ICT Application and Content Development

Partnership of:
- Carnegie Mellon University
- Secretariat of the Pacific Community
- International Telecommunications Union
ICT Application and Content Development

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Carnegie Mellon University

- A Tier 1 Research University
- One of top 3 Computer Science Schools in the USA
- A highly ranked Information Systems and Policy School
- A global university, with campuses and programs in:
  - Pittsburgh, USA
  - Doha, Qatar
  - Kobe, Japan
  - Adelaide, Australia
  - Athens, Greece
  - Lisbon, Portugal
  - And elsewhere
- Birthplace of CERT
3rd IEEE/ACM International Conference on Information and Communication Technologies and Development (ICTD2009)

For info: ICTD2009.org
Offer

- I bring no new product, project, initiative or center
- Instead, an offer to partner on your projects and initiatives
- Not with money
- But with talented students of computer science, information systems, and public policy.
An opportunity of mutual benefit

• Use talented students of Computer Science and Information Systems as patient, (relatively) low cost, capacity-building consultants to address the needs of current and forthcoming projects.

(We have been doing this for 5 years)
Stories about the problem

- Kosrae – WHO lab
- College of Micronesia – SIS system
- Palau Ministry of Education - dropped contractor
- Palau Ministry of Health - managing with data
- Hospital on Ebeye - Technological archeology
We’ve found

- It can be difficult to make effective use of ICTs
- Leaders in government ministries, schools, and nonprofit organizations try to adopt technologies, but they often do not have the training or experience required for a sustainable implementation.
- Once they have made ICT investments, it can be difficult to hire experienced technical support staff and to educate existing administrative and program staff.
- Vendor training is often expensive, short-lived, and seldom fits the individual needs of the organization.
Comments I noted yesterday

(I don’t claim this is an endorsement by the speakers)

• Mr. Siaosi Sovaleni noted the barriers:
  – Lack of awareness/information
  – Lack of technical capacity
  – Lack of local buy-in
  – Lack of leadership / political will
  – Poor planning

• Mr. Simon John Mackey stated:
  – We need to enable the villagers themselves.

• Ms. Noelle Jones identified a strategy need for:
  – User and community education
This matches many others’ stories:

- Economic barriers: fees vs. willingness to pay
- Social barriers: Discrimination or avoidance
- Confused branding: try to be all things to everyone
- Educational barriers: difficulty in text and computer navigation
- Mistrust and overabundance of information
- Lack of information in a familiar form: e.g. languages & dialects
- Poor infrastructure: spotty electricity and connectivity
- Frequent maintenance needs: Quality service unavailable or costly

Source: Microsoft Research India: Review of Research on Rural PC Kiosks, Editors: Renee Kuriyan and Kentaro Toyama, PhD,
http://research.microsoft.com/research/tem/kiosks/Kiosks%20Research.doc
Therefore, the first third the problem

- How to address real problems concerning health, education, good governance, economic development
  - Using ICT

- The 2nd third concerns education
For the educators...

• How to create authentic opportunities for students to:
  – Work in cross-disciplinary professional teams?
  – Assess a complex situation and identify the problems?
  – Bring structure to authentic unstructured problems?
  – Work with partners to implement a appropriate solution?
  – Plan for the sustainability of the solution?
My students have also found:

- Warm, friendly people
- Safe locations
- Gorgeous natural beauty
- Interesting technical challenges
- Interesting culture
Third part of the problem

- Professional ICT assistance is expensive
- Professional ICT consultants often use a build-depency business model
Mutually Beneficial Partnerships

• This creates the possibility for mutually beneficial partnerships

  – Pacific Island countries get ICT application help
  – Student consultants get experience
  – Donors’ investments get leveraged
Global Technology Consulting Corps

- Built on 11 years experience providing capacity-building assistance to local nonprofits.
- 5 years experience with Pacific Island states
  - As Technology Consulting in the Global Community
History of Partnerships (2004-2008)

- **Palau**
  - Ministry of Health
  - Ministry of Education
- **Sri Lanka** - nonprofits involved in tsunami relief
- **Federated States of Micronesia**
  - College of Micronesia
  - 4 state hospitals
- **Marshall Islands** - Hospital in Ebeye
- **Chile** - Universidad Austral de Chile, Valdivia
- **Cook Islands** - 4 government ministries
- **India**
  - PlanetRead - mass broadcast literacy program
  - Mathru School
- **Ghana** - Ashesi University in Accra
Example outcomes: Stephanie

Helped the Cook Islands Ministry of Internal Affairs build a database to track payments to children, destitute, infirmed, or old age benefit recipients.
Conrad & Danny - Marshall Islands

Ebeye hospital infrastructure & training

(partnership with PEACESAT)
Gopal & Steve - Palau

• Separate patient tracking databases customized to the needs of individual departments

• General spreadsheet and database training sessions every Friday, frequented by physicians who make regular statistical reports but spend too much time manually counting data.

• “[The TCinGC student consultants] were able to complete in 10 weeks what the Ministry of Health has wanted to accomplish for years, which is appropriate department level data bases that can be maintained internally for rational decision making.”

• ~“My department heads now come to meetings armed with data.”
Program evaluation

- Solutions continue to be used
  - Cook Islands Ministry of Health web site (2004)
  - Cook Islands E-Government Strategy (2005)
  - Palau Ministry of Health databases (2006, 2007)
- Partners are willing to repeat
  - Sri Lankan non-profit (2006, 2007 cancelled due to conflict)
- Program evaluation surveys positive
- Partners have recommended us to other Ministries
  - Cook Islands Ministry of Health to 3 other ministries
  - Palau Ministry of Education to Health
  - Palau Ministry of Health to Palau Community College
Cost sharing

- Carnegie Mellon manages recruiting and training the students
  - Also provides remote advising
- Local development partner provides:
  - Local accommodations
  - Subsistence stipend
- Together we approach donors to support:
  - Travel
    - Student consultants
    - Faculty advisor visit at beginning of engagement
Time frame

- 10 weeks
- Late May - early August
• PACRICS has brought ICT access to remote island communities.

• To realize more fully the societal benefit of this investment, we propose to deploy applications and build human capacity in the communities served by PACRICS installations.

• By using talented student consultants from Carnegie Mellon University (and other top-tier universities in future years) to provide patient, longer-term, on-the-job, project-based learning for community and organization leaders in PACRICS communities.

• These students will help infuse technical knowledge into the communities, but more importantly, will work with community leaders to find ways the technology can solve important community problems such as in education, health care, government or providing other community services.
SPC / ITU / Carnegie Mellon
Partnership Objectives

1. Provide 3 pairs of student ICT consultants to work in PACRICS communities for a period of 10 weeks from late May to early August 2009.

2. Do a participatory needs analysis with identified community leaders in health, education, or government services to identify promising applications of ICT technology to address community needs.

3. Implement sustainable initiatives to improve health, education, or government services using the ICT provided by PACRICS in 3 locations.

4. Document observable outcomes at each location, and provide recommendations for sustaining those outcomes.

5. Assess the learning outcomes achieved by the community leaders in their vision of how the ICT technology can serve their community.
Caveats

• This is not a professional consulting company
• We cannot guarantee outcomes
• We cannot enter into contracts for specific deliverables

• But this is a process that has positive benefit because:
  – It brings people together in partnership
  – With different skills (local wisdom, technical skill)
  – It focuses addressing local needs
  – And on capacity building
  – (And is cheaper than professional consultants)
Looking for additional partners

• Administrations in Pacific Island countries
  – Who would host the students
• Funders
• Additional Universities
  – USP?
  – Universities in Japan, elsewhere?
• Those investing in ICT technology, looking for:
  – Local Capacity Building
  – Deploying locally-relevant applications
  – Creating locally-relevant content