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ICT Development Impacts-Pacific Potential

ICT Ministerial Meeting

Tonga, June 17, 2015

New Internet Inhabitants

What do trees, cows, shoes, and your body have in common?



This **tree** has 3,000 followers...do you?



Cow transmits 200 MB per year



Connected **shoe**



Asthma inhaler cross-referenced with environmental / weather data



Proteus chip transmits data from your stomach

- Near ubiquitous mobile phone access and availability, except in very remote regions
- Broadband Internet increasingly available, particularly mobile
- Technological convergence (e.g. phone, Internet, TV on one device)
- Innovative applications development: from basic SMS platform to full-scale web platforms
 - Social media
 - Crowdsourcing, civic engagement
- Integration, shared services, e.g. cloud computing
- Open Government, Open Data
- Machine-machine communications (Internet of things)
- Big data and analytics

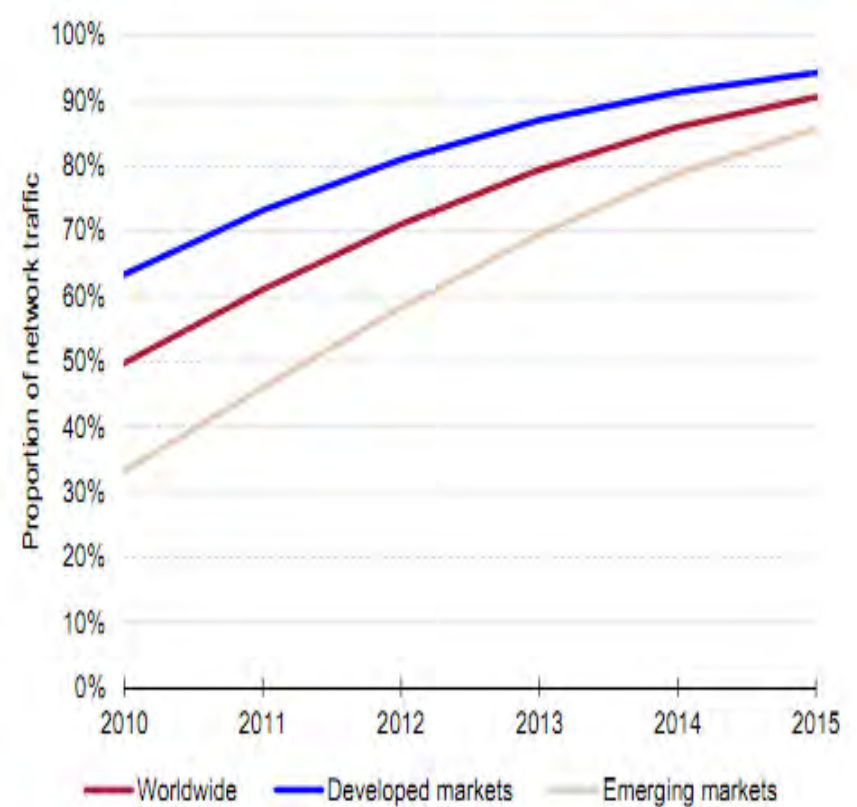
Increased role of data services...

Mobile Broadband Connections By Region, 2010-2015.



Source: Analysys Mason, 2011

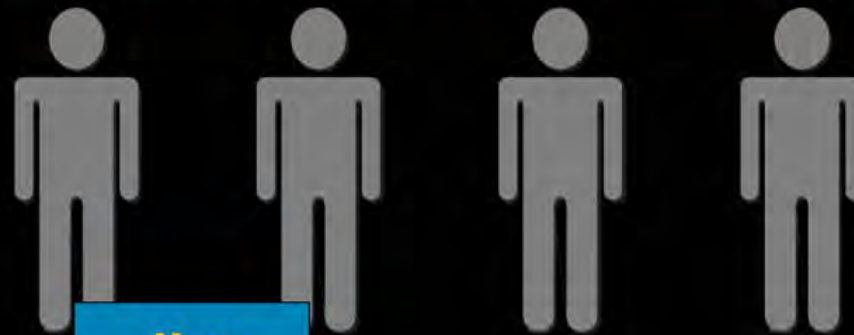
Data services as proportion of mobile networks traffic, 2010-2015



Source: Analysys Mason, 2011

The Internet of Things Is Already Here

World Population:	6.3 Billion	6.8 Billion	7.2 Billion	7.6 Billion
Connected Devices:	500 Million	12.5 Billion	25 Billion	50 Billion

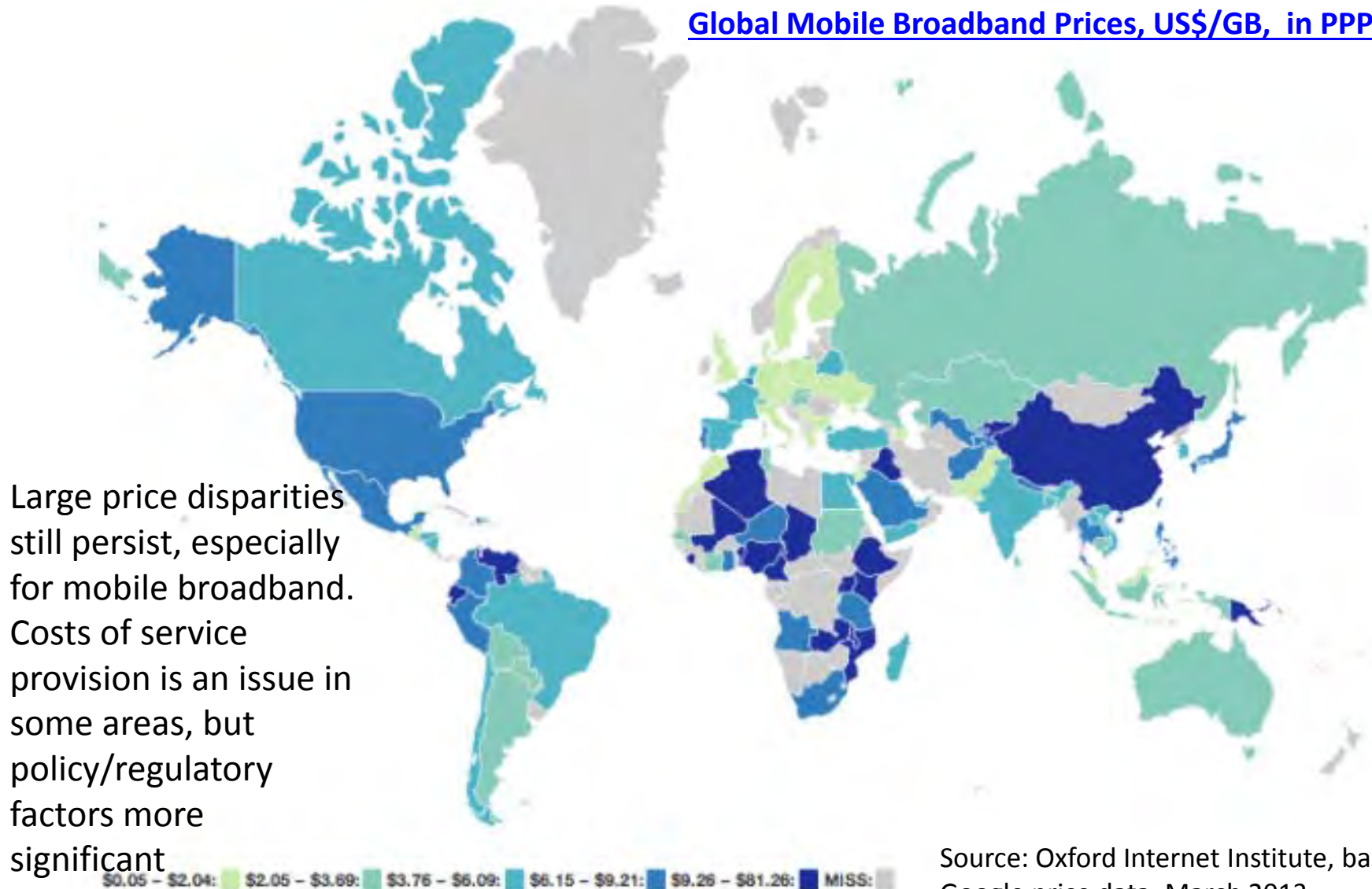


**More
connected
devices
than people**

Connected Devices Per Person	0.08	1.84	3.47	6.58
	2003	2010	2015	2020

Affordability remains an issue

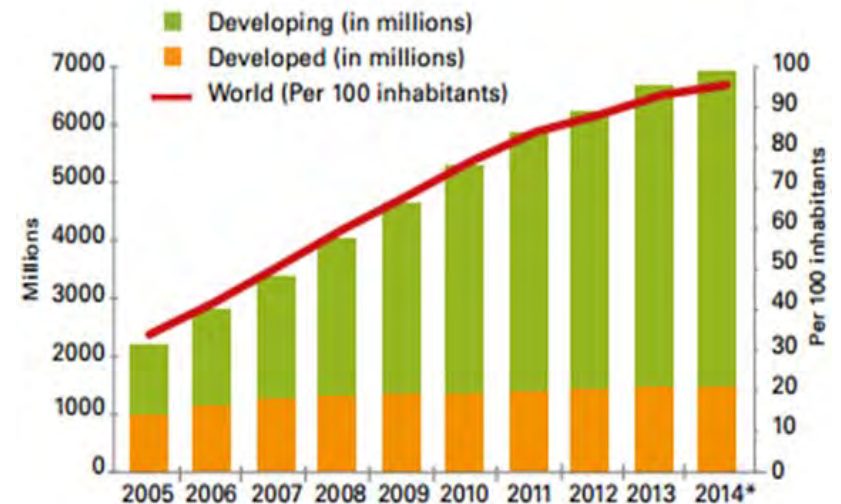
Global Mobile Broadband Prices, US\$/GB, in PPPs



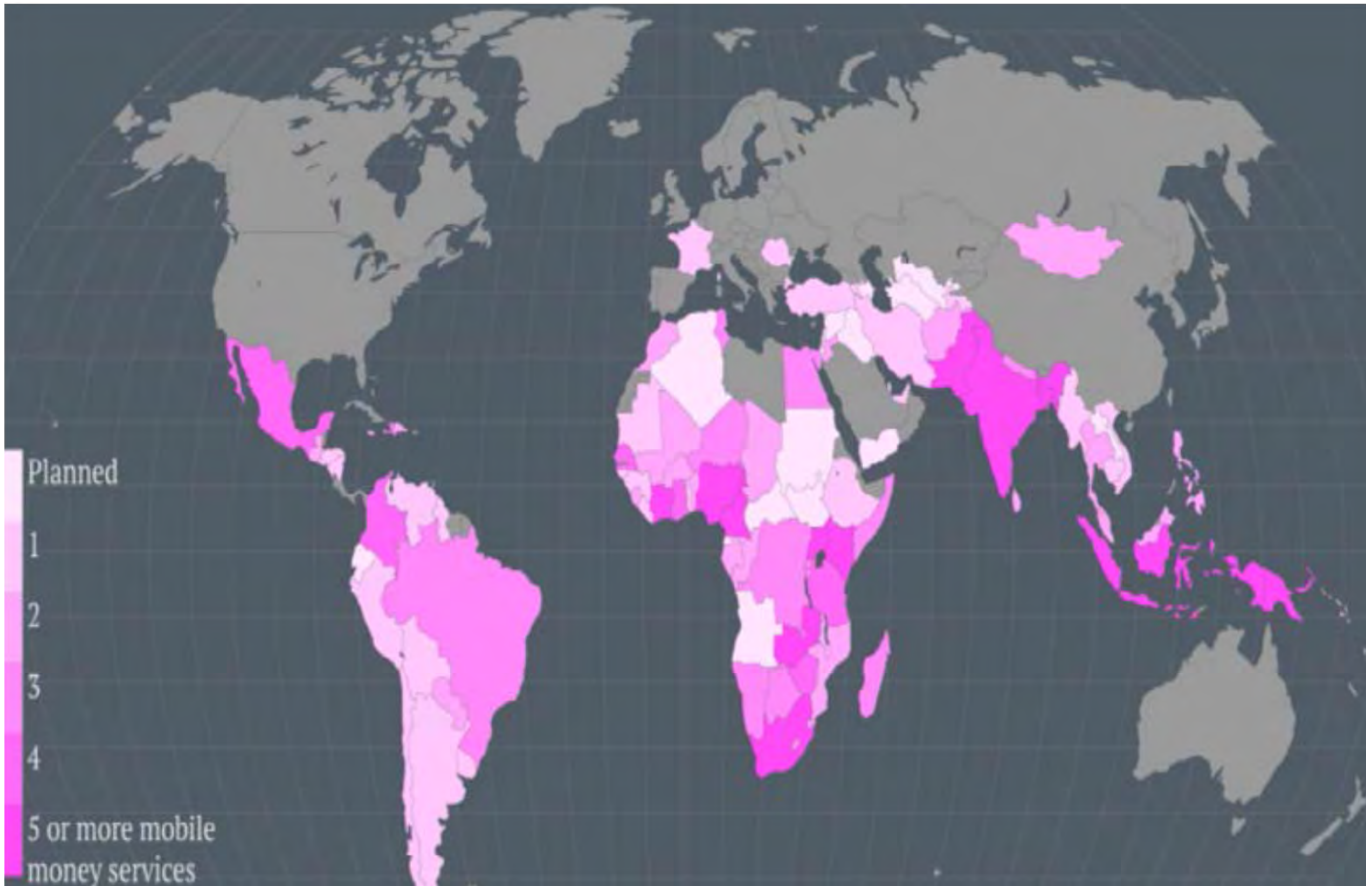
Source: Oxford Internet Institute, based on Google price data, March 2013

Investment challenges

- Access is growing, especially for mobile
- Universal access is an achievable goal, for most countries
- Market competition, private sector participation and independent, light touch regulation have delivered results
- But problems remain
- High-speed fixed-line broadband coverage is uneven and limited in many countries
- Mobile broadband (3G, 4G/LTE) may be a more practical option in developing countries, but it is not fully substitutable for fixed broadband (DSL, fibre) particularly for large institutional users
- Small island states, landlocked countries and rural areas present a particular challenge
- Private ownership and investment is the norm
- With a few exceptions, notably including China, private sector ownership and investment has driven the expansion of networks
- Public private partnership can stimulate also stimulate new investments (e.g. national broadband programs; universal access programs, submarine cable projects)
- Requiring favourable investment climate and operating environment



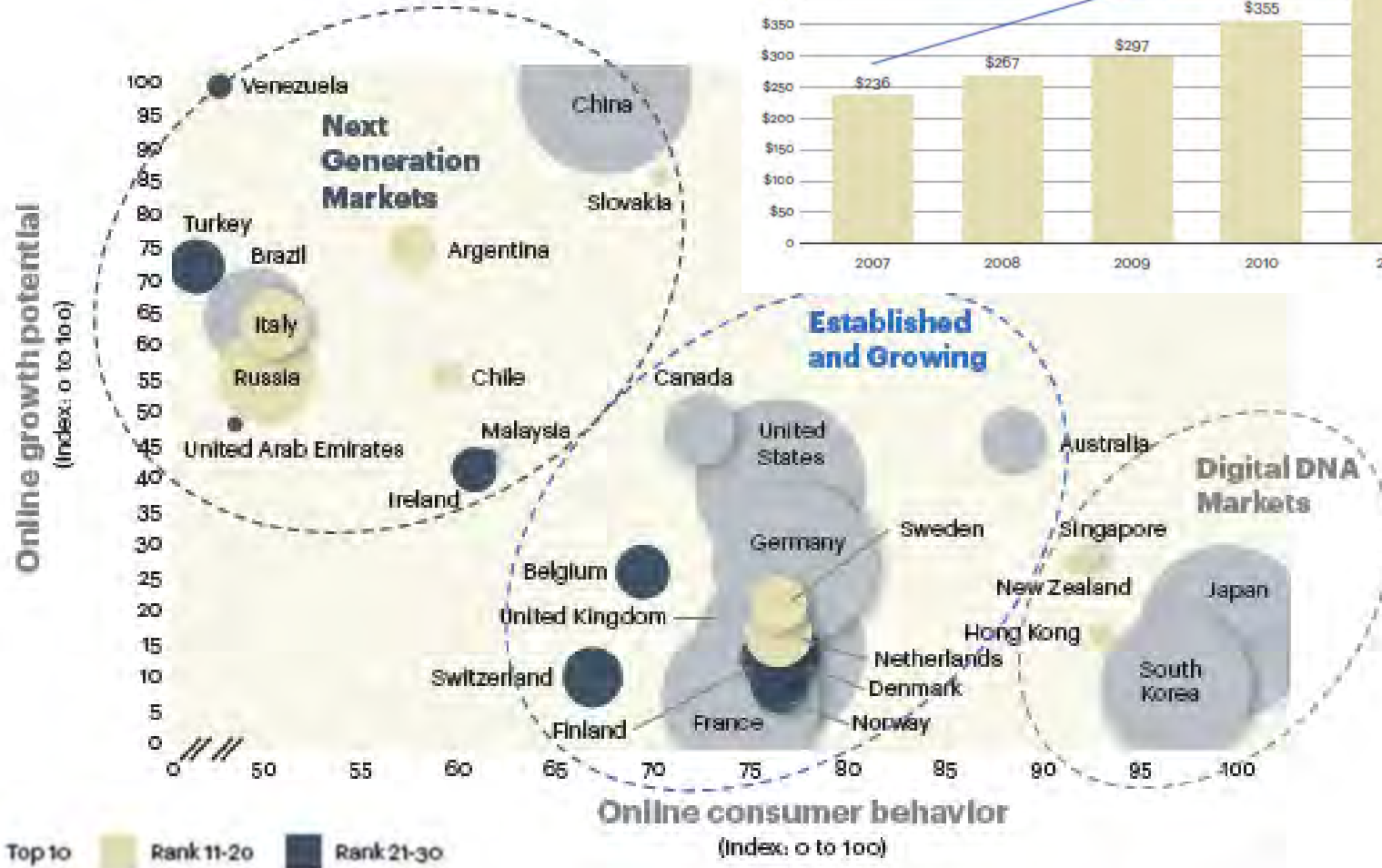
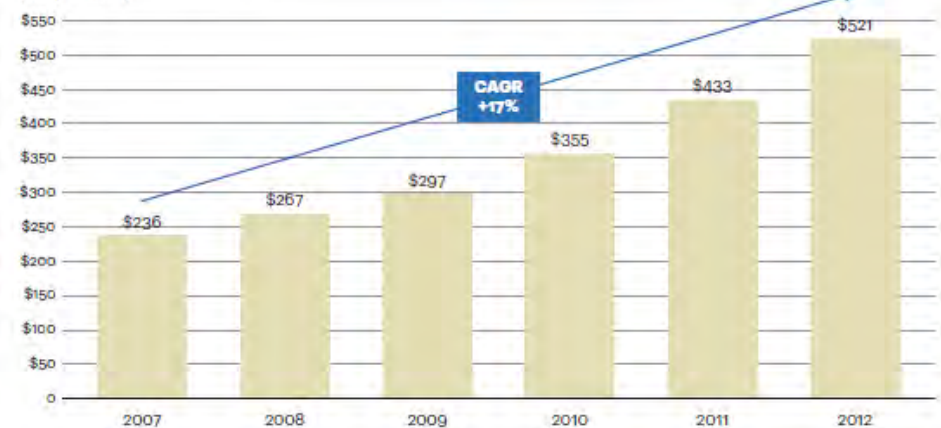
Money is online and mobile



E-Commerce is booming worldwide

Growth potential of eCommerce markets

Global online retail sales (US\$ billion)



Source: A.T. Kearney

Governments are going online

Analog Government services



Botswana's per capita income: \$7,317
Starting a business (Botswana): 60 days*

Online Govt. services (Estonia)

<http://vimeo.com/94158435>



Estonia's per capita income: \$18,478
Starting a business (Estonia): < 1 week*

* Source: Doing Business Indicators, The World Bank



Economic and Social Impact
of ICT in the Pacific

2015

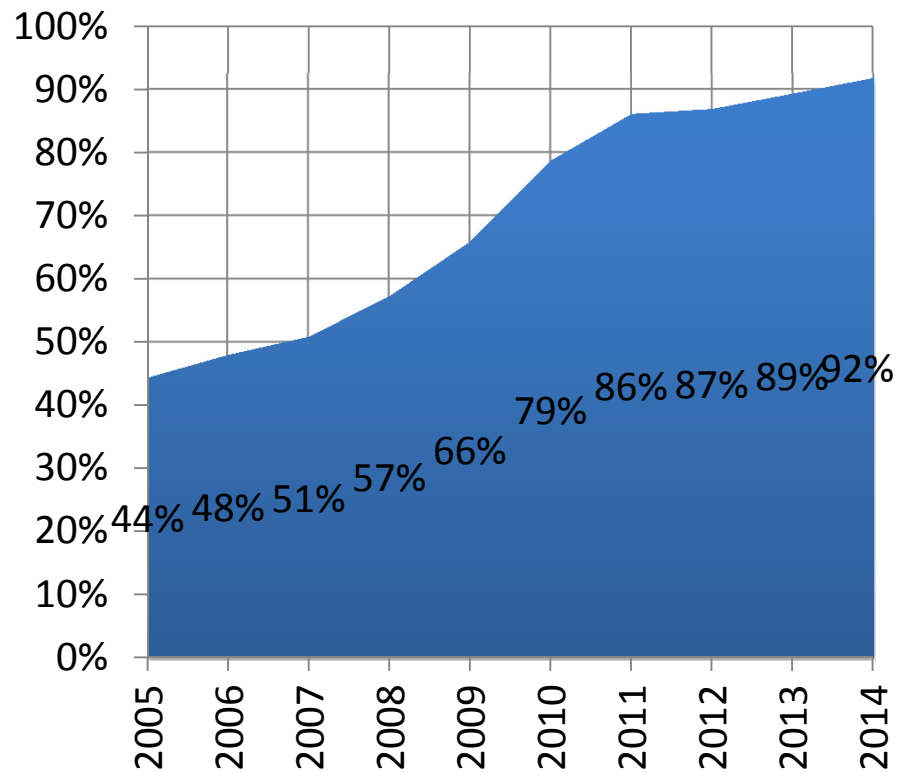


Pacific ICT Overview: Pacific Region Infrastructure Facility (PRIF)

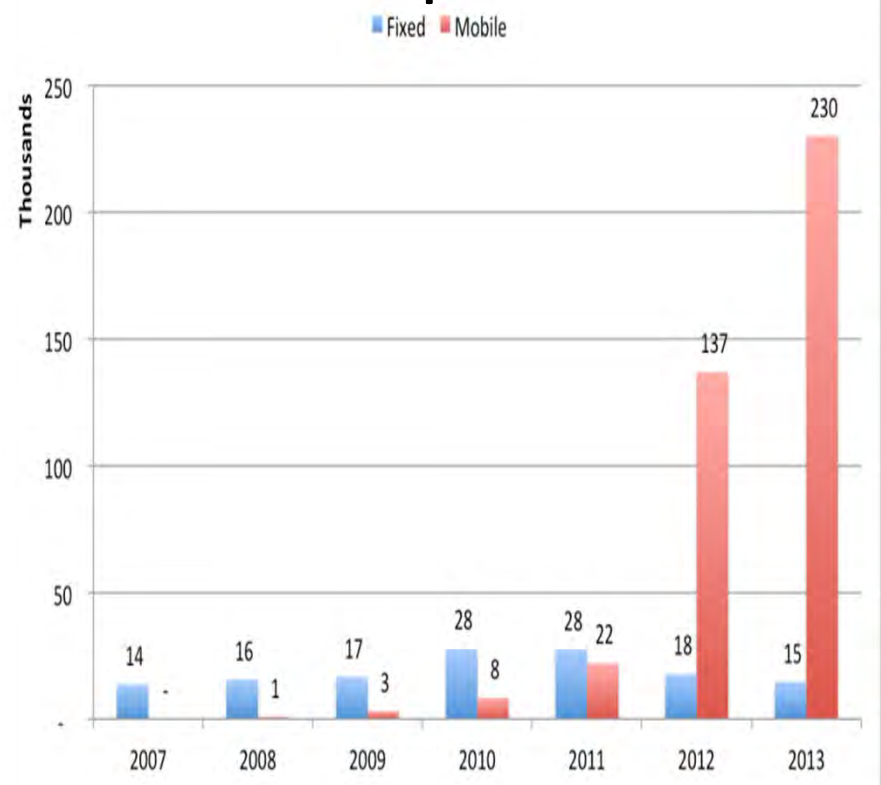
Coordinated by:
PRIF ICT Sector
Working Group

Improved access in the South Pacific

Population covered by 2G (GSM) mobile signal (%)



Mobile and Fixed Broadband subscriptions



- Tonga-Fiji Cable (August 2013): ADB, WB, Tonga Communications Corporation
- Vanuatu Cable (January 2014): Interchange, Vanuatu NPF
- Palau-FSM-Guam cables (planned 2016): ADB, WB
- Solomon Islands (planned 2016): ADB, Solomons Oceanic Cable Co.
- Samoa-Fiji cable (planned 2016): ADB, WB, Samoa Submarine Cable Co
- PNG: various cable options under consideration
- Kiribati cable?
- O3B satellite solutions (Palau, FSM, Cook Isl, Samoa, PNG, Timor-Leste, other markets)
- Other satellite solutions e.g. for small island markets

ICT-enabled business & services

- **Mobile money**
- **Agriculture, fishing: producer price, market, weather information**
- **E-commerce e.g. tourism**
- **Online education services**
- **School monitoring**
- **Health information services**
- **E-health**
- **E-Government**

Most applications require significantly improved Internet service quality and reliability

Jobs potential



- ICT/Telecoms Industry
- Service Industry
- Online Outsourcing

Country	Pop.	Direct jobs	In-direct jobs	Average revenue per worker (\$)	Total industry revenue (\$m)	Contribution to GDP (%)
Fiji	881,065	5,809	14,522	22,510	131.0	3.39
Samoa	190,372	1,255	3,138		28.3	3.52
Tonga	105,323	694	1,736		15.6	3.35

ICT-Enabled Development Requirements

CONNECTIVITY

- **ICT Policy**
- **ICT Legislation**
- **Market Liberalization**
- **Investment in Broadband: funding (including PPPs) and supportive regulations**

SKILLS

- **Public and Private Sectors**
- **Government Chief Information Officer**
- **ICT-Enabled Jobs**

GOVERNANCE

- **Legal & regulatory framework for electronic transactions, cyber-security**
- **Standard approaches to whole-of-government communications, enterprise architecture, use of data centres, portals etc**



- ***Ongoing: Connectivity & Regulation***
 - Pacific Regional Connectivity Program (in partnership with the Asian Development Bank, Pacific Region Infrastructure Facility, and private sector)
 - Pacific Regional ICT Regulatory Development Project + country-specific programs
- ***Potential/planned: Applications, Jobs & Services***
 - E-government, e-services
 - Disaster risk management and monitoring
 - Jobs

Thank you

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