

Examples of Tele-center activities for Bridging the Digital Divide

APT Workshop on Wireless Technology

Toward the Broadband Society

by

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Roles of the Rural Tele-center

- To realize grass roots access to global Information through the Internet
- To promote the sale of local products through the Internet and e-Commerce
- To provide government information such as natural disaster warning to local communities
- To attract visitors from all over the world by demonstrating local culture and beautiful scenery
- To attract investors to villages by ensuring global access from rural areas
- To educate people and to enrich living standards through e-Learning, e-Health, e-Government and other e-applications

Digital Divide Factors

- Disparity between;
 - ◆ Developed country and developing country
 - ◆ Urban area and rural/remote area
- Differences caused by;
 - ◆ Income
 - ◆ Education and job training
 - ◆ Race
 - ◆ Gender
 - ◆ Age
 - ◆ Disabilities

Most Important Problem to be Solved

- Development of Rural ICT Infrastructure -

- Disparity of domestic information infrastructure is larger in developing countries than developed.
- Huge amount of investment is needed.
- No attraction for private sector investors because of lack of commercial sustainability.
- There is no simple solution to this problem.
 - ◆ Needs of innovative solutions to meet local needs
- ITU-D has been focusing on this issue:
 - ◆ Development of Multi-purpose Community Tele-centre (MCT) is one of the solutions.

Why Tele-center or CeCs?

- Without communication infrastructure, we cannot transform the Digital Divide into Digital Opportunity in rural and remote areas of developing countries.
- The most cost effective solution in rural area is to share necessary facilities at tele-centers or CeCs.
- We have various experiences of building tele-centers world wide. (Many success stories and miscarried projects)
- In many countries in the world, tele-center projects have been undertaken as one of the e-Government Initiatives and become a hot topic in many international Forum.
- Integration of 3 key factors (Infrastructure, Applications/ content development, and Human Capacity Building) are essential for the successful implementation of tele-centers.

What is Tele-center?

- Tele-centers are public facilities that offer shared access to ICT.
- They are public places where people can use computers, the Internet, and other media; get training; and often obtain a variety of other communication-related services. (Roman and Colle, 2001)
- However, in reality, tele-centers are full of varieties.
- Establishment and sustainable operation of tele-centers are becoming more and more important policy target to bridge the Digital Divide in rural and underserved or unserved areas of developing countries.

Tele-center projects in Asia Pacific

- Community Access Point (Warnet: Indonesia)
- Multi-purpose Community Telecenters (MCT: Thailand, Vietnam, Mongolia, etc.)
- Internet Tambon (Thailand)
- Yap SEED (Yap states, FSM)
- People First Net (PFnet: Solomon Island)
- PTCs (Vietnam)
- Tele-center (VSAT+W-LAN+VoIP: Nepal)
- Community e-Centers (Philippines)

Selection of Network Technology for the design of rural tele-centers

- Global Trend to be Considered -

- From public switched networks to IP based networks
- Explosion of mobile Internet access
- Mobile subscribers are exceeding fixed subscribers
- The variety of new technologies and applications in designing user-oriented tele-centers such as barrier free and maintenance free facilities
- Wireless LAN technologies such as Wi-Fi and/or Wi-MAX have been reducing the cost of “last one mile” broadband access remarkably.

Innovative Solutions for Rural Communication Infrastructure: Keyword is “Wireless”

- Grass-root development of telecom network using micro-credit and GSM in Bangladesh (village phone program: Grameen Bank)
- Development of mobile/fixed network using PHS technology in Cambodia and China (30M subs)
- Nepal and Solomon Island strategy for rural telecom network using HF radio systems
- Pilot projects for the development of MCT in many countries using wireless LAN technology

Key Factors for the Success of Rural Tele-centers Policy Recommendations (part 1)

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- Strategic approach by government (and/or local government and community)
- Information sharing on success stories and miscarried experiences by setting up data base on the cyber space (www.dosite.jp).
- Establishment of group of tele-centre managers, and to organize workshops/seminars for sharing knowledge
- Powerful leadership with careful management
- Participation of community leaders from initial stage
- Establishment of Tele-center Steering Committee at each site

Key Issues for the Success of Rural Tele-centers

Policy Recommendations (part 2)

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- **Rely on Grass-root initiative to find solutions**
- **Introduction of non-licensing scheme for 2.4GHz and 5GHz band to facilitate grass-roots development of communication infrastructure**
- **Collection of sufficient information at specific site**
- **Access is essential, but if possible, Broadband access to meet growing and multi-media needs**
- **Development of human resources and participation of rural community people in operation (establish partnership with schools and NGOs)**
- **Establishment of new partnership between government, business, schools and civil society**

Various Approaches for Tele-centers (1)

Community e-Center: CeCs (the Philippines)

- First CeCs has established on 20 October, 2004.
- NCC (National Computer Center) aims to establish 100 CeCs all over the country.
- Role of CeCs: (Multi-purpose)
 - Source of information for agriculture, education, health and livelihood
 - e-Learning Center and e-Library
 - Public Calling Office (PCO)
 - Internet Cafe

Ladies and gentlemen!

Now, I would like to introduce to you some experiences of tele-center projects in Asia-Pacific countries and suggestions for the success of :

Community eCenters Initiative
in the Philippines

Various Approaches for Tele-centers (2)

Tele-centers at Post Offices (Malaysia)

Roles of stakeholders

- Government – provides policy and strategy to steer the programme
- Post Office – provides key infrastructure
- Community – Programme driver and to ensure the sustainability (volunteers from local community)
- Establishment of steering committee
- Development of local content and portal site
- Implementation of IT training course (e-Learning)

Various Approaches for Tele-centers (3) Internet Tambon Initiative (Thailand)

Integration of National Economic Development Plan with National IT Strategy (IT2010)

- “One Tambon One Product Initiative”:
Facilitation of local products and industries as a business incubation policy for SMEs
- “Internet Tambon Initiative” for promotion of e-Commerce in rural area
- Established 8000 Internet Tambon all over the country: next target will be a village tele-center (tambon is group of villages: sub-district)

Various Approaches for Tele-centers (4)

Innovative plan at vocational high school (Indonesia)

Tele-center project managed by IT students
using computer laboratory at school

Benefits of tele-center managed by students at high school

- Management of tele-center business by students at vocational high school is a good educational practice of “How to start, operate and maintain ICT business”.
- Process of teaching local people by students on how to use computer, ICT facilities and software is good practice for students to enhance their knowledge.
- To save investment cost of buying computers, related facilities and maintenance cost.

(Computer laboratory at school open for public from 2.30 PM (after school hour) until 6PM)

How to Realize the Philippines Approach?

- Each country's approach is based on the reality of its economic development stage, specific features of society, culture, and geographic conditions.
- Taking into consideration of best practices and experiences of other countries, I would like to recommend you to establish the Philippines approaches for the successful implementation of Community eCenters program.
- Philippines might have excellent examples of success stories of tele-center practices.
- Sharing information and collaborative learning are essential for the success of CeCs Initiative.

How to develop ICT infrastructure in remote islands?

- The Philippines has many remote islands areas.
- To expand CeCs Program to remote island areas will become key issues to realize “Benefits of ICT for ALL” and “Education for ALL” in the Philippines.
- Following pages are prepared for this Workshop to introduce examples of success stories of the Pacific Island countries in developing tele-centers and school internet.

(If time allows, I wish to explain these pages.)

Case Study 1: Human resource Development Participation of Rural people: Yap State of FSM

- Locally trained and skilled personnel are essential for the sustainable operation and maintenance of ICT networks.
- The Yap SEED model demonstrates the potential and capacity of the Pacific communities to locally manage their own systems and develop local content.
- There are many schools with computer lab which have potential to become rural tele-telecenters. Computer lab instructor training (both teachers and community volunteers) are essential for the successful implementation of rural tele-centers.

What is Yap SEED Model

- Yap State Education Enterprising Department (Yap SEED) has implemented successful ICT infrastructure using W-LAN and related projects.
- Yap SEED excels by implementing innovative concepts for delivering education:-
 - Culturally relevant and grassroots efforts in curriculum development,
 - Strategic design for distance education and for tools assist students and teachers, and
 - Local HRD in maximizing available limited resources.

Lessons Learned from Yap SEED experience

- Students are a great resource, and they are only limited by the tools and hardware you give them, BUT....
- Most teachers are threatened by the abilities of the students which make them feel they have lost control.
- Teachers need to know “It’s OK” if the students know more than they do about the computers...
It’s not a loss of control.

(Lessons learned from Yap SEED project by James Stevenson)

New Realities

- High school students produced multimedia CD-ROMs for kids in the elementary schools showing the differences in Yapese cultures.
- Kids of all ages take to technology like fish to water.
- A mix of good educational practices and technologies will increase students' interest, which in turn increases learning.

(Lessons learned from Yap SEED project by James Stevenson)

Case Study 2: WHY Broadband?

“Broadband Access at Affordable Rates” is common target everywhere in the Pacific.

- Present status of international connectivity-

- Shared access to the Internet through 128kbps from 100 computers at Palau Community College (PCC)
- Shared access to Internet through 128kbps from 20 computers at Yap Campus of College of Micronesia (COM)
- University of Papua New Guinea (6000 students) only 128kbps access line to global Internet

Wideband vs Narrowband

- High speed download
- High cost? Reduction of cost by competition and innovative technology
- Multimedia
- Full use of applications
 - E-Learning
 - E-Health
 - E-Commerce
 - E-Government

- Low speed and take time
- Low cost? But depend on deregulation, competition and new technology
- Text centric
- Limited use of applications

“However, narrowband telecenter should not be ignored”

Narrowband should not be ignored “because”

- There are many remote, isolated and depopulated island and mountain areas in Asia Pacific region.
- It is essential to have access to information in order to bridge the digital divide.
- In some cases, broadband access will become too expensive (prohibitive prices) under present situation.
- There are some examples of best practice using narrow band access: such as Solomon Island PFnet and other Pacific Island countries using HF radio systems.

Case Study 3: PFnet

What is Solomon Island People First Net

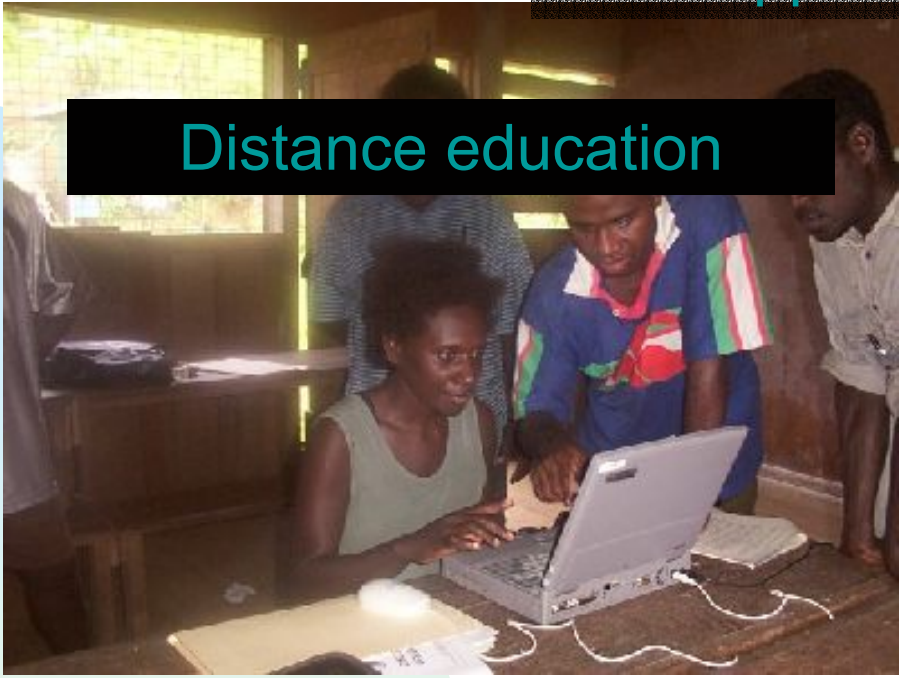
- PFnet is an NGO-Government partnership initially established by UNDP.
- Tested model for sustainable, community-owned rural access
- Web site portal with rich content
- Facilitated networking for:
 - Distance learning
 - Agriculture and fisheries development
 - Indigenous business development
 - Rural vocational training

y UNDP report)

(b

Applications

Distance education



Sustainable livelihoods



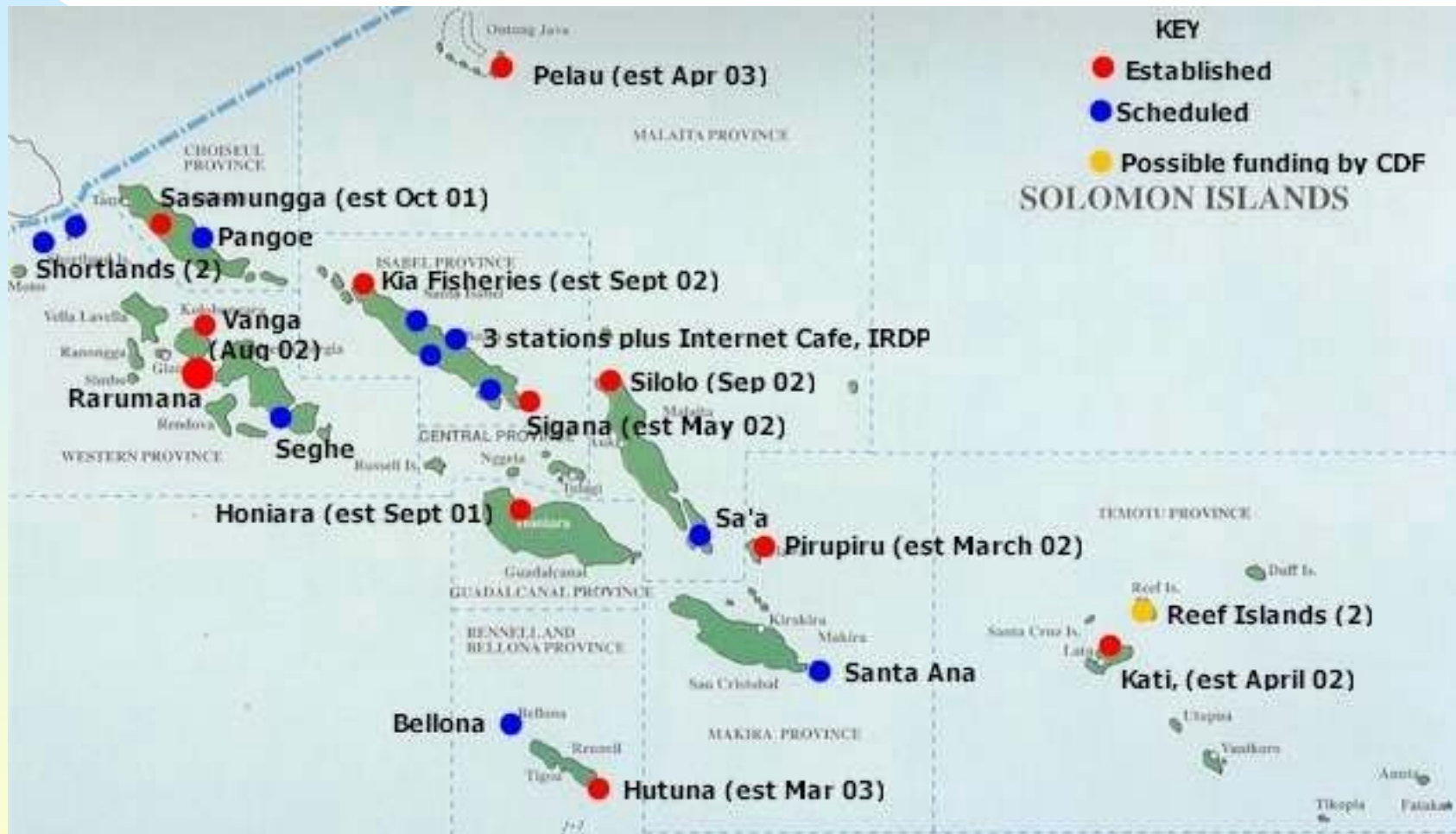
Rural credit + solar power +
communications =
Rural “business incubator”



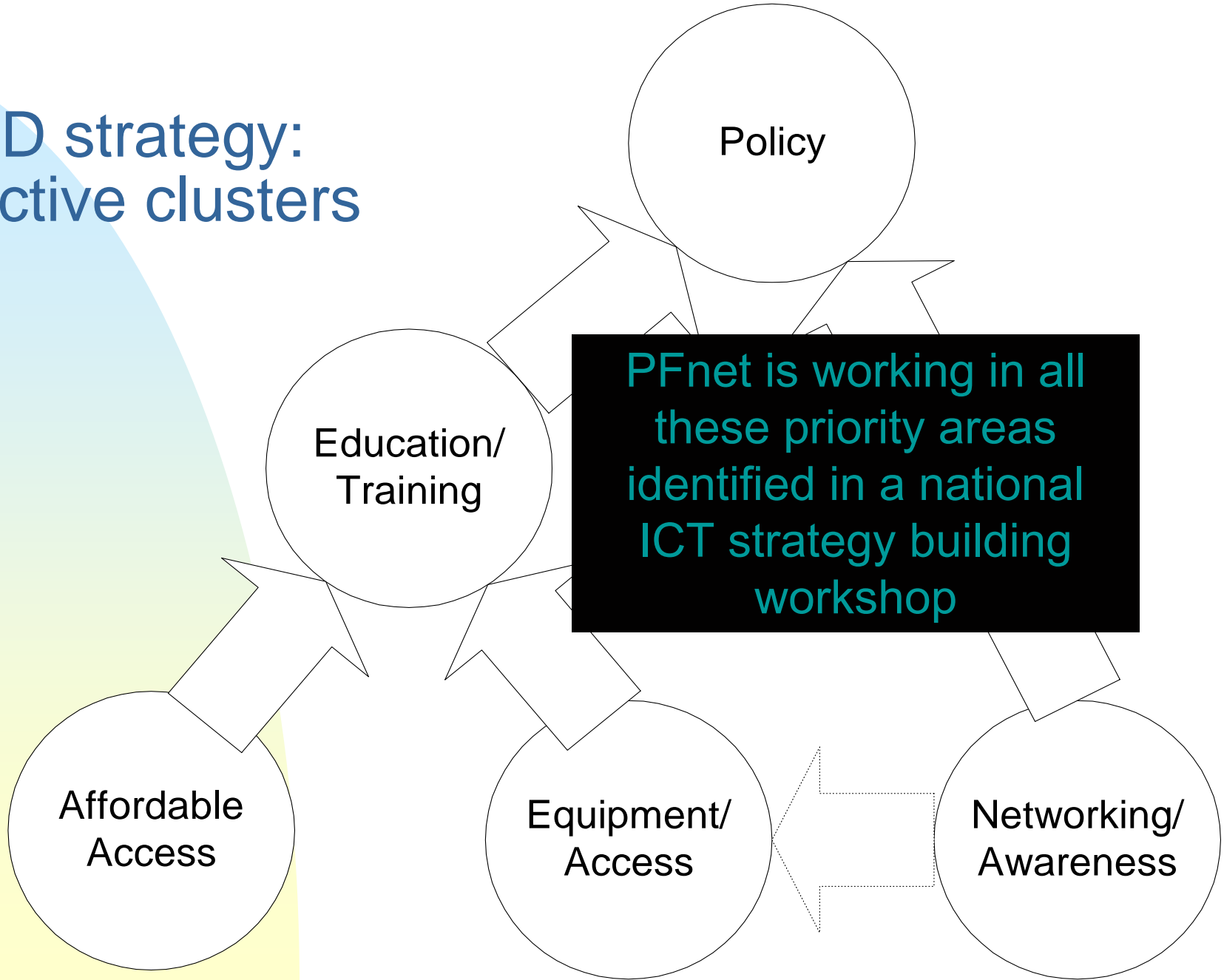
Farmer's networking



10 stations with another 13 scheduled by June 2004



ICT4D strategy: Objective clusters



Funding since Oct 2000 (US\$)

- Government of Japan 140K
- NZAid 125K
- UNDP (direct) 66K
- UNDP (through SIDAPP) 60K
- Government of Britain 60K
- EU – supported 4 community stations directly 32K
- Government of R.O.C. 20K
- APDIP 9K
- AusAid – supported 1 community directly 8K
- Oxfam 1K



Success Stories: e-Farmers in India

Agricultural market prices and innovative ideas via the Internet

- ITC Limited: an agricultural venture company set up more than 3000 village kiosks bringing more profits to farmers, eliminating profits of middlemen, and also providing information on health, nutrition and education/entertainment content to rural people.
- Farmers obtaining soy bean prices on the website of Chicago Board of Trades in U.S.A reports to farmers in the community to decide best timing to sell their products.

(Source: Royal D. Colle "Memo to Telecenter Planners" at APEC TEL30)

Every Failure is a Stepping Stone to Success

- Examples of miscarried projects and success stories -

- The Jhai Remote Village IT System in Lao PDR
- Initial stage of Tele-center at Post Office Project in Malaysia (Now, it became a success story)
- Initial Stage of PF Net in Solomon Islands
- Desa Maju terminals in Indonesia

There are still problems to be solved

- How to realize sustainable operations for rural tele-centers ?
- How to implement cost-effective long distance global internet access lines from rural and remote areas of developing countries ?
- How to educate and train opinion leaders and local community people to be able to utilize ICT technology and how to update their ability to catch up rapid progress of IT technology?
- How to realize strategic alliance between government, business, academia and NGO?

Conclusion: New Challenge

“New initiative of international cooperation should be encouraged.”

Closing the Digital Divide as a common objective based on :

- ◆ Equal partnership
- ◆ Shared ownership, and
- ◆ Mutual respect.

Benefits of ICT for all !

Thank you for your attention