From Telecentres, Community Networks To Sustainable Smart Villages and Smart Islands:

Case Studies from Asia and the Pacific

Presenter: Dr Daniel McFarlane

The Smart Islands and Smart Villages Approach

Broadband connectivity accessible to remote islands

Enhanced affordability

Digital skills enhanced

Wide range of digital service delivered

Evidence-based, human-rights based, future-proof (integrated emerging technology), partnership-driven, whole-of-government approach

Limited access to broadband and digital services in remote islands / villages

Limited access to broadband connectivity

Insufficient affordability

Insufficient digital skills

Limited digital services (access, scale and scope)

Telecentres → Community Networks → Smart Villages & Smart Islands

Telecentres

Objective:
- Provide Internet Access

Problems:
- Lack of community engagement,
- Lack of awareness
- Lack of relevance

Community Networks

Objective:
- Provide Internet Access
- Engage Communities

Problems:
- Adverse regulatory environment

Smart Villages & Smart Islands

Objective:
- Provide access and services
- Engage communities
- Whole-of-Government Approach

Rationale of the Study

Telecentres and community networks precede Smart Island and Smart Village initiatives

They have experienced various sustainability challenges that are relevant to the Smart Islands and Smart Villages

Telecentres and community networks can provide valuable insights for creating sustainable Smart Islands and Smart Villages.

Methodology: A Step-by-Step Process

Conduct a literature review on telecentre and community network initiatives, focusing on sustainability issues

Development of a methodological framework for assessing the sustainability of connectivity initiatives

Identify and document case studies

Develop key learnings and recommendations for Smart Island and Smart Villages

SUSTAINABILITY DIMENSIONS

Environmental sustainability

The impact on the environment and the extent the initiative disrupts local ecosystems.

→ Energy use
→ E-waste
→ Impact on Environment

Financial sustainability

The ability to generate enough revenue to ensure the initiatives' continued existence.

→ Business Model
→ Relationship to for-Profit Operators
→ Network Wealth for All

Organisational sustainability

The organisational capacity to deliver services reliably and the extent to which organisational structures are empowering participants.

→ Infrastructure
→ Service Delivery

Socio-cultural sustainability

The ability to foster social cohesion and a common identity, in order to ensure the continued participation of key actors and stakeholders.

→ Governance
→ Data Ownership and Control
→ Multi-stakeholder Engagement

Policy sustainability

The wider political and policy framework and whether they are enabling or constricting the initiative.

Operational sustainability

The capacity of the initiative to continually offer high-quality and relevant services to the community.

Selection of Case Studies

Case studies selected to reflect the diversity of initiatives throughout Asia and Pacific.

The case studies exhibit a diversity of strengths and weaknesses across the sustainability dimensions.

The selection was also determined by the availability and accessibility of data.

Case Studies

Community Networks	India:	Wireless for Communities (W4C)
		Gram Marg
	Thailand:	TakNet
	Indonesia:	Ungu Community-Based LTE Network
		Common Room Community Network
Telecentres	Vanuatu:	Computer Laboratory and Internet Community Centre (CLICC) in Vanuatu
	Papua New Guinea:	Kinect Network Telecentre
	Kiribati:	Community Telecentres
	Malaysia:	The Telecentre Program for Orang Asli (TPOA)

Insights from Community Network Case Studies

TakNet in Thailand shows how adaptability and flexibility in organisational models can enhance community network sustainability.

Ungu Community-based LTE Network in Indonesia demonstrates how creative use of technology can help community networks navigate various challenges.

The Common Room initiative demonstrates the potentially positive impact on indigenous communities and the spaces they inhabit.

Wireless for Communities (W4C) in India highlights the tremendous socioeconomic impact such initiatives can have on local communities.

Insights from Telecentre Case Studies

- **The TPOA in Malaysia** demonstrates the importance of the right technical solutions for the context and the integration of local communities.

- **The Telecentre programs in Kiribati, Vanuatu, and Papua New Guinea** highlight the benefits and challenges of government-initiated telecentre initiatives in remote areas. They show the importance of political commitment and community involvement.

- **Gram Marg in India** demonstrates that there are various models to provide sustainable connectivity in rural communities successfully.

Success Factors for Sustainable Connectivity Initiatives

Meaningful Internet Connectivity
- Providing relevant services
- Considering marginalised groups
- Integration of the local people and upskilling

Sustainable Financial and Organisational Models
- Multi-stakeholder Approach
- Adaptability of organisational & financial models

Reliable Connectivity Infrastructure
- Appropriate Technology

Key Enablers

Providing relevant services

- **Tailored services for local communities** have a significant impact on operational and socio-cultural sustainability.
- The relevance of services to local communities **improves livelihoods**, supports **local needs**, and boosts **local engagement**.
- In Chanderi where the W4C operates, connectivity combined with relevant services significantly improved local household incomes.
- Tailoring of services in the TPOA initiative enhanced **relevance and benefits for indigenous communities**.
- Community telecentres helped indigenous people recognition of ancestral land.

Considering Marginalised People

- **Addressing the needs of marginalized groups** and **cultural sensitivity** is critical for sustainability.
- The W4C initiative prioritized **empowering women** through connectivity.
- Empowerment of women in the W4C initiative **improved livelihoods** in the community.
- Emphasis on **gender equality** played a crucial role in socio-cultural sustainability.

Community Engagement and Training

- Successful **engagement with local community members** is beneficial to both the community and the sustainability of the project.

- A **presence in the community** that demonstrates the benefits of connectivity, such as the W4C digital resource centre, supports engagement.

- **Training the local community to operate, maintain, and extend the networks** supports community engagement, as demonstrated by the **TakNet** and **W4C** initiatives.

- The "**train-the-trainers**" approach of the **W4C Barefoot Engineers** is a prime example of a training approach that supports community engagement.

- **Village Entrepreneur models** such as those adopted by the **Gram Marg** initiative supports community engagement

Multi-Stakholder Approach

- **Local government** engagement and support can contribute to organizational sustainability (Eg. Gram Marg).

- **Private sector** integration can establish backhaul connectivity sustainably, increasing operational sustainability.

- **Social enterprises** can play a role in connectivity initiatives (TakNet in Thailand or the Ungu CoLTE network).

- **Academia** can support connectivity initiatives through **research** and **capacity-building activities**.

- Building **effective relationships** between actors is crucial.

Organisational & Financial Adaptivity

- **Flexibility** and **creativity** are important.
- **No single approach fits all situations**; different solutions may be needed for different contexts.
- Gram Marg initiative deployed **different models** for different communities.
- TakNet adapted its organisational and financial model to **changing circumstances** and growing networks.
- The Ungu CoLTE initiative **deployed innovative technical** solutions: established a data-only mobile network to increase operational sustainability while navigating regulatory challenges.

Appropriate Technology

- The choice of technology may be limited by regulatory challenges, but **the right technology must be appropriate for all sustainability dimensions** (not only policy).

- The virtual remote management system (VRMS) in the TPOA initiative in Malaysia enabled **organizationa**l sustainability by building an **interactive ecosystem** between the four communities with telecentres, other indigenous communities, telecentre managers, and university researchers.

- The **creative solution** of the CoLTE network in the Ungu community in Indonesia allowed the project to offer **better services** and increased **operational sustainability** while **addressing regulatory concerns**.

Thank you!

Contact: danielmcf@gmail.com