


# A Case for Private 4G Networks

A consideration for remote communities



“Country takes on city with access to world leading broadband” nbnco

- ▶ Should the urban Internet model be the default for the bush?
- ▶ Is it even achievable? Satellite will never equal fibre.
- ▶ Is there an alternative?

- 
- ▶ The Internet is organic
  - ▶ What's growing in your community network?

# A Remote Community Private Network

- ▶ A fully functional 4G LTE network serving 2000 residents over 260 Sq Kms
- ▶ Remote location requiring Satellite Backhaul
- ▶ Community owned and funded
- ▶ Built to support the local Indigenous Economy and Cultural Activities
- ▶ Specifically designed to attract people back to their land and increase resident population.

# A Remote Community Private Network

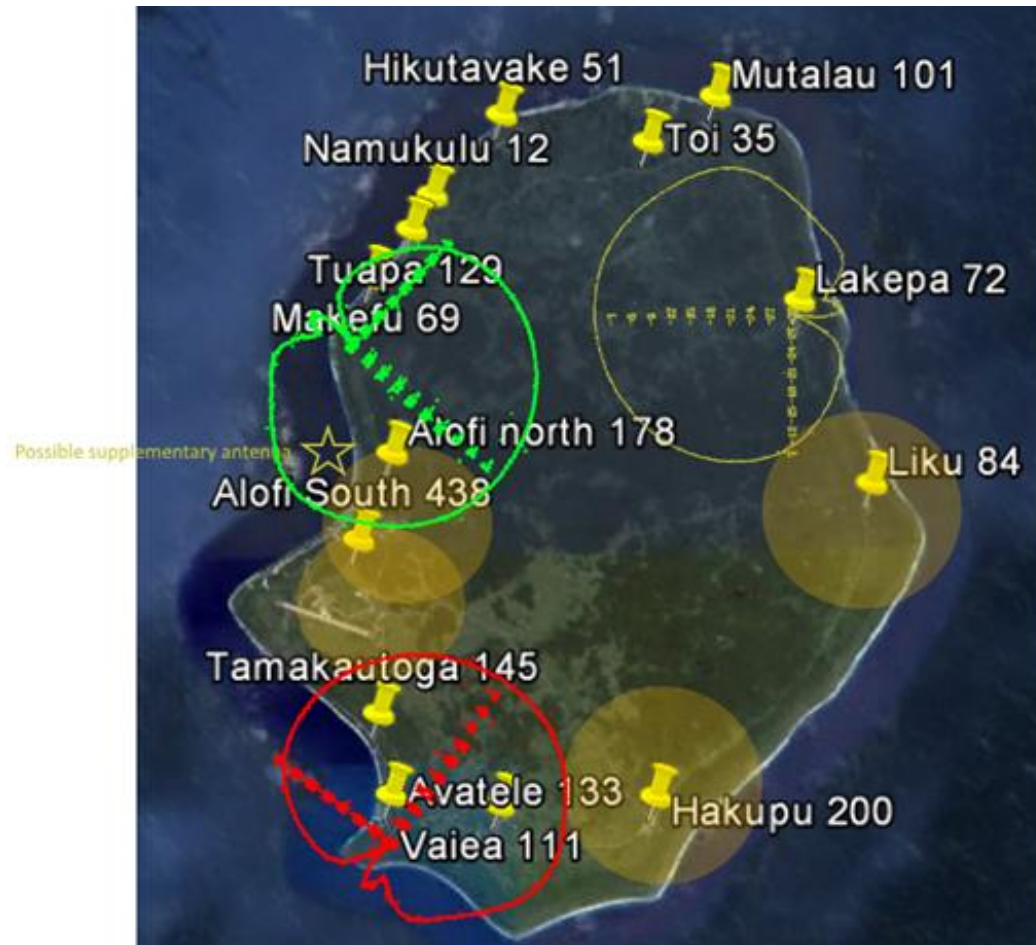
- ▶ On-net connections - free for specific applications
- ▶ Critical response alarms for travellers, cyclone warning etc.
- ▶ Local IPTV and PTT systems
- ▶ Capital Cost: \$1M - \$500 per subscriber
- ▶ \$100,000 P.A revenue from tourist subscriptions
- ▶ Tariff and usage policies set by local community, specifically to support the local economy

Who's doing this?

# Niue

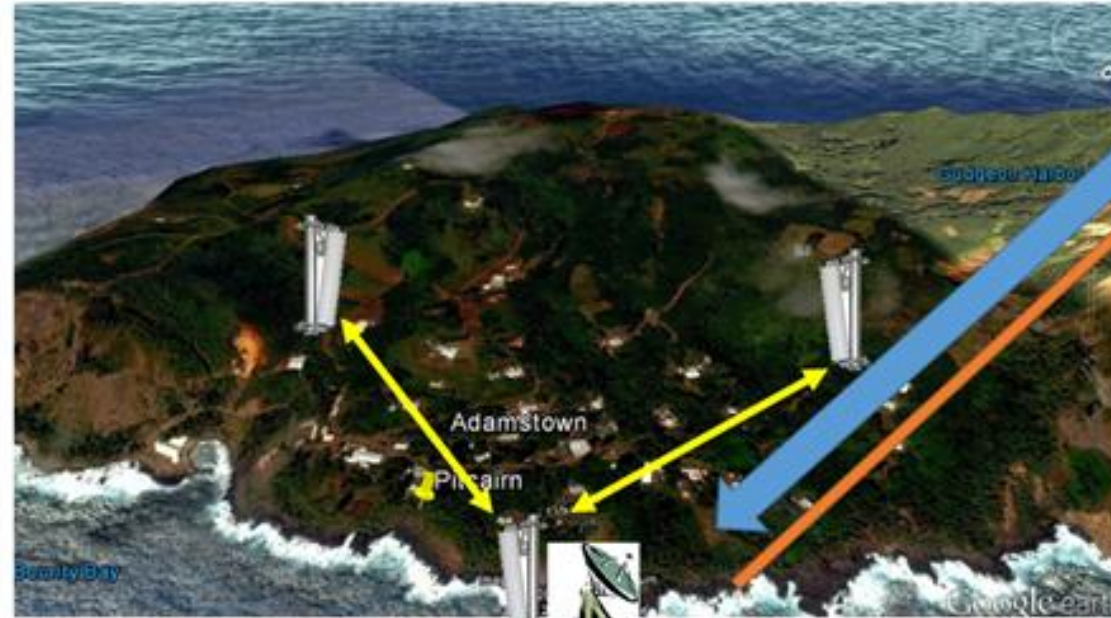
## First nationally ubiquitous VoLTE network

- 4 x 10W Cells
- 98% Island coverage
- 12 villages



# Pitcairn Island

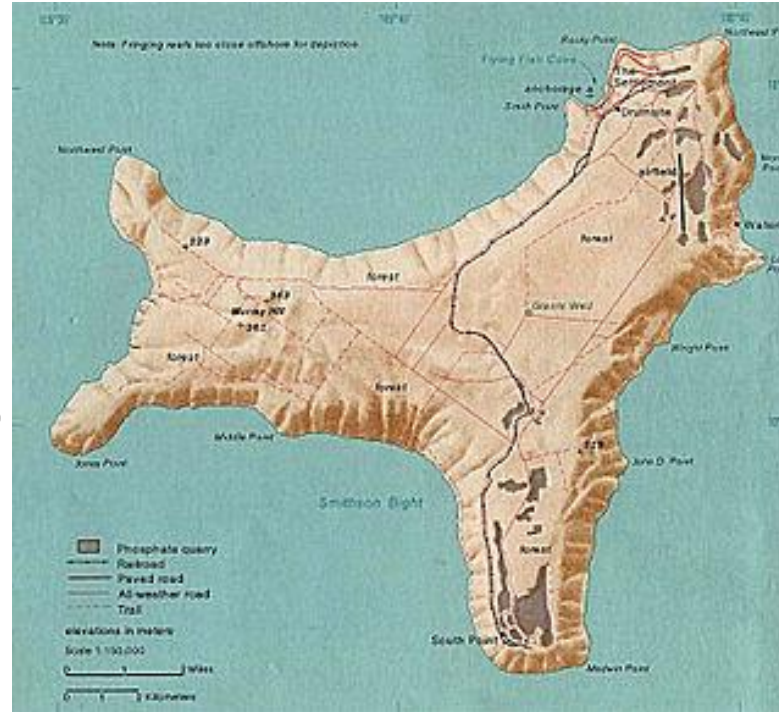
- 75 subscribers
- 2 x 1W cells
- \$100,000





# Christmas Island

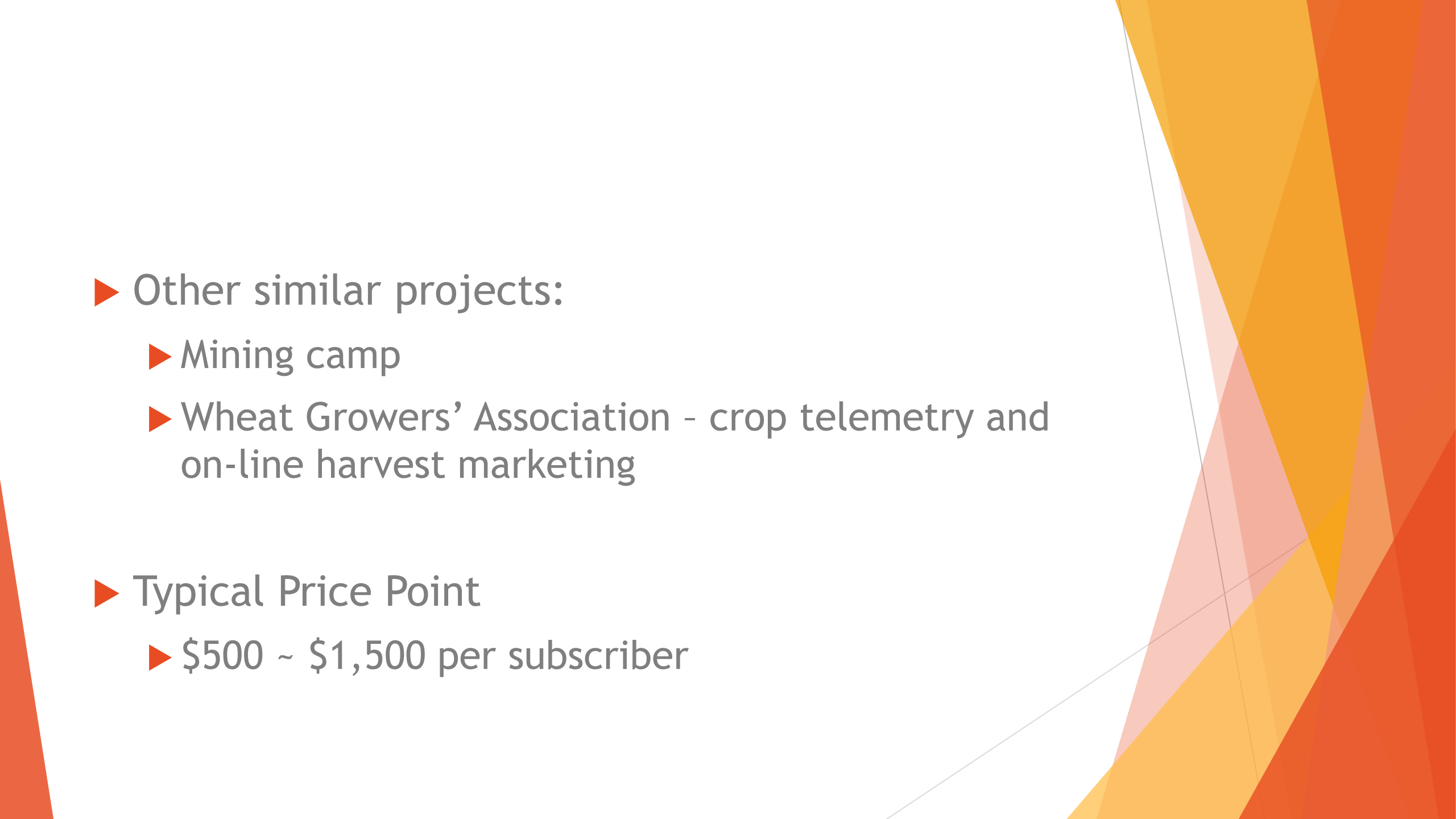
- 500 subscribers
- 135 Sq Km - 6 LTE Cells
- \$750,000
- Funded by local cooperative





# Enabling Technologies

- ▶ Compact LTE - less than 10,000 subscribers
  - ▶ Virtualised Core and SDR Cells
  - ▶ Virtual processors and SDR RAN means hardware costs are almost inconsequential
- ▶ Parallel LTE for organic growth - minimises towers
- ▶ Network Function Visualization + SDWAN
  - ▶ Reduces design, implementation and management costs.

- 
- ▶ Other similar projects:
    - ▶ Mining camp
    - ▶ Wheat Growers' Association - crop telemetry and on-line harvest marketing
  - ▶ Typical Price Point
    - ▶ \$500 ~ \$1,500 per subscriber

The technology exists .....

The experience is real .....

The finance works .....



**But it needs organisation**

The Internet - it's a facility.  
Must it be the same for everyone?

Who's thinking about this?

- Shire Councils?
- Town Councils?
- Producers' Associations?
- Tourist Providers?

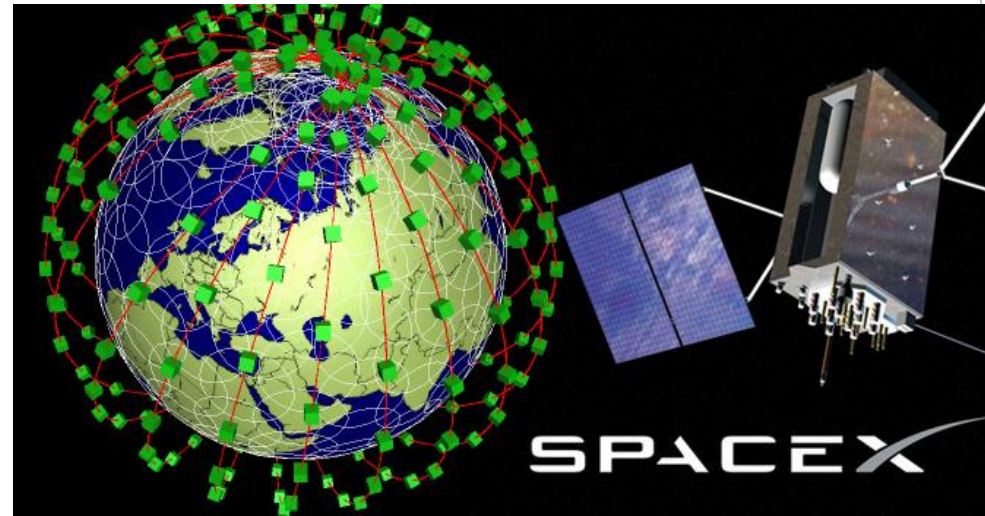
# What's the Incentive

- Investing in community enterprise
- Community equity in scarce WAN resources
- Generating a creative environment
- High speed mobility
- A social contract with your provider

and just around the corner .....



# SPACE X - ONEWEB - 2019



## A radical change in network delivery

- Thousands of orbiting satellites.
- Only 1200 kms and 35 msecs away.
- Each one an LTE cell

# A case in point



[Grahame.Cover@ursys.com.au](mailto:Grahame.Cover@ursys.com.au)

