

ICT for Marginalized Area

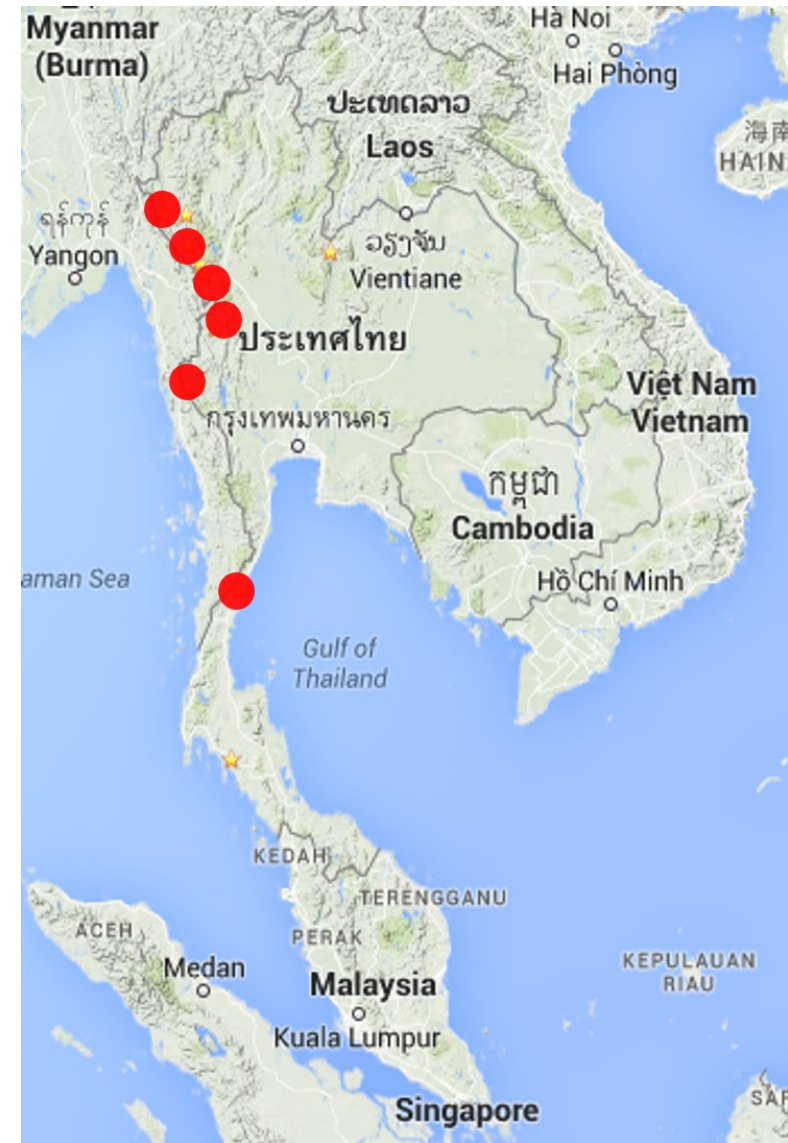
Presented by

Kitti Wongthavarawat, Ph.D.

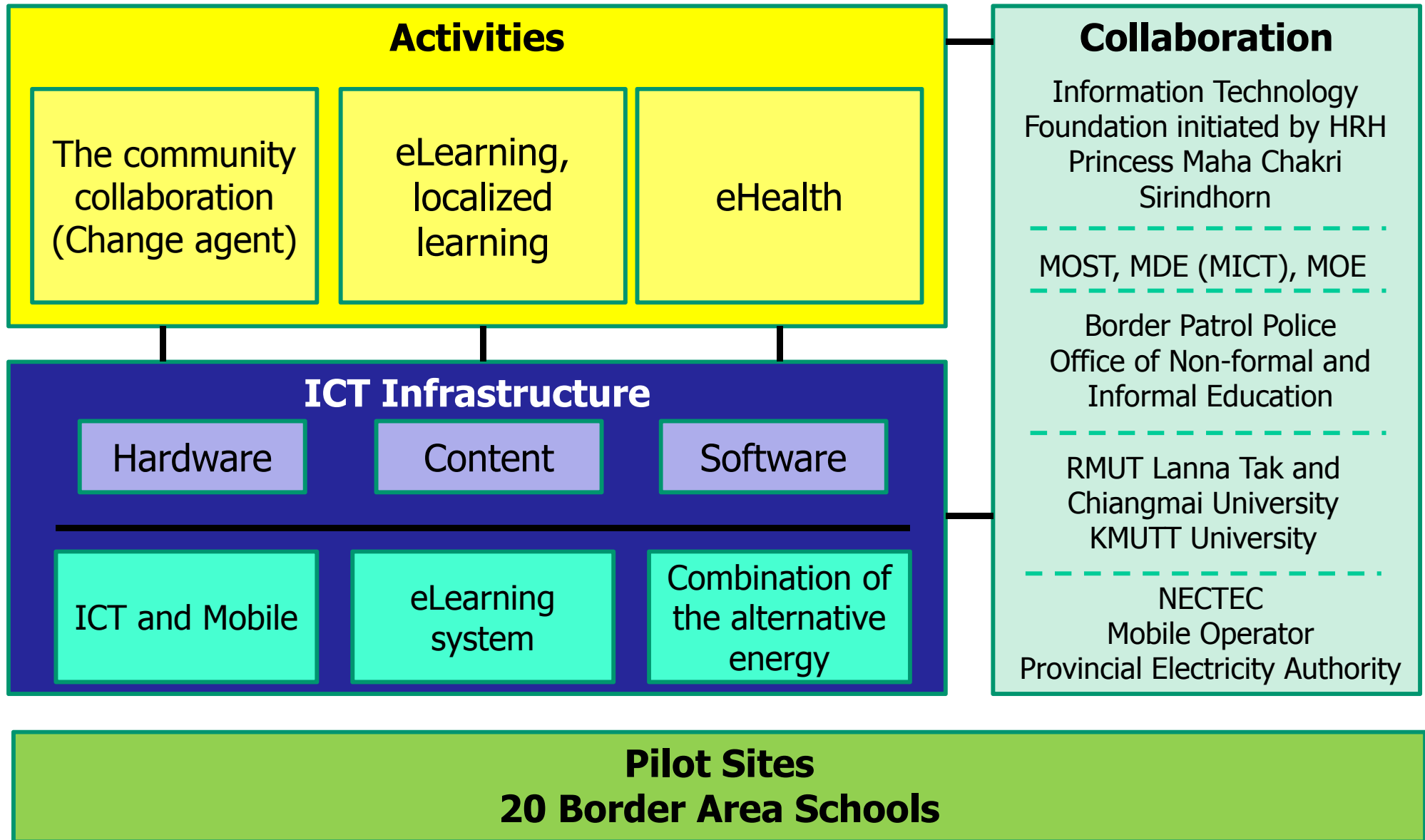
National Electronics and Computer Technology Center
Thailand

Background

- **The typical of marginalized area**
 - Around the border of Thailand
 - Hardship and hard to reach area
 - No electricity, no mobile signal, no Internet
 - Rely on the alternative energy such as solar power
 - Lack of teachers, education, healthcare
 - School in the center of the community
- **Objective of the project**
 - Develop the ICT and Energy model of the marginalized area to reduce the digital divide and to improve the education and the quality of life
 - Develop the technology solutions for the marginalized area
 - Bring the collaboration among agencies, schools and communities to enable the sustainability



ICT for Marginalized Area



ICT SOLUTION (BROADBAND INTERNET AND MOBILE)

Marginalized School



3G Femtocell



Mobile Signal

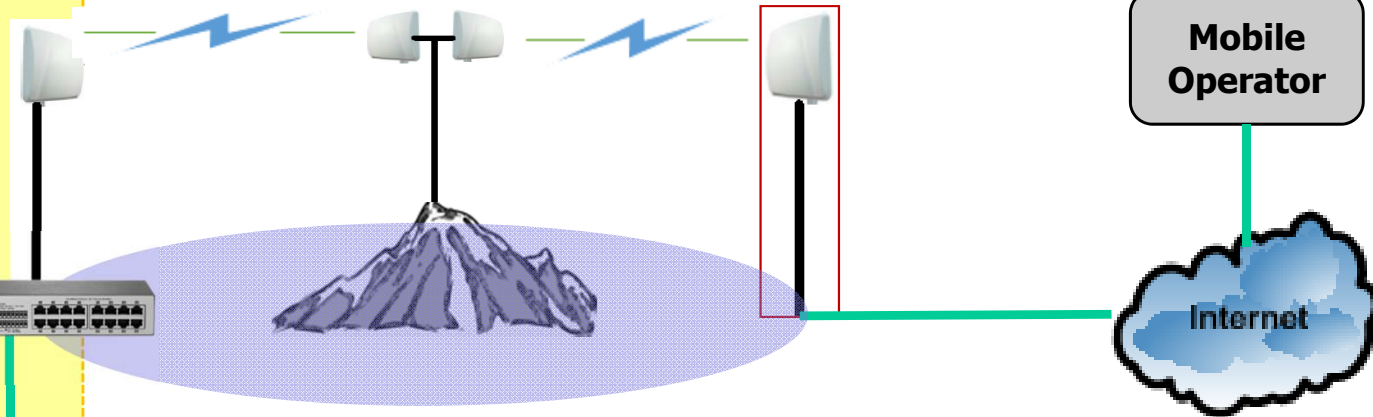


WiFi Router

Wi-Fi Signal



Point-to-Point Wireless



เสาทวนสัญญาณระหว่างทาง



เสาทวนสัญญาณระหว่างทาง



เสาทวนสัญญาณปลายทาง (รร.)

Solar Energy System

SOLAR PANEL SYSTEM



DC



~AC

COMM.



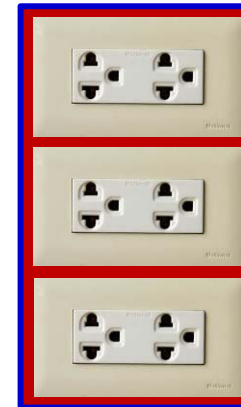
BATTERY BANK



โรงเรียน



Smart Outlet

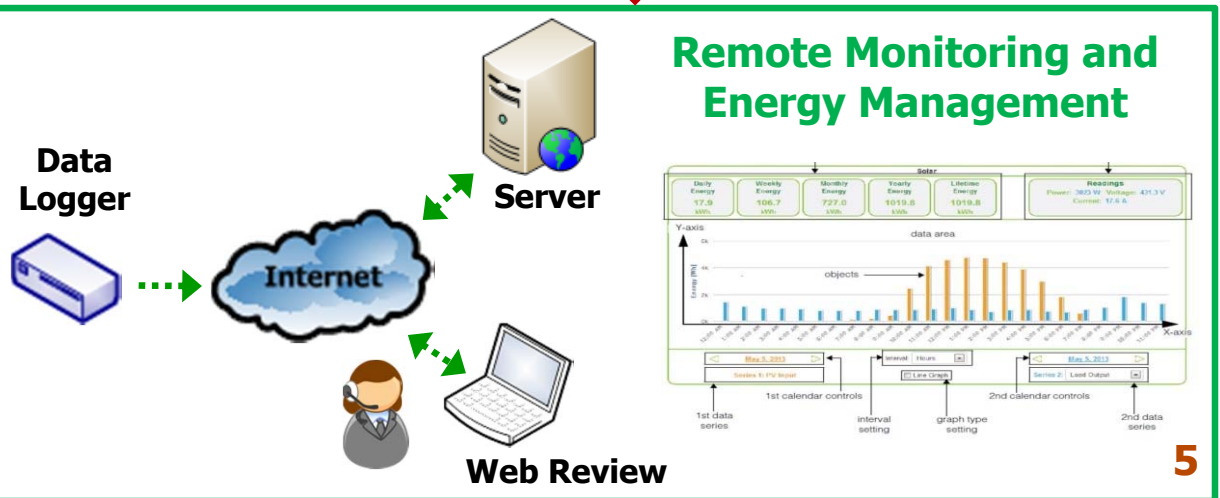


AC LOAD APPLICATIONS



Control

Remote Monitoring and Energy Management



ICT Classroom



Sustainability

- System Operation and Maintenance
 - Broadband Internet and Mobile → Mobile Operator
 - Solar Energy → PEA (Provincial Electricity Authority)
 - Computer and eLearning system → School with change agent
- Financial
 - Government (Ministry of Digital Economy)
 - School Budget, Marginalized School Foundation
 - Mobile operator, PEA
 - USO fund

Conclusion

- Infrastructure
 - ICT and Mobile phone
 - eLearning system
 - Hybrid solar energy
- Mobile operator and PEA provide the full system operation support
- Impact
 - Reduce the digital divide
 - Better education and better health service
- Key to success
 - Commitment, support from all stakeholder
 - Full collaboration of all parties