

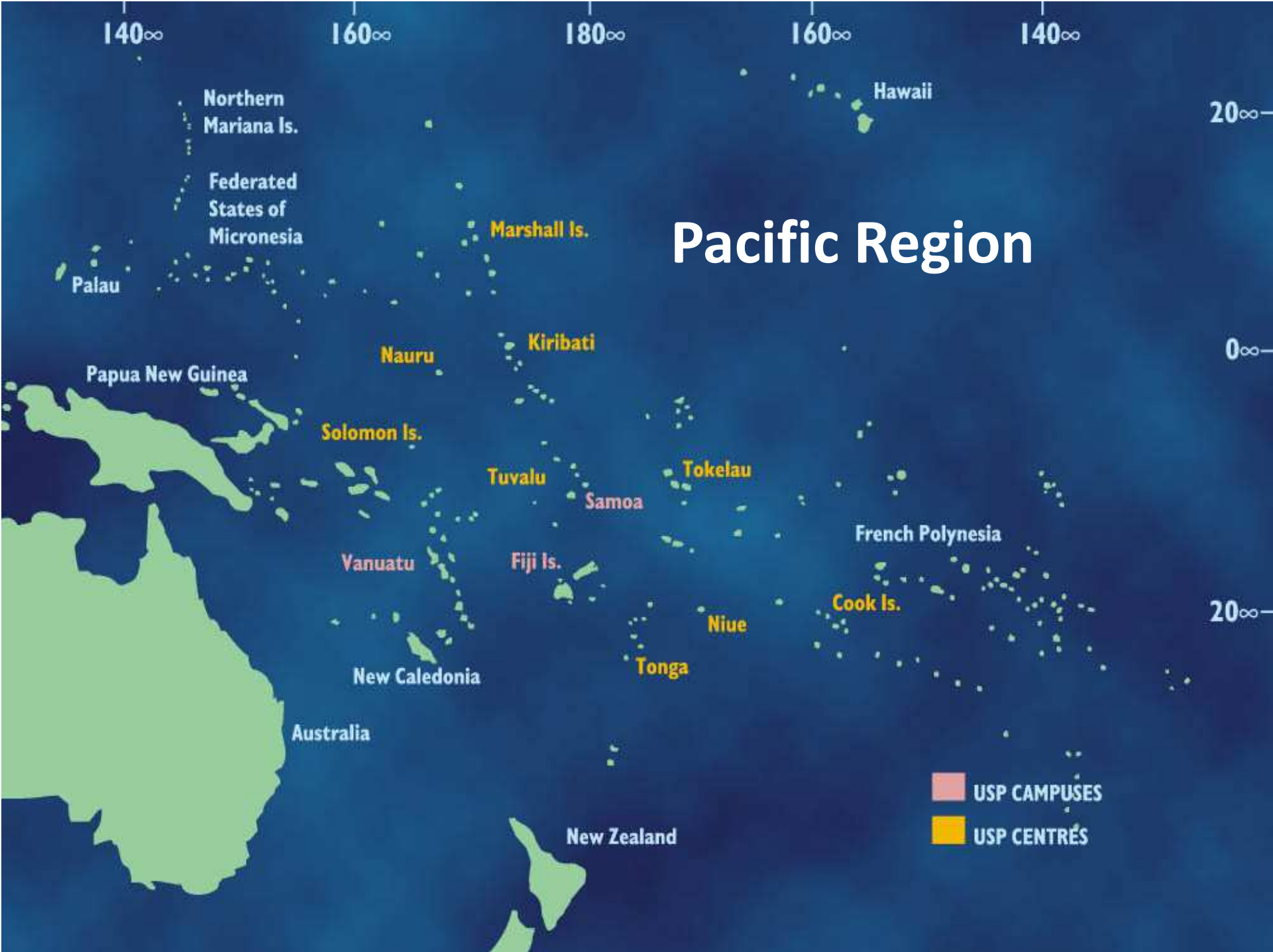
The Satellite Communications Perspective in Pacific Island Countries

Case Studies

by

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Pacific Region



Introduction

- **ICT and knowledge, supported by modern broadband, are the most important drivers of contemporary economic, social and educational development, which is why the world economy is now often referred to as the knowledge economy**
- **The Pacific region are no different. In fact, as Small Island developing states, ICT and broadband access are the major connective tissue with the world and even more critical for development in Pacific Island countries**

Introduction

- No one thought that small countries such as Tonga, Vanuatu, Marshall Islands, Samoa, Palau and FSM would have submarine cable.
- Currently there are Fourteen Pacific Island Countries and Territories (PICTs) connected to submarine cables and seven have the new O3B cheaper satellite service.
- Solomon Islands, Nauru, Tokelau, Niue, Cooks, Kiribati, Tuvalu- submarine cable are in the pipeline.
- While the Pacific Islands are focusing in getting their submarine cable, there is a need for Satellite Providers to diversify their services in Pacific

Challenges in the Pacific



- **The Pacific has 27 countries and territories scattered across the world's largest ocean and most with small populations.**
- **Each Pacific Island Country and Territory is unique**
- **Countries are distinct in their demography and geography as well as governance structures, which can affect inter alia on ICT development**
- **Pacific countries have unique challenges. Therefore, there can be No one size fits all approach in ICT development.**

Challenges in the Pacific



- **In the last 30 years, Satellite Telecommunication has been the main means of telecommunication for the Pacific Countries.**
- **The telecommunication infrastructure and services costs are naturally high in the Pacific because of:**
 - **Small scale, dispersed populations, remoteness, and susceptibility to natural disasters mean they don't benefit from the economies of scale**

Satellite Service Providers in the Pacific

Name of the Satellite	Position	Frequencies & Coverages
JCSat 2B	154°E	C-band, Global beam, Ku-band Japan Asia Pacific
APSTAR-5/Telstar-18	138°E	C Band:Palau, PNG, Solomon Is, Vanuatu, Fiji
Inmarsat 4-F1	143.5°E	L Band : All PIF countries
Intelsat IS-5	169°E	C Band : All PIF countries
Intelsat IS-8	166°E	C Band : Palau, FSM, RMI, PNG, Solomon Is, Vanuatu, Fiji
Intelsat IS-18	180°E	C Band : All PIF countries
GE23	172°E	Ku Band: 2 beams cover all PIF countries
Intelsat IS-19	166°E	C Band : Palau, FSM, RMI, PNG, Solomon Is, Vanuatu, Fiji, Tonga, Samoa, Niue
NSS-9	177°W	C Band Solomon Is, Vanuatu, Nauru, Tuvalu, Fiji, Tonga, Samoa, Niue
O3b/SES		C Band : All PIF countries
Thaicom 7 (IPStar)		C band : All PIF countries
AsiaSat 6	120°E	C band : All Pacific Nations
Eutelsat 172A ,172B,174A	120,172,174 °E	Ku-band - All Pacific Nations

Current usage of Satellite in the Pacific

Countries	Current Usages of Satellite	Main Purposes	Plan for future
Fiji	Yes	Redundancy and backup	Redundancy
Tonga	Yes	Redundancy and backup	Redundancy
Samoa	Yes	Redundancy and backup	Redundancy
Vanuatu	Yes	Redundancy and backup	Redundancy
Solomon Islands	Yes	International/Domestic Connection	Same
Kiribati	Yes	International/Domestic Connection	Redundancy
Nauru	Yes	International Connection	Redundancy
Marshall Islands	Yes	Redundancy and backup	Redundancy
FSM	Yes	Redundancy and backup	Redundancy
Palau	Yes	Redundancy and backup	Redundancy
Niue	Yes	International Connection	Redundancy
Cooks	Yes	International/Domestic connection	Redundancy
Tuvalu	Yes	International/domestic Connection	Redundancy
Tokelau	Yes	International connection	Redundancy
PNG	Yes	International/domestic/Redundancy	same
Guam			Redundancy
New Caledonia	Yes	Redundancy and backup	Redundancy

Number of Islands

Countries	Number of Islands inhabited	Connected by Submarine fiber	Depended on Satellite or Microwave
Fiji	106	2	102
Tonga	36	3	33
Samoa	4	2	2
Vanuatu	80	1	79
Solomon Islands	1000 +	0	1000
Kiribati	32	0	32
Nauru	1	0	1
Marshall Islands	29	2	27
FSM	5 States	5	0
Palau	8 States	1	7 States
Niue	1	0	1
Cooks	15	0	15
Tuvalu	3	0	3
Tokelau	3	0	3
PNG	3	1	2
Guam	1	1	0
New Caledonia	1	1	0

Case Studies

- **Samoa**
 - **Has 2 submarine cables**
 - **The other 2 islands are connected by Microwave**
 - **More submarine cables are planned for Samoa (Manatua cables), Hawaiki Cable**
 - **Satellite will be used mainly for redundancy and backup**

Case Studies

PNG

- **Has 2 submarine cables**
- **Satellite continues to be their main means of communication**
 - POM – 9 x O3b terminals
 - Lae – 3 x O3b Terminals
 - Mt Hagen 1 x O3b terminal
 - Ialibu 1 x O3b terminal
 - Kiunga 2 x O3b terminals
 - Lihir Island 1 x O3b terminal
 - Kokopo 1 x O3b terminal
 - Buka 1 x O3b terminal
- **Access to land is one of the major issues**
- **Mountains**

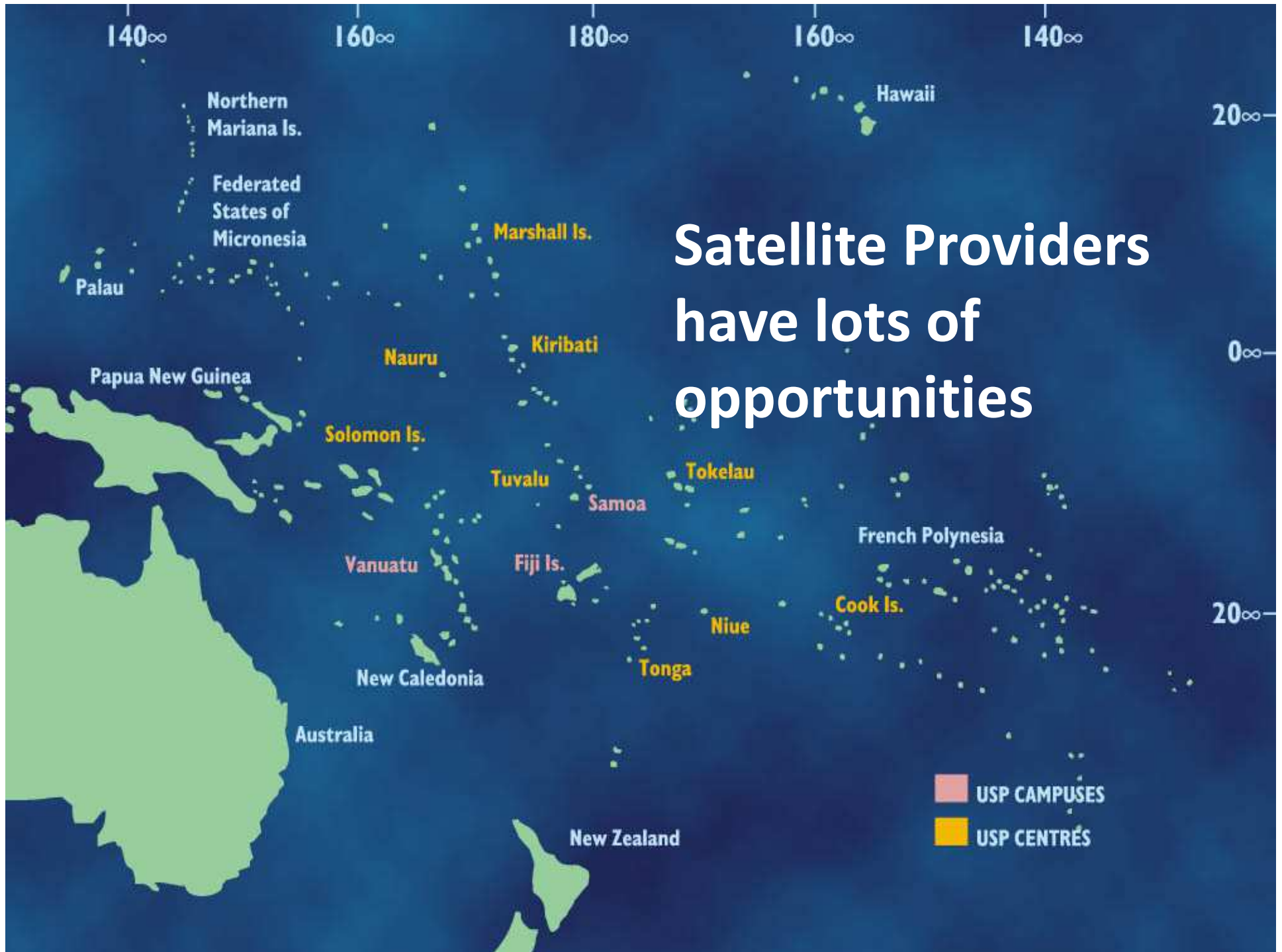
Observations

- **Fibre optic submarine cable has changed the landscape of connectivity in the Pacific**
- **Satellite will continue to play a major role in connecting the Pacific Islands (reduced capacity)**
- **Satellite Service Providers need to diversify their services – NOT focus on backhaul but focus on providing a Service (full services)**

Observations

- **Satellite Service Providers need to change their Business model for the Pacific**
 - Provide full cloud services (internet, telephony, billing, etc)
 - Capitalize the Oceania (massive area of sea)
 - Deployment costs (Ku-band)
 - Security threats in the Pacific – satellite is our solution
 - Improved satellite technology – beat the costs

Satellite Providers have lots of opportunities



Conclusion

- **Pacific Islands broadband access landscape has changed with most countries are connecting and planning to be connected by submarine cables**
- **Pacific region will continue to provide Business opportunities to the Satellite Services Providers:**
 - **Change their Business Plan model to the Pacific**
 - **Capture the massive area of Blue Ocean**
 - **More than 60% of islands are not connected**
 - **Satellite and submarine cables should be complimenting each others**
 - **Satellite Technology evolves rapidly**
- **Pacific still need Satellite Technology**

Malo

