- **Financing-related issues**

  - **Local Foundation funded the development of the pilot project with MIT and two local NGO's**

Academe Collaboration with local Health Care Organizations

- **Asia Pacific College (APC) and its Project Based Learning (PBL) track**
  - **APC established its PBL track in 2001**
  - **Through the PBL track, students worked with real clients in various industries**
  - **The students built Information Technology solutions to address needs of their clients**

- **Several Health Care Organizations were taken on as clients through PBL**
  - **Air Force General Hospital (AFGH), Philippine General Hospital (PGH) Department of Otorhinolaryngology (ENT) , and one village, Barangay Maybunga oin Pasig City, Manila**

- **I.T. Solutions applied to each Health Care Organization**
  - **GNUHealth for the Air Force General Hospital**
  - **SANA for PGH and the LGU**

- **Air Force General Hospital of the Philippine Armed Forces**

  - **Requirement: The Medical Records department wanted an electronic medical record system to facilitate submission of reports required by the Department of Health (DOH) and the hospital management**

- **Department of Otorhinolaryngology of the Philippine General Hospital**

  - **Requirement: The ENT department wanted to use SANA to capture patient information, including taking pictures of the affected area of the patient**

  - **The Philippine General Hospital had already implemented OpenMRS**

- **Barangay Maybunga of Pasig City Health clinic in Metro Manila**

  - **Requirement: In 2009, the Barangay Maybunga Health Clinic suffered loss of all its paper medical records because of Typhoon Ketsana (Ondoy)**

  - **It then considered the implementation and use of Sana, to provide on-site and remote back up of electronic medical records of its patients**

Challenges Faced and Lessons Learned from Projects with local HCO's

- **Challenges faced in the Air Force General Hospital project**

  - **Low levels of Information Technology skills and capability of the staff and management**

  - **Lack of knowledge and expertise by the students in Healthcare, and in GNUHealth**

- **Lessons learned**

  - **Information Technology capability and skills need to be built up over a period of time**

  - **An organization cannot be expected to immediately adapt a new and complex technology if it is not ready for it**

- **Challenges faced by the PGH-ENT dept and LGU project**

  - **Lack of experience by the students in customizing SANA to the project requirements**

  - **Lack of time with in the PBL track to complete the customization of SANA**

- **Lessons Learned**

  - **A local, trained I.T. Provider should be ready to continue the projects**

Academe collaboration with a Local I.T. Company

- **In 2008 author started an Information Technology company**

  - **The company was staffed with students of the Professor, current and graduates.**

  - **Students from APC interned and worked at the company to gain experience in customizing, building, and implementing systems.**

  - **It was through this pipeline of training students first in school, then as interns at the author's company, then hiring the most qualified students that a pipeline of trained technical manpower was establish ed to service the needs of the local I.T. industry.**

Local I.T. projects with Health Care Organizations

- **In 2010, the author set up Integrated Open Source Solutions (iOSS) as a corporation, and operations of the company expanded into doing many I.T. projects, both in the healthcare and various other industries.**

- **Healthcare related projects of iOSS**

  - **A Hospital Information System (HIS) built from scratch for a 25 bed provincial hospital, Our Lady of Rosary hospital in Macabebe, Pampanga**

  - **An Electronic Medical Record System [EMRS] built from scratch for Noordhoff Craniofacial Foundation Philippines, Incorporated [NCFPI]**

  - **The pilot implementation of Sana with two not-for-profit organizations: Center for Community Transformation, and Negros Women For Tomorrow Foundation**

Components for Building an Ecosystem

- **North-South collaboration**

  – **Massachusetts Institute of Technology SANA project with Asia Pacific College**

- **Academe collaboration with local healthcare organizations**

  – **Asia Pacific College projects with the Air Force General Hospital, Philippine General Hospital ENT department, and Barangay Maybunga health clinic**

- **Academe collaboration with local I.T. companies on healthcare projects**

  – **Asia Pacific College collaboration with Integrated Open Source Solutions for pipeline of trained I.T. manpower, and eHealth related projects.**

- **Local I.T. companies work on I.T. projects with healthcare organizations**

  – **Integrated Open Source Solutions work on several eHealth related projects**

Conclusions:

The Challenge of establishing and building relationships

- North-South Collaboration
- One Point Person
- Meet HCO's "Where They Are At"
  - Technical
  - Organizational
  - Cultural
- Phases of HCO in I.T.
  - Imperative Need
  - Introduction
  - Absorption
  - Adoption
  - Institutionalization

Questions for discussion

- **What components of the eco-system do you already have that you can build upon?**

- **What adaptations do you see are needed in order to build your own ecosystem for sustainable eHealth capability in your country?**