

Satellite Broadband as a Key Contributor to USO Programs in the Pacific

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10th APT Policy and Regulation Forum for Pacific (PRFP-10)

Satellite connectivity workshop – 24th April 2017

Addressing the digital divide with USOs

The situation

Internet penetration in the Pacific lags that of countries in other regions with equivalent GDP and literacy rates.

The question

How to enable broadband as a key part of USO in the Pacific?

The supplementary question

Is satellite the (new) solution for universal broadband?

What does digital exclusion look like in the Pacific?



- ❑ Youth leave villages seeking education and jobs in better connected areas
- ❑ The diaspora threatens social and cultural cohesiveness
- ❑ Those without digital skills suffer reduced employability
- ❑ Unconnected citizens experience poorer levels of public service
- ❑ Staying behind in a cash economy and not entering the digital economy

Broadband centric USO: Public economic benefits

Making a nation's economy more productive

- Regional economic development opportunities
- Government services moving from physical to broadband
- Social services: better healthcare, training institutions
- Tourism: marketing, productivity
- Digitalization of services and businesses saving transport cost, time and improving logistics
- Network effects of better means of communications enabling swifter development of business between remote regions and regional centres
- Better infrastructure and awareness to mitigate climate change impact



Broadband centric USO: Public social benefits

Making the nation more inclusive, resilient and open

- ❑ Better educated citizens
(access to online information and e-learning)
- ❑ Healthier citizens
(through connected health centres and clinics)
- ❑ Greater gender equality and participation
- ❑ Greater social inclusion for those with reduced mobility or living in remote locations
- ❑ A society more resilient to natural disasters and epidemics



USO: the Pacific difference

EU and US frameworks for USO are designed for large populations living in large contiguous land-masses.

In the Pacific we need to distinguish between:

- Universal access (needed)
(people in rural villages can access broadband via connected communal access points)
- Universal service (not realistic)
(each individual household in a village has broadband access)

Weighting performance factors for establishing a broadband USO in the Pacific

Category	Factor	Priority
Technical	Average broadband speeds Minimum broadband speeds Data transfer volumes Availability Latency Jitter	Very High High High (increasing with video) Medium Low Low
Relative affordability	Bandwidth Equipment	Very high Very high
Population coverage	Metropolitan Urban Rural Remote	Low Medium Very high High
Ease of use	Ease of installation Ease of maintenance Resilience Power supply tolerance	High High Very high Very high

Technologies to support a broadband USO in the Pacific

Technology	Assessment
Fibre and VDSL	Great for capital cities High CAPEX means not suitable for USO
2G/3G legacy mobile	Networks don't deliver today's minimum speed and data capacity performance for true broadband USO
LTE Mobile	Lower deployment costs in rural areas Lower broadband speeds Higher incremental costs per GB Total cost might be lowered if powered by high-throughput satellite bandwidth
Legacy Satellite (C)	Large centralized antennas Low throughput High cost per GB Important for critical governmental communications
HTS Satellite (Ku, Ka)	Lowest deployment costs in rural areas Speed matching USO requirements and lowest cost per GB Key for affordable broadband (especially latest Ka-band)

The Pacific regional ICT Strategic Action Plan ("PRISAP")

- ❑ Community oriented approach
- ❑ Lead to an ITU affordable connectivity initiative in 2015
- ❑ 55 fully equipped e-centres to service 55 communities in 11 nations
- ❑ Connected tele-centres used as capability development tools

Vanuatu – the framework

- Vision: “A just, educated, healthy and wealthy Vanuatu”
- Regulator has set a high benchmark
 - Voice, data, and Internet
 - 98% of the population access by 2018
 - Speed requirement: 21Mbps downlink, 12 Mbps uplink
- Primary USO targets : schools, health centres, public offices
- 8 trial sites established: 6 schools and 2 clinics
- Small VSAT terminals



Vanuatu: Broadband as an overnight change factor

- Human capital dividend
 - ▶ Three remote clinics enabled with good quality broadband internet
 - ▶ Two critical medical cases solved thanks to an online consultation with a remote doctor
- A public service – not a social service
 - ▶ Affordable broadband can be sustainably and profitably enabled for remote communities by satellite



What we learned: a thirst for bandwidth

- Appetite for online content by previous unconnected communities
- Villages use as much monthly data as 15 households in mature economies

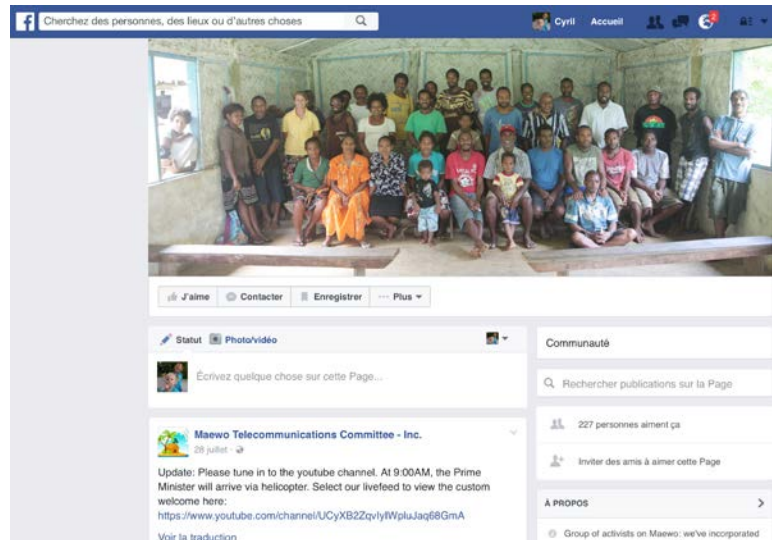


- Video and streaming a key share of the online traffic
- Social benefits in education and healthcare fully in line with USO rationale

Vanuatu: social implications

Communities as actors of their Internet

- Creating, not just consuming
- Whole villages online
- Bonding with extended families in Port-Vila and abroad
- E-commerce initiative (green gold- medicinal plants)



PNG Go Excite – “USO” by commercial empowerment

Excite is a Papua New Guinea broadband ISP using Kacific Interim service to offer product “Go Excite”

- Local community members set-up WiFi access points
 - Kacific terminals and Ubiquity products
- Fosters local entrepreneurship, & leverages community referrals
 - 10 Mbps/2 Mbps base product everywhere in PNG

Result : New ISP already deploying 200Mbps within a few weeks

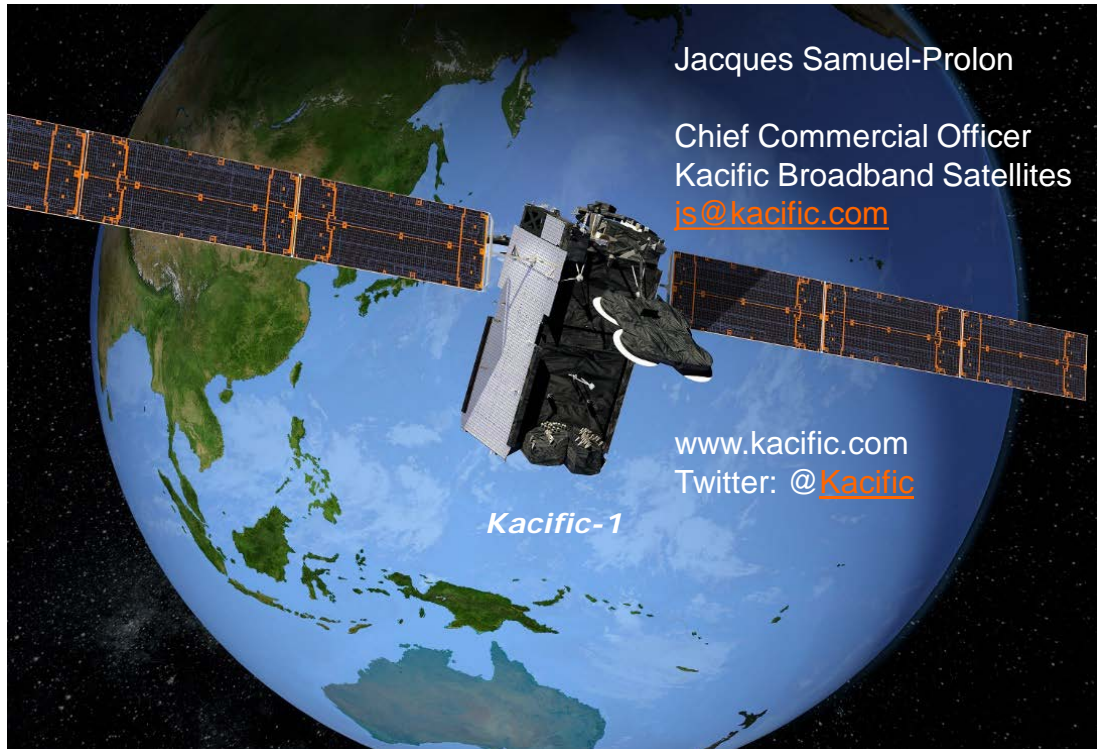


Take-away for USO in the Pacific

- USO means **connecting communities**
- **Creating**, not just consuming
- Planning for the next decade: acceptable bandwidth for daily **video** usage is key
- **Affordability** drives sustainability of government/private sector implementation schemes:
 - **New HTS satellites and low cost terminals** solve middle mile issue



Connecting the dots in the Pacific



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