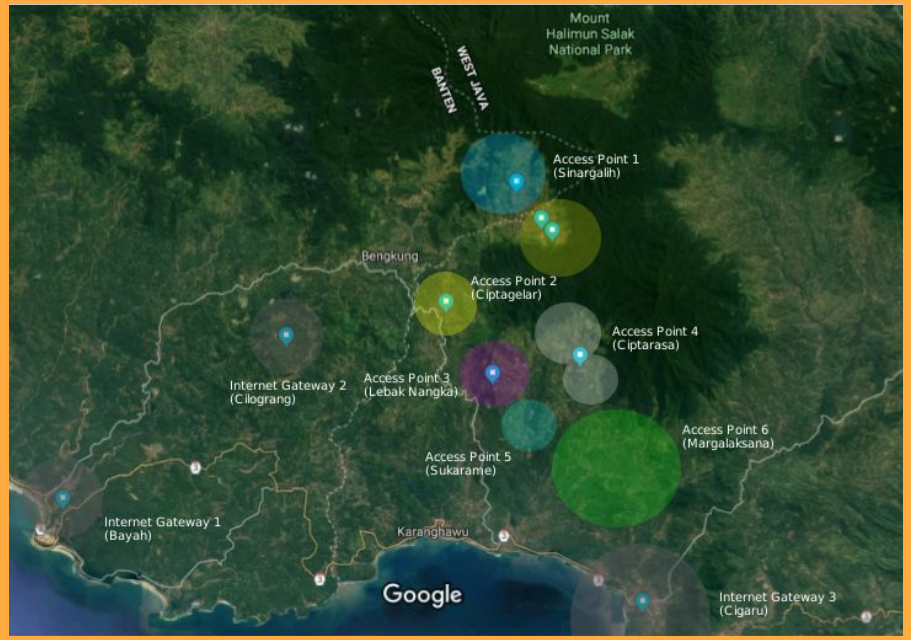
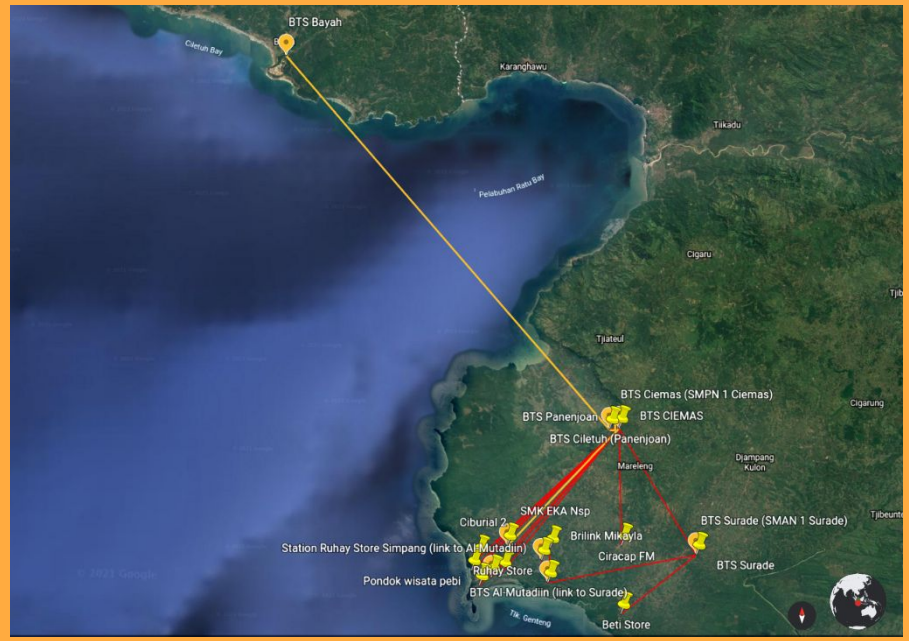
Lesson Learned From The School of Community Networks Indonesia

Journey Towards Meaningful Connectivity: Exploring Value-Added Services of Community Networks | Common Room Networks Foundation | 16 August 2023

CN Pilot Project Development





Pilot projects & prototyping for CN infrastructure development, management & utilization was developed in Ciptagelar Indigenous Community region in mid-2019 and Ciracap sub-district by the end of 2020. Both are located in Sukabumi Regency, which is located in the southern part of West Java Province. Although the project was not designed to engage with COVID-19 response, CN pilot projects in these 2 regions are also engage in the pandemic response.

Community Networks?

Legal

Safe

Affordable

Meaningful

Community-Based
Internet Infrastructure

5L

Low Tech

Local
Support

Low Energy

Low Learning
Curve

Low
Maintenance

Summary of School of Community Networks Activities in Indonesia 2021 - 2023

TRAINING & CAPACITY BUILDING

- 2x Training of Trainers (ToT);
- 21 Onsite Training in 9 SCN Project Locations.

Participants:
Female: 158
Male: 275

TRAINING CONTENT

- Technical Training: 52,7%
- Digital Literacy & Internet Utilization: 42,3%

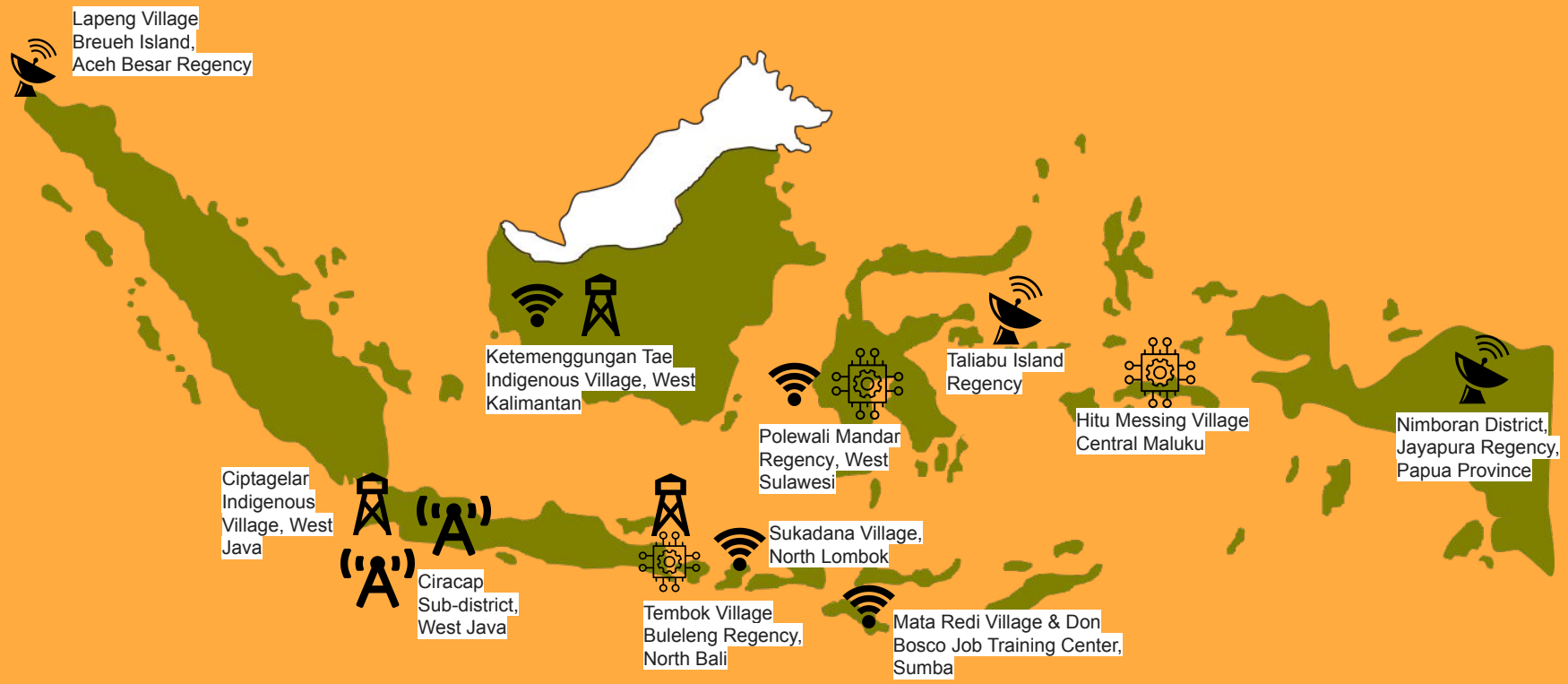
CN INFRASTRUCTURE DEVELOPMENT IN RURAL AREAS

- 3 Unit of VSAT Access Points;
- 3 Unit of Micro Internet Infrastructures;
- 1 Early Stage of CN Infrastructure Development;
- 1 Advanced Stage of CN Infrastructure;
- 1 Village Government Service Application.

RESEARCH & DEVELOPMENT

- 3 Unit of Bamboo Tower in 3 Different Locations;
- 2 Unit of IoT Prototype For Fisheries in 2 Different Locations.

Community Networks Infrastructure Development



VSAT Based Infrastructure

GSM Based Infrastructure

Advanced Stage CN Infrastructure Development

Bamboo Tower Prototyping & Development

IoT Sensor Prototyping & Government Service Application

Developing Support Ecosystem & Multi-stakeholder Collaboration

Common Room has consistently worked towards fostering communication, coordination, and multi-stakeholder cooperation, aiming to create a strong support ecosystem to encourages CN development in Indonesia. One of the flagship activities is the Rural ICT Camp, an annual event that was initially conducted from Ciptagelar indigenous village in hybrid format in 2020 during COVID-19 pandemic outbreak. The Rural ICT Camp 2022 was organized in Tembok Village, Buleleng Regency, Bali Province.

The art of collaboration with local government and authorities to empower local communities.

SCN Training In Nimboran District, Jayapura Regency

Local adaptation to match technical needs and challenges to address diverse geographical and social context.

SCN Training In Pulo Aceh, Aceh Besar Regency, Aceh Province

Technology transfer in rural communities cannot happen in a rush. It requires a gradual process with hands-on learning and human-centered approach.

SCN Training In Sukadana Village, North Lombok Regency

Internet technology is not a rocket science. But it still requires a specific approach and training techniques when it comes to capacity building for local communities that have never interacted with computers and digital technology.

SCN Training In Mata Redi Village Central Sumba Regency

SCN Training In Tembok Village, Bali Province

Acceleration can occur only through collaboration with visionary village governments that possess the knowledge to integrate CN infrastructure development into village development and innovation.

SCN Training In Polewali Mandar Regency, West Sulawesi Province

Twelve villages in Polewali Mandar regency are committed to engage in developing human resources for CN infrastructure development and digital literacy. Three of these villages (Lapeo, Laliko, and Padang Timur) are partnering with Common Room to organize Rural ICT Camp 2023. This collaboration elaborates various village potentials such as community empowerment, culture, ecotourism, small businesses, Smart Village initiatives, and more.

SCN Training In Ciracap District, Sukabumi Regency West Java Province

When you are seriously managing internet services for the community as a business process, you will discover your own internet networking techniques and services.

Explore the opportunity to foster partnerships with government entities at various levels, including village, district, and even ministry. Why not?

SCN Training In Bobong & Kilong Village, Taliabu Island Regency

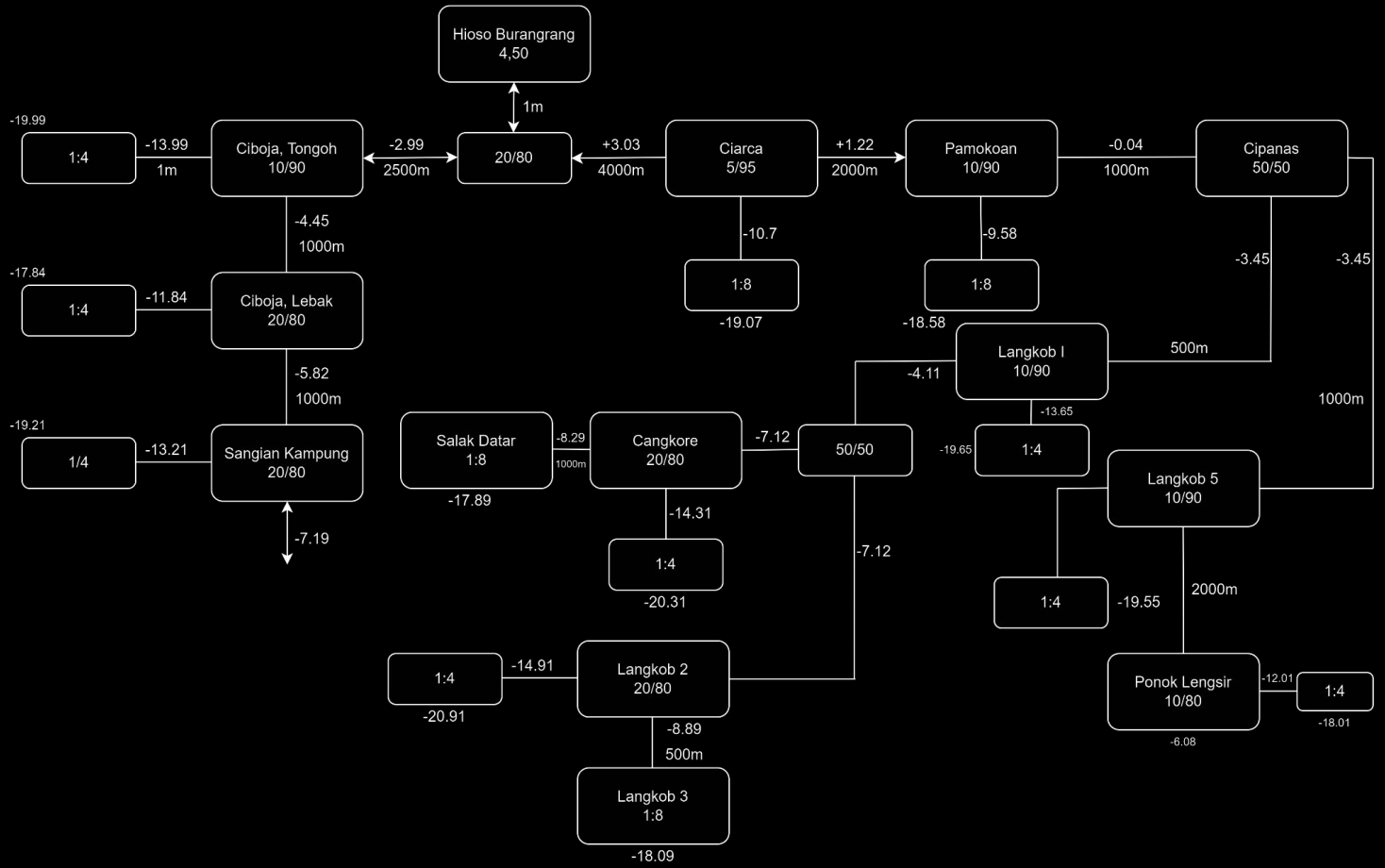
What can be learned from CN infrastructure that have been developed over 5 years in collaboration with indigenous community in Indonesia?

SCN Training In Ciptagelar Village, Sukabumi Regency West Java Province

Ciptagelar Hotspots In Numbers

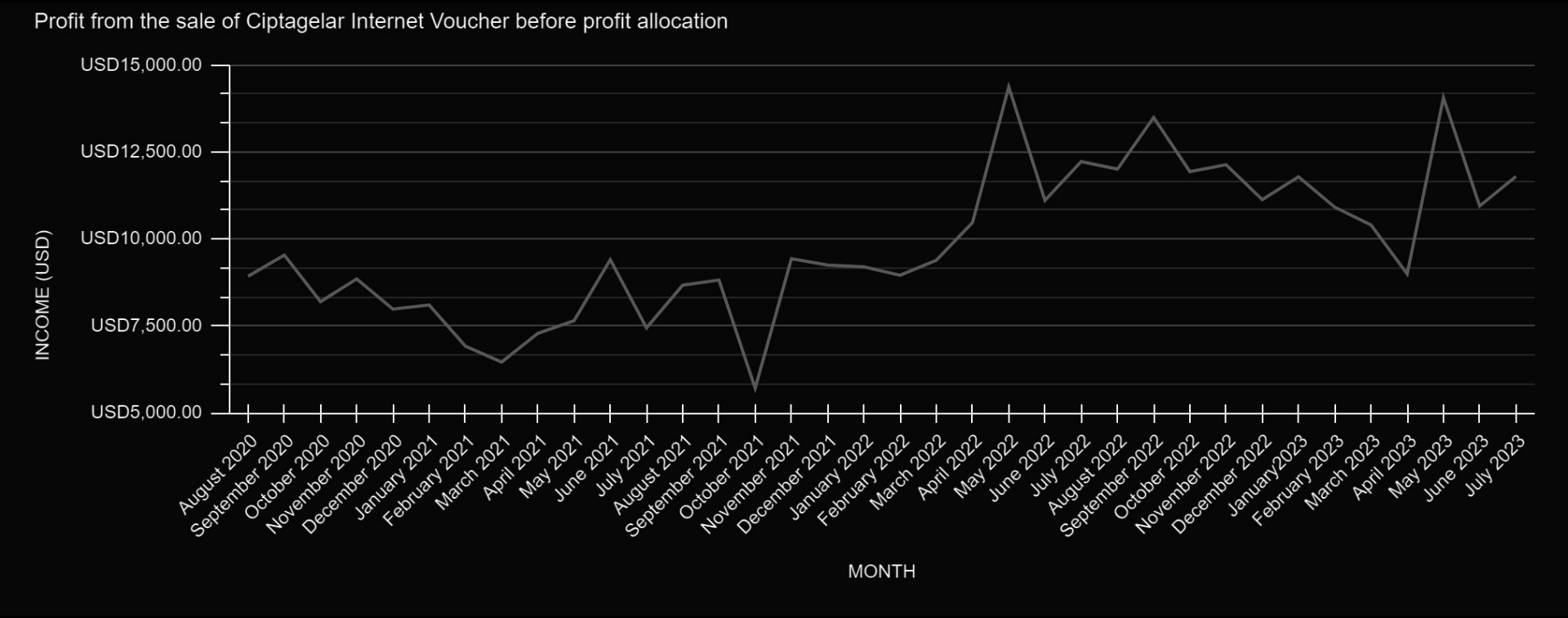
No.	Resources	Total
1.	Number of Hamlets Connected	37
2.	Number of Villages	11
3.	Number of Voucher Sales (in 1 year)	238.320
4.	Number of Voucher Agents	86
5.	Number of Public Wifi Hotspots	520
6.	Number of Private Wifi Hotspots	10
7.	Number of Technicians	10

Network Topology



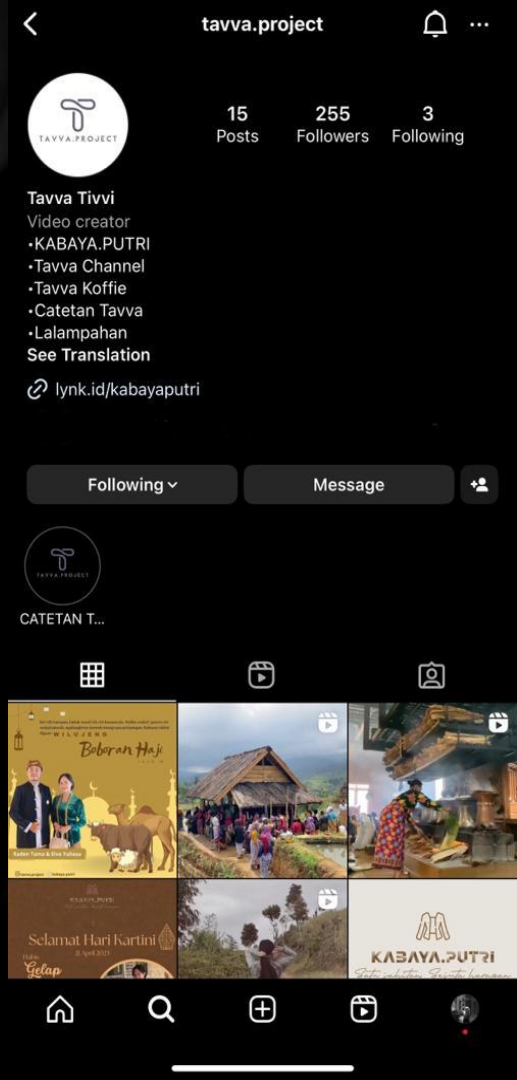
Gross Income in August 2020 - July 2023

(Total gross income: USD353.909.77)



Potentials and Risks

Potentials	Risks
• Business Development • Introduce Culture from Content Social Media • Facilitating The Information of Health Workers and Patient • Facilitating The Communication of Teachers and Students Outside The School • Make Transactions Easier • Easy Access to Information	• The Rise of Online Fraud • Trapped Online Loans • Game Addiction • Exposure to Pornography Content • Trapped Online Gambling • Online-based gender violence • Spread of negative, misinformation and disinformation content



Value Added Services

- Increase the capacity of the technician Ciptagelar Hotspot;
- Routine monitoring on the installed devices twice a month in each hamlet;
- Maintenance and repair damaged device rapidly;
- Peer to peer training for School of Community Networks member in Ciptagelar Hotspot Basecamp in Burangrang (will open classes soon for the general public who want to learn);
- Free internet access for teachers who will upload basic education data (DAPODIK);
- Podcast and local content workshop;
- Workshop and training on documentation of traditional knowledge and technology in Ciptagelar indigenous community (local content);
- Workshop on the management and administration of community-based internet infrastructure;
- Workshop and sharing session on healthy and safe use of the internet.

SCN Training In Tae Indigenous Village, Sanggau Regency West Kalimantan

Cultural potential of indigenous communities: the development of community networks based on strong cultural values and the utilization of various local potentials in the development of both internet infrastructure and its utilization.

CN Infrastructure In Tae Indigenous Village, Sanggau Regency, West Kalimantan

Struggle / Obstacles

- **Diverse learning curves and varied geographical challenges** are encountered when developing technical aspects.
- There is a **gap in local leadership**, diverse social and cultural support for inclusive participation, and a **lack of capacity** from local and national governments **to integrate** CN into **government policy**, which **affects the sustainability** of the program.
- The CN initiative encompasses diverse components, including policy & regulation, passive infrastructure, brainware (human resources), social economics resources, and many more. **An agile and adaptive program fund** management is required, with co-financing and **flexible funding support**.

General Recommendation

- There is **no ‘one policy fits for all’**, CN needs to be iterate & context specific by nature in diverse geographical & socio-cultural background.
- **Human Centered approach** to develop CN and requires gradual process & hands-on learning by design.
- **The strategy for developing the long-term program** extends over at least 3 years. Broadly, it is structured into 3 phases: (1) A period focused on improving technical skills and establishing micro-internet network units, (2) Managing services and advancing the network, and (3) Harnessing the internet for the benefit of the community.
- **Multi funding support** including local crowdfunding, government budgets, corporate social responsibility (CSR), blended project grants, and more.

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ictwatch.id

RelawanTIK

Asosiasi Penyelenggara Jasa Internet Indonesia

UK International Development

Partnership | Progress | P

APC Association for Progressive Communications

isif asia

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Towards Sustainability Community Network

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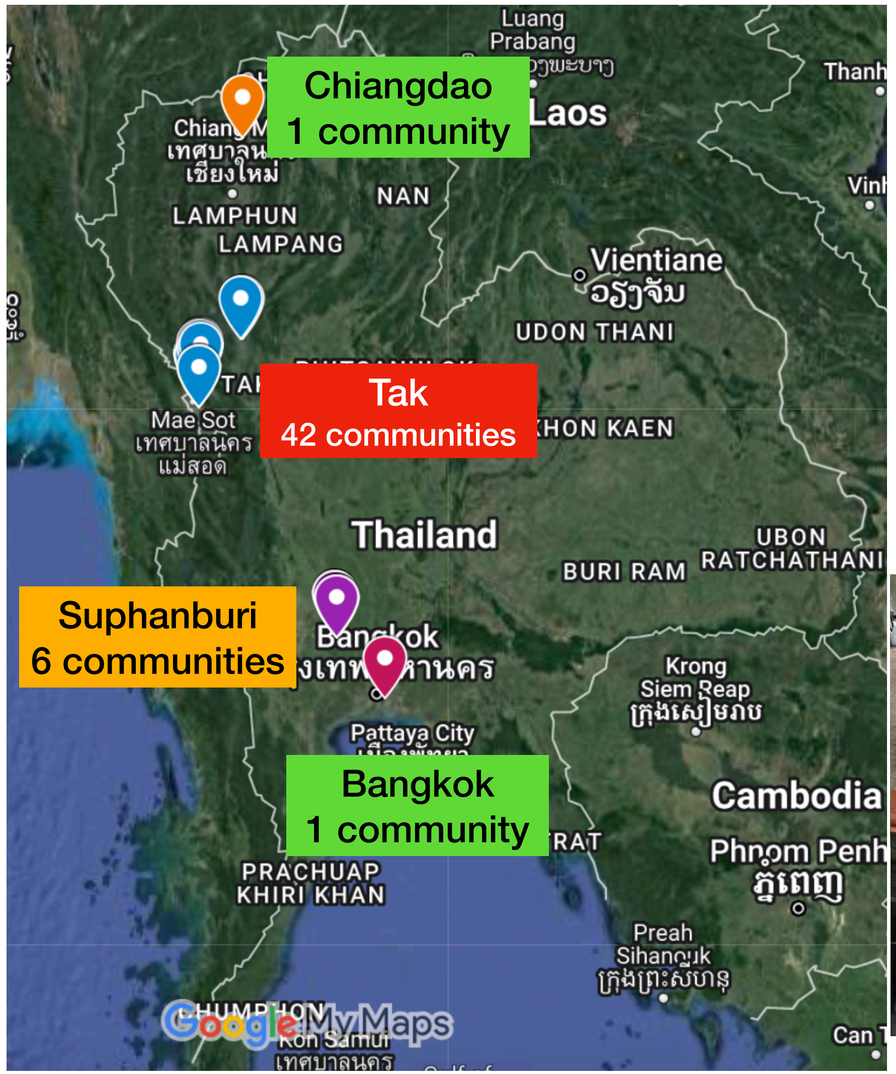

As of July 2023

50 Active clusters/communities

500+ Households

100+ Moved to commercial ISPs

Bangkok Community

Tak Community

Suphanburi Community

Chiangdao Community

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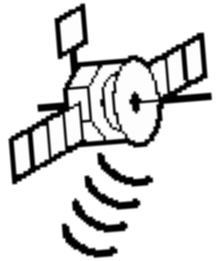
Technology

DUMBONET I (December 2006)

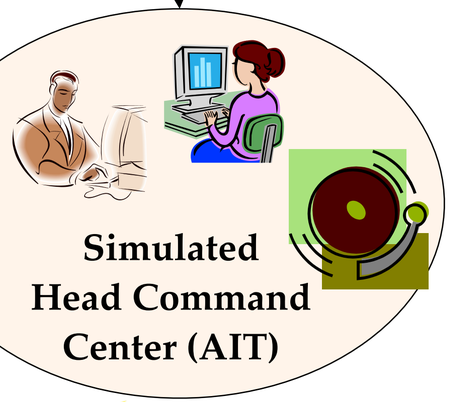


IP Star Satellit

IP Star Uplin

IP Star Gatewa

Terrestria l

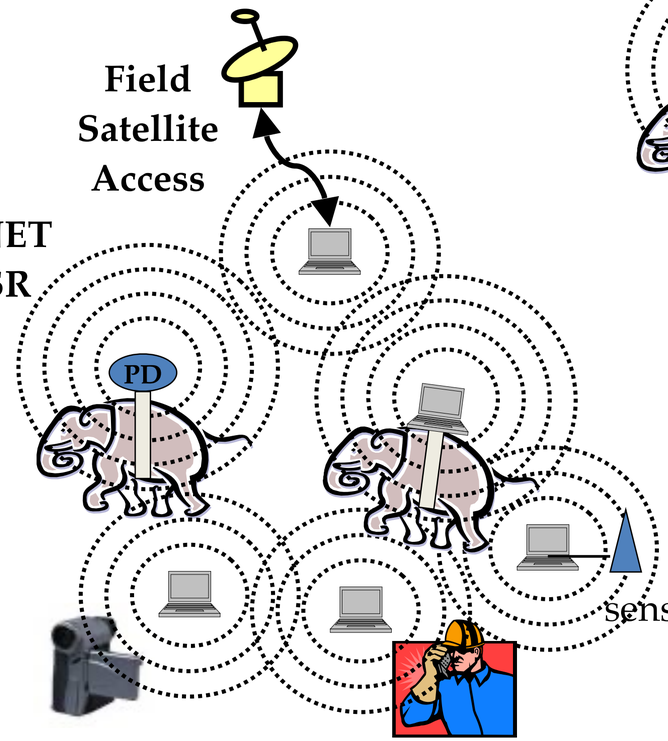


Simulated Head Command Center (AIT)

Field Satellite Access

MANET OLSR

PD



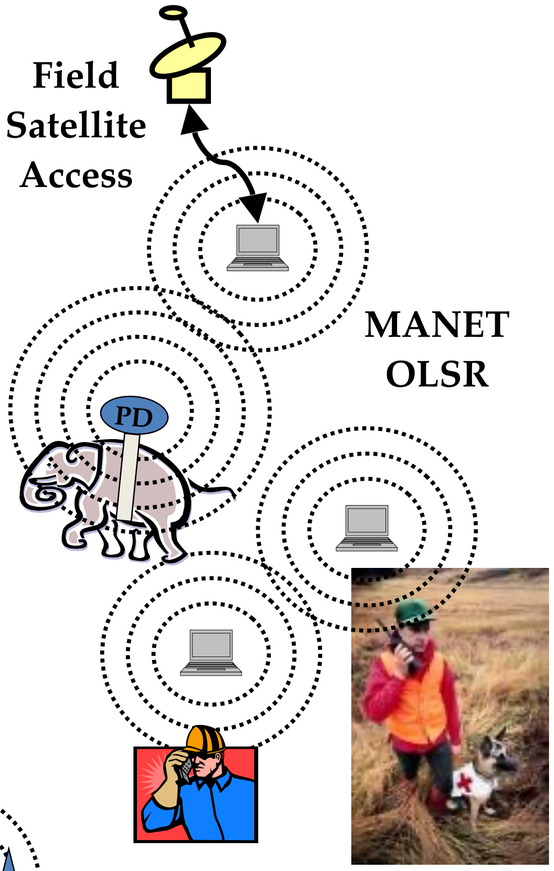
senso

Simulated Disaster Area 1

Field Satellite Access

MANET OLSR

PD



Simulated Disaster Area 2

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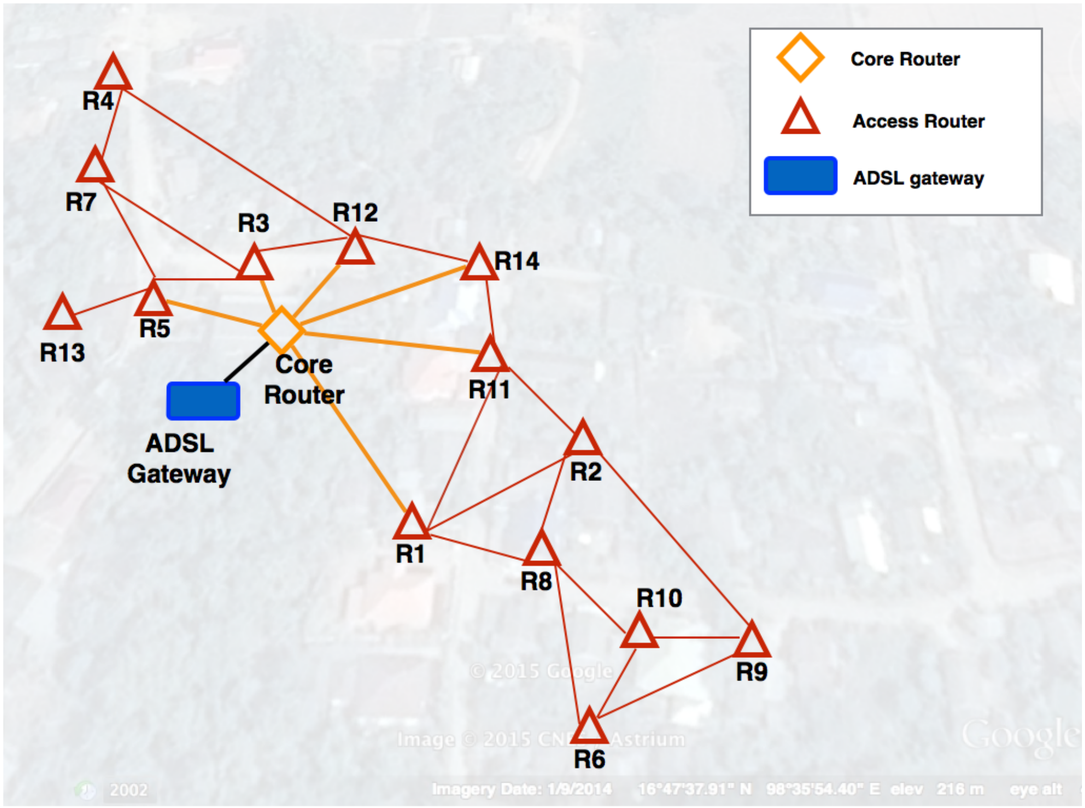
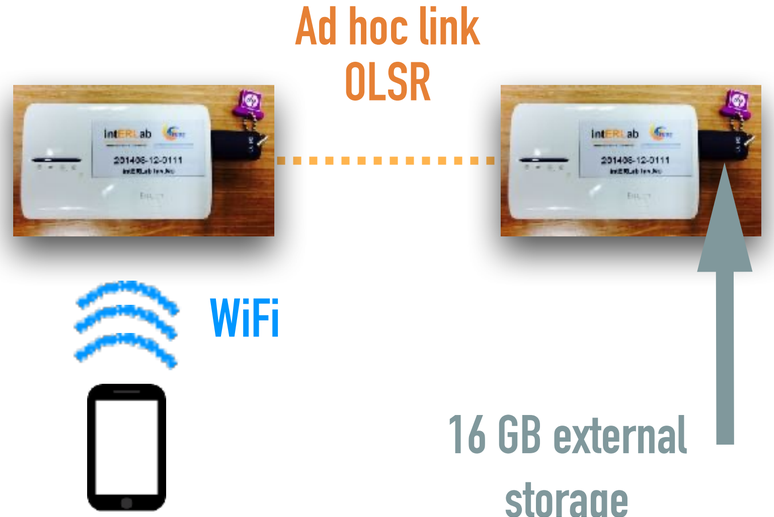
TakNet = DUMBO as CWMN in 2013





14 access routers (TPlink MR 3040)
1 core router (Unifi UAP)
OpenWrt, Attitude Adjustment 12.04

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SUSTAINABILITY

TakNet Model 2016

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ADDED VALUES

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Applications on Net2Home

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Resource sharing system

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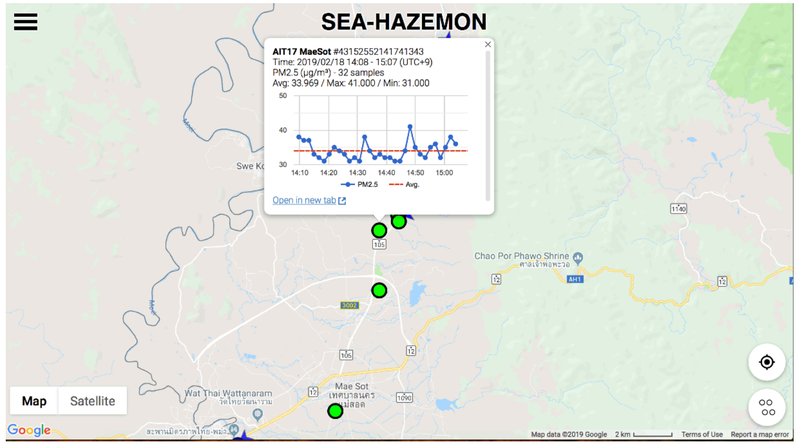
Online Community Market



www.hazemon.in.th

SMART COMMUNITY

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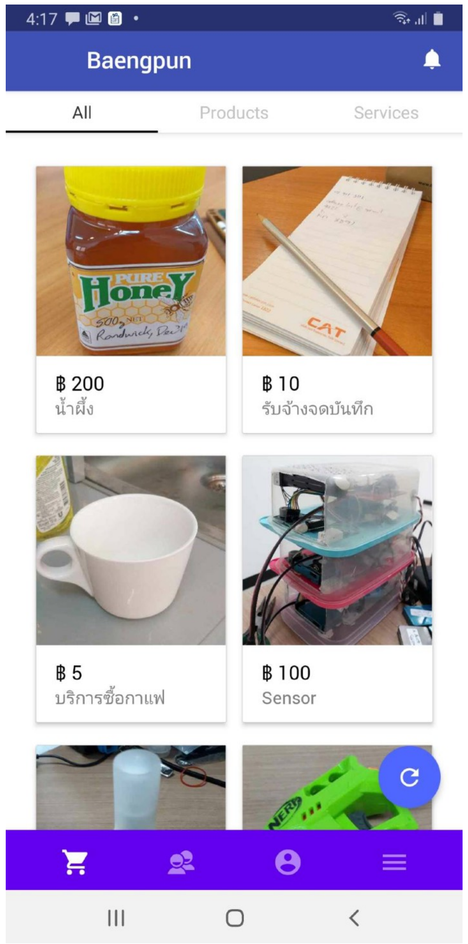

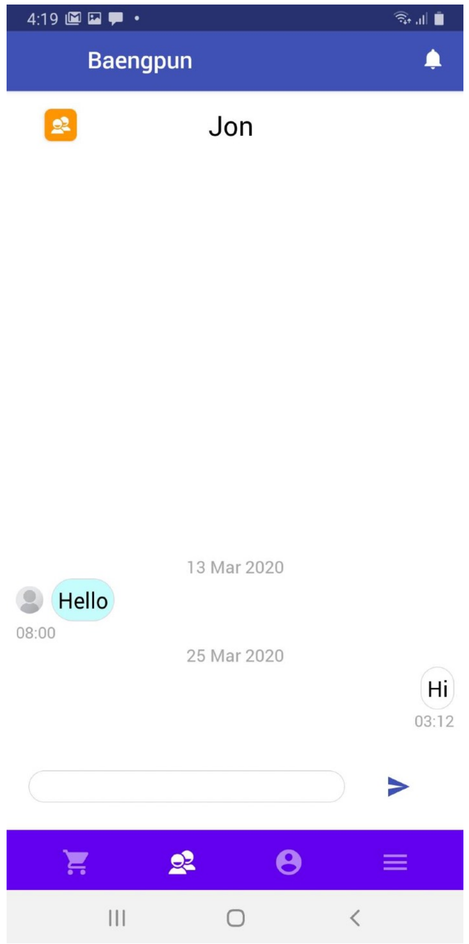

User Friendly
Easy to use with local language support

MarketPlace
Barter trades products and service among community members

Chat
Interactive chatting between producers and consumers

Transaction
Using credit (Cashless) for trading products & Transaction is encrypted

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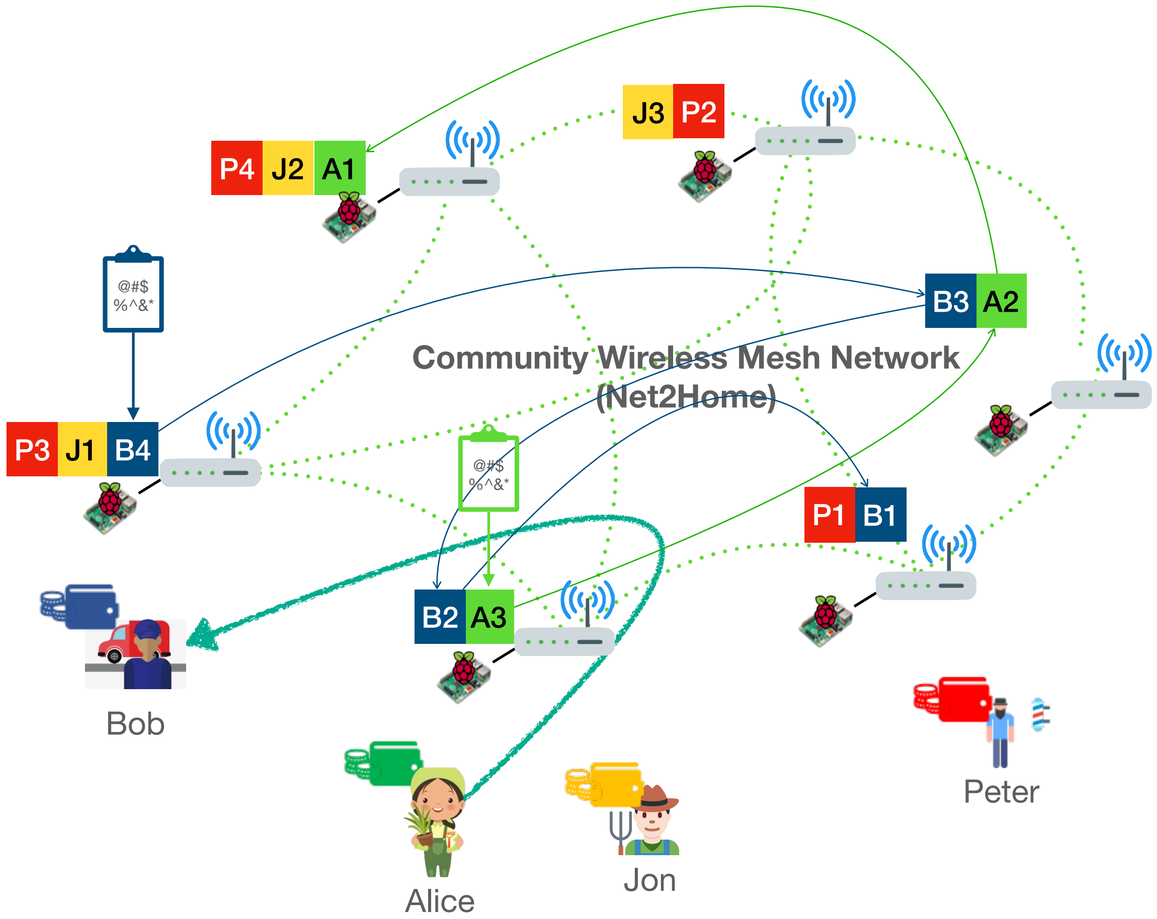

Distributed Ledger Service

- Private Blockchain system on community internet network to withstand unstable connection conditions
- A platform for the exchange of products and services within the community.
- Highly secure distributed transaction storage

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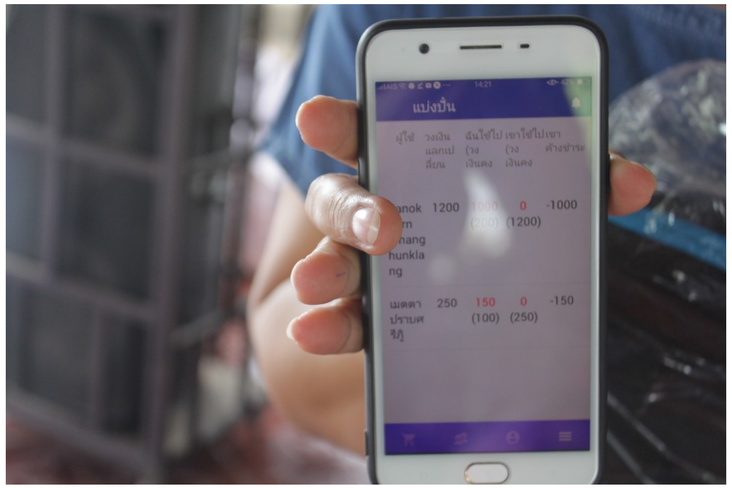

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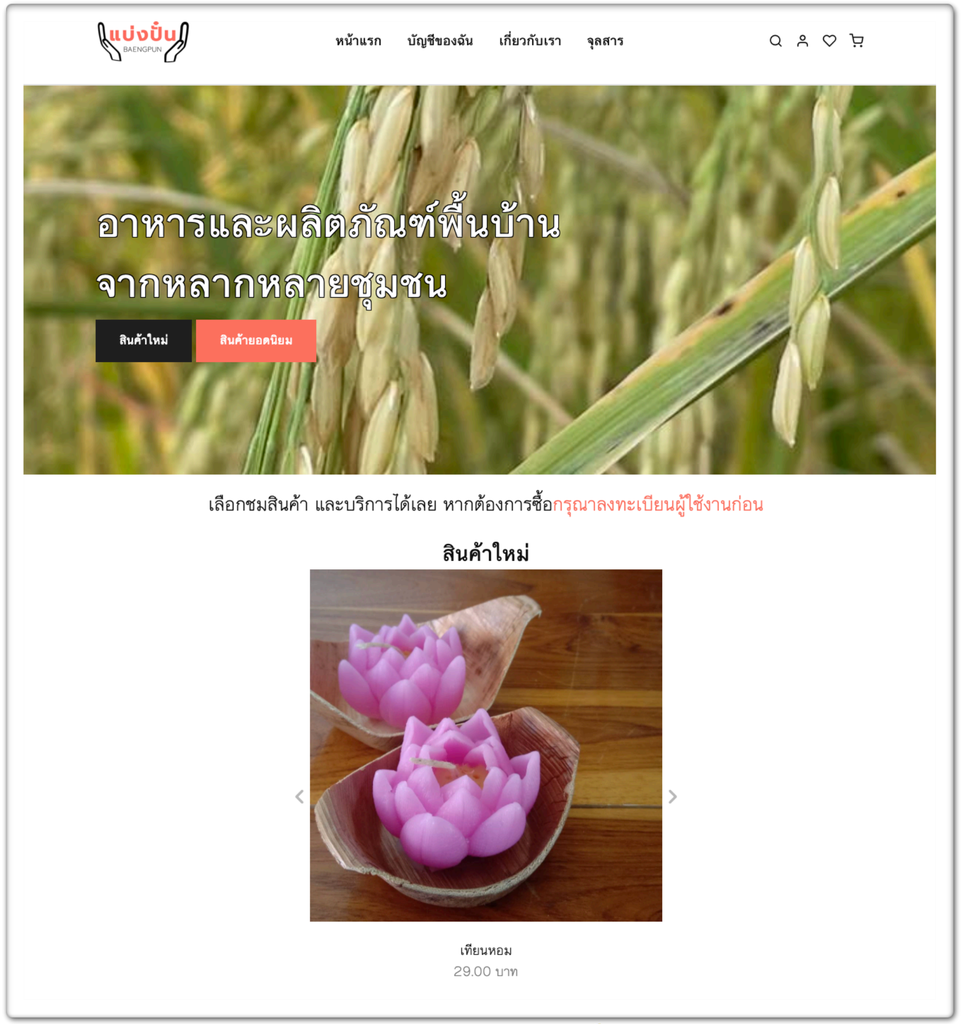

Online Community Market

- Connect Community market to outside
- Create a representative store or Proxy to contact and trade with members outside the community.

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Applications on Net2Home

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งานฝีมือ
ไม่ได้รับการจัดอันดับ

เป๋ากระต่ายน่ารักๆ

น้องกระต่ายน่ารัก ในกระเป๋ามีกระต่าย 3 ชิ้น
กระต่ายสามารถนำไปตั้งโชว์หรือบริหารกล้ามเนื้อที่มือได้ ระบบเลือดไหลเวียนได้ดี กระเป๋าปิดด้วยซิบ
ราคา 199 บาท

199.00 บาท (มีสินค้า)

ร้านค้าจะยืนยันคำสั่งซื้อภายใน 2 วัน

หมายเหตุถึงผู้ขาย

หมายเหตุถึงผู้ขาย

1 | ใส่รถเข็น | รายการโปรด

ร้านค้านี้รองรับการชำระเงินโดยตรงกับร้านค้า

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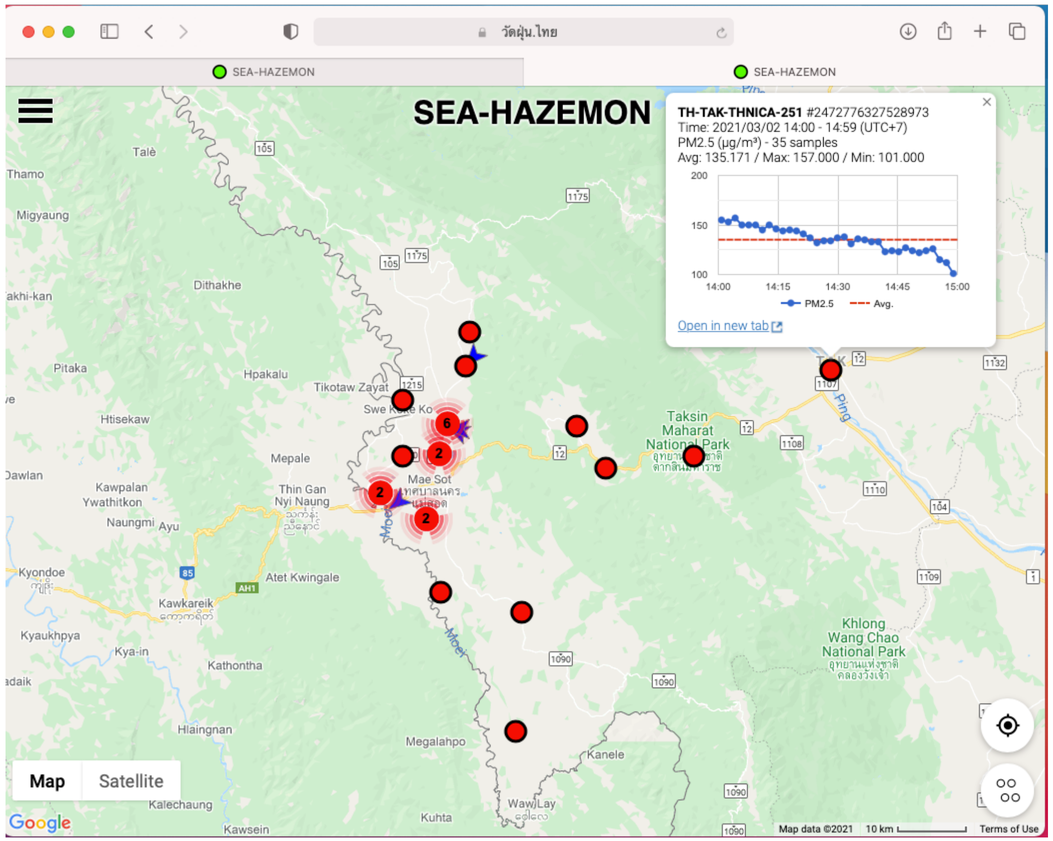
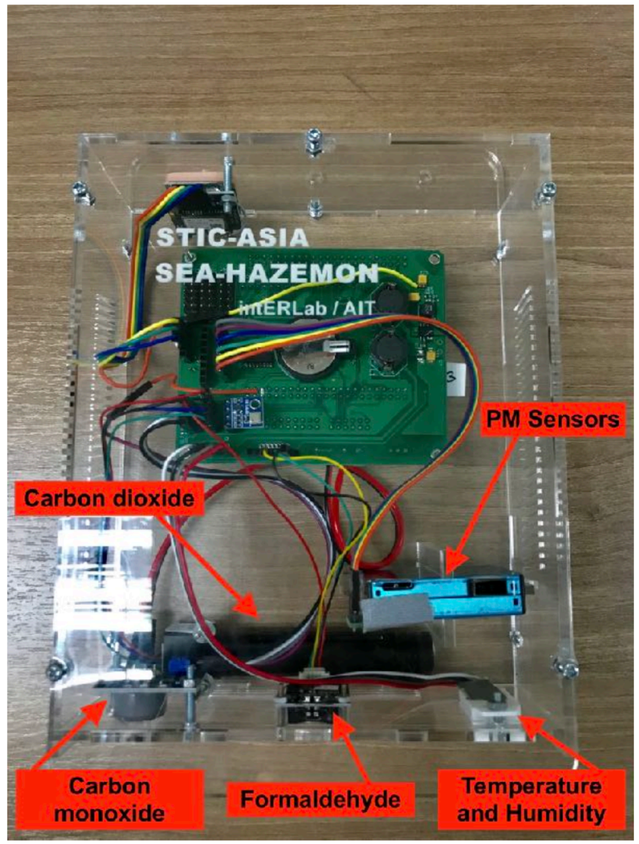
IoT Smart Village with Real Time Air Quality Monitoring Platform





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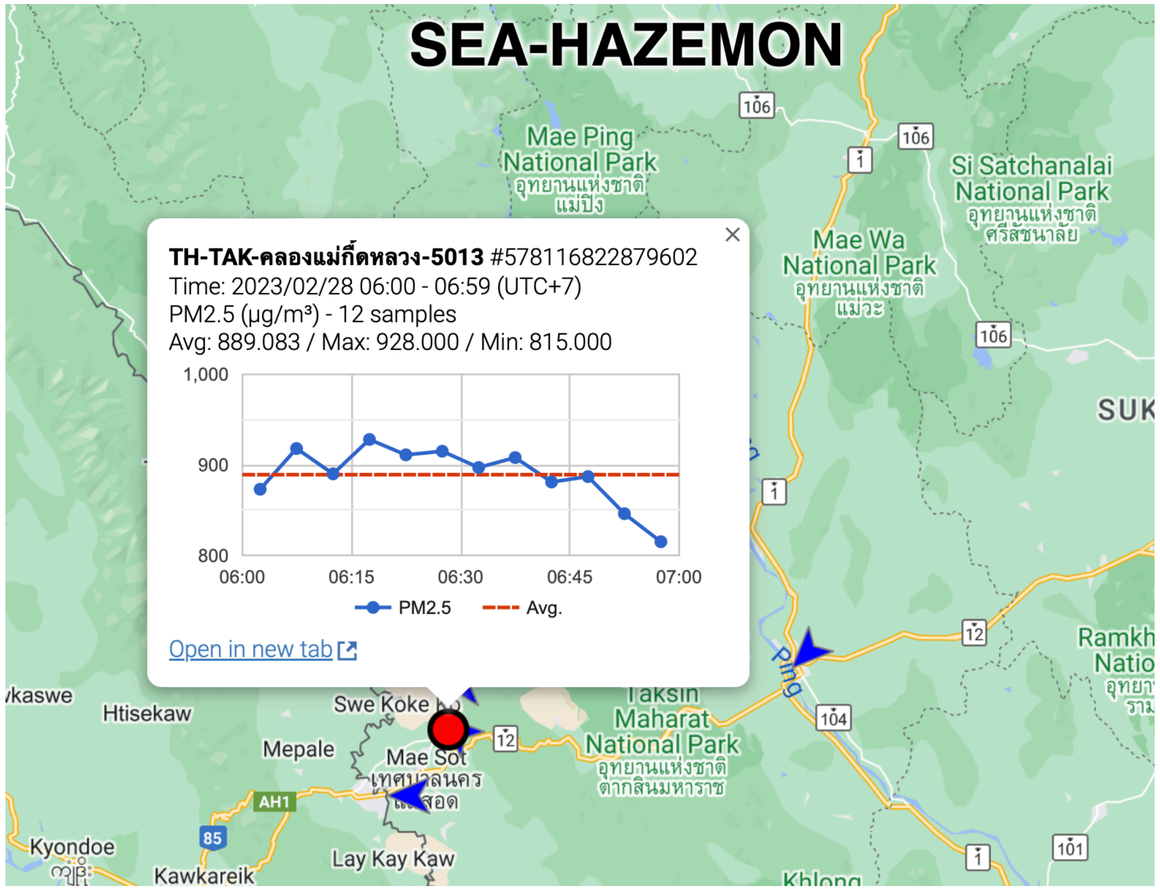

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Next...

SMART COMMUNITY

Focus on
Community Safety

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Local Services

Meaningful Connectivity from a Community-Oriented Perspective

Brief:

- Intro
- Beyond connectivity
- Examples
- Takeaways

Intro

For the last 5 years, LOCNET has been working on:

- creating an enabling environment for community networks,
- facilitating training and mentorship projects for communities,
- and participating in enabling policy and regulation activities.
- working on gender and women's participation aspects.

In relation to value added services, The LocNet initiative works on local innovation for community networks, empowering grassroots communities to define and shape their own local services and digital technologies.

Also, as we went through a global pandemic, it has highlighted the importance of community-centered connectivity and the need for local services and digital technologies that meet the specific needs and priorities of grassroots communities.

After these last 5 years of experience, we have been working on reflecting and articulating the work done around local innovation for community networks.

We will explore of local services and digital technologies for community-centered connectivity, going beyond basic connectivity and providing meaningful benefits to the community.

Beyond Connectivity

Defining meaningful connectivity from a community-oriented perspective means...

centering the *local definition of meaning* as the starting point.

Shortcomings of the current meaningful connectivity definitions.

- Top-Down Approach
- Lack of Community Input
- Narrow Focus on Technical Aspects

- Ignoring Local Production of Knowledge
- Lack of Recognition of Indirect Contributions

Meaningful Connectivity from a Community-Oriented Perspective

Grassroots communities have a strong understanding of what is meaningful or valuable to them, and their local definition of meaning should be the starting point.

Meaningful connectivity from a community-oriented perspective involves going beyond basic connectivity and providing meaningful benefits to the community through local services and digital technologies that are designed to meet the specific needs and priorities of grassroots communities.

It also involves valuing the local production of knowledge, understandings of the world, and ways of life in the communities.

The community-oriented approach emphasizes community participation, local definitions of meaning, and the holistic development of local services and digital technologies.

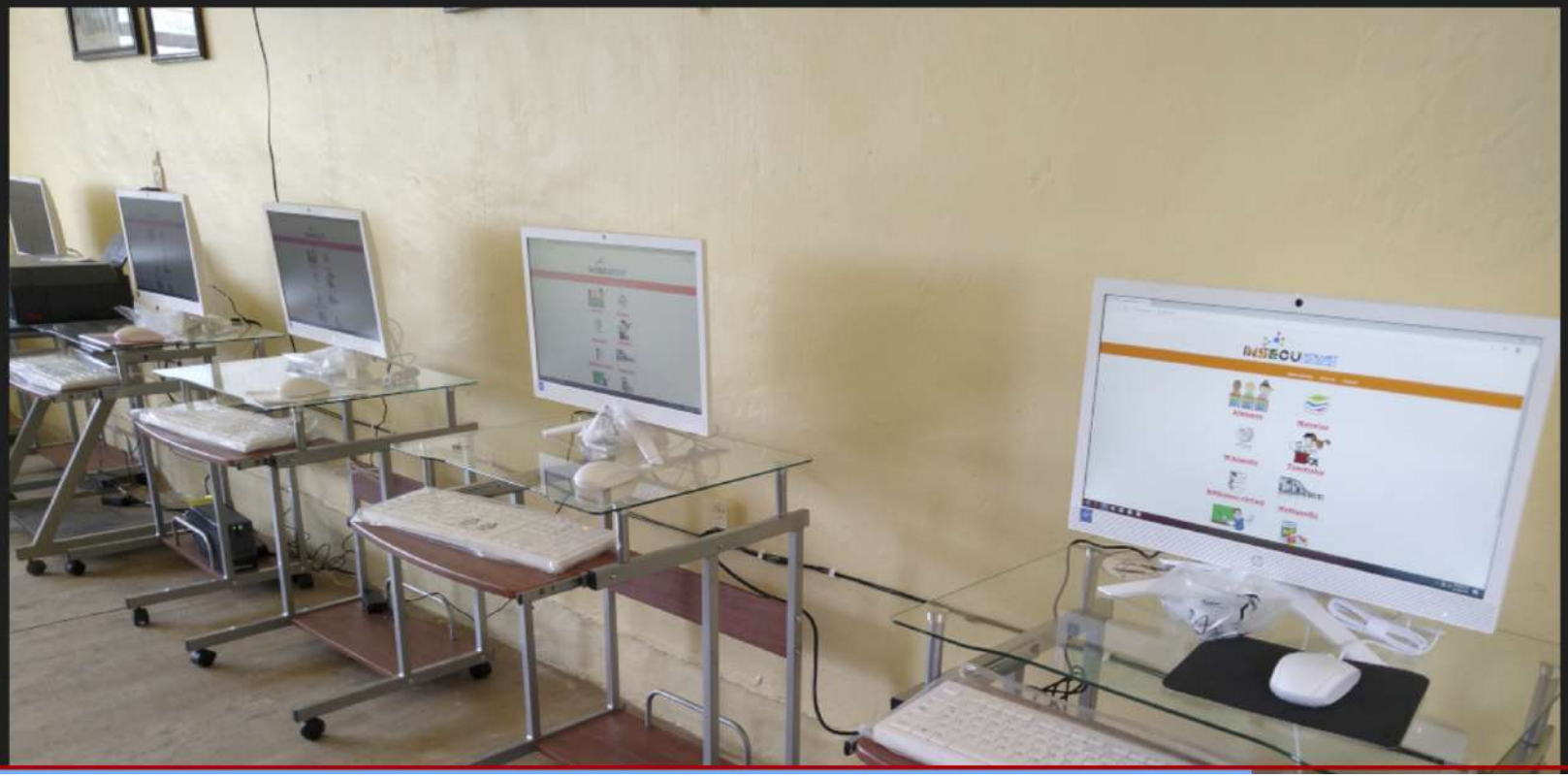
Local services and examples from Latin America

Document and share existing knowledge and practices of the community for the local benefit

- MoinhoMesh, Moinho, Brazil

Providing information and learning formats that were created outside of the community and were not available before

- Jnoptik Intrabach, Chiapas, Mexico



Creation of community content, new communication formats and other tools

- Social exchanges and time banks
- Colnodo, Colombia

Meaningful extensions, federations and cooperations with other actors - and their services

Some takeaways

Community-centered connectivity requires going beyond basic connectivity and providing meaningful benefits to the community through local services and digital technologies that are designed to meet the specific needs and priorities of grassroots communities.

Value will not come because of outside infrastructure coming in to deliver connectivity for the sake of consumerism ...

... Value and meaning comes from the communities themselves and through their own agency.

Grassroots communities have a strong understanding of what is meaningful or of high value to them, and those with a community-oriented approach are centering their local definition of meaning as the starting point.

The Latin America cases exemplify the importance of local services and digital technologies in meeting the specific needs and priorities of grassroots communities.

Thank you!

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