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# Telecom Strategy for the Pacific

## – *The Next Five Years*

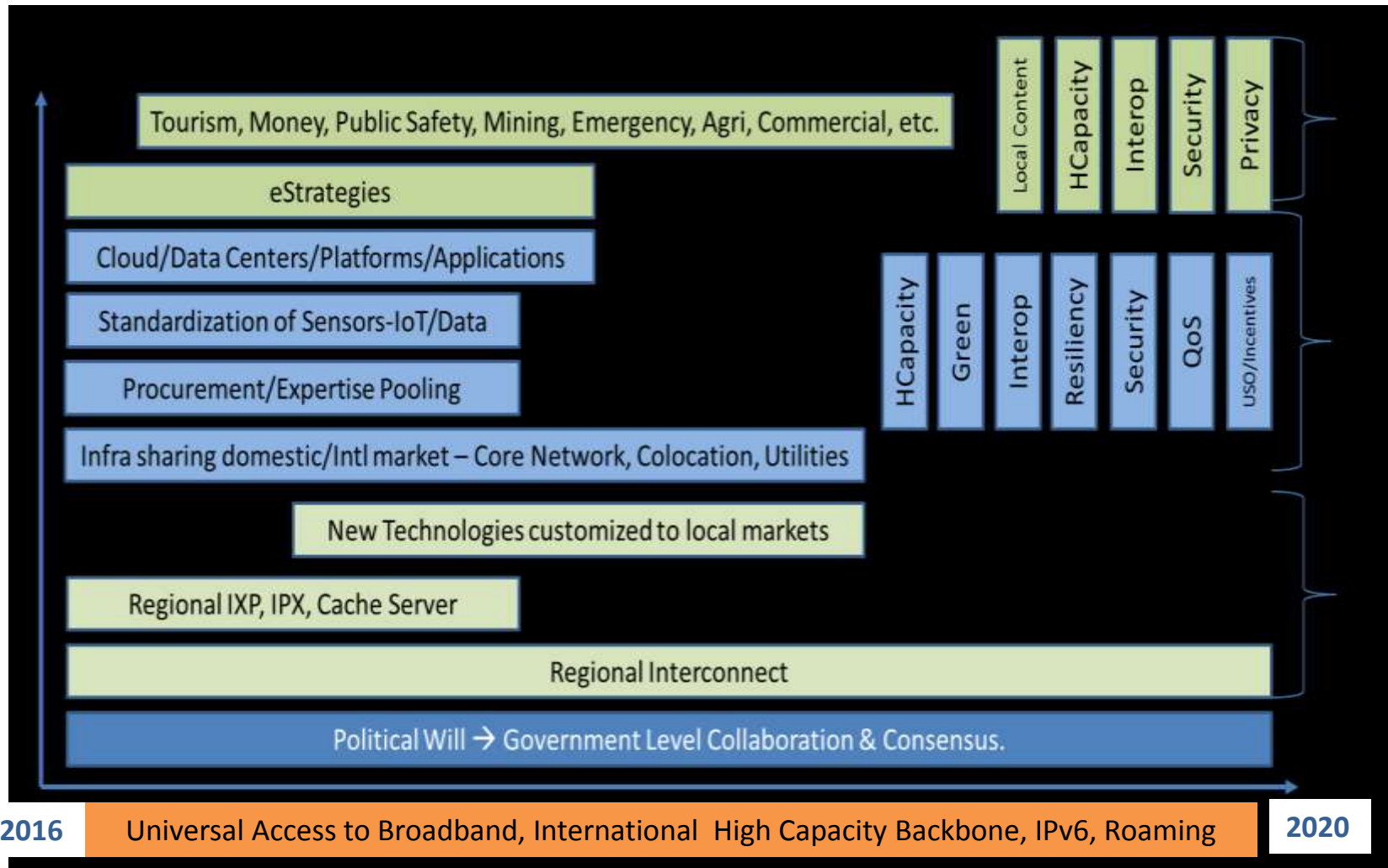
ITU.ASP.CoE Workshop

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# TELECOM IN THE PACIFIC- NEXT 5 YEARS ROADMAP



# ICT IS DRIVING SOCIO-ECONOMIC GROWTH



Emergency



Education



Health



Agriculture



Governance



Investment



Applications



Policy & Regulation



Capacity Building



Transport



Sensor Networks



Universal Broadband



Green ICT & E-Waste



Measurements



Electricity



Privacy & Security



Water



**SMART  
SOCIETY**



Infrastructure Security



Digital Inclusion



Spectrum Management



Standards, Conformity & Interoperability



Teleworking

# WHERE ARE WE HEADING?

## AGREED GLOBAL TELECOMMUNICATION/ICT TARGETS – 2020

### Goal 1 Growth : Enable and foster access to and increased use of telecommunications/ICT

**55%**  
of households should have access to the Internet

**60%**  
of individuals should be using the Internet

**40%**  
Telecommunications/ICTs should be **40%** more affordable



GROWTH

### Goal 2 Inclusiveness – Bridge the digital divide and provide broadband for all

**50%**  
of households should have access to the Internet in the developing world; **15%** in the least developed countries

**50%**  
of individuals should be using the Internet in the developing world; **20%** in the least developed countries

**40%**  
affordability gap between developed and developing countries should be reduced by **40%**

**5%**  
Broadband services should cost no more than **5%** of average monthly income in the developing countries



INCLUSION

**90%** of the rural population should be covered by broadband services



Gender equality among Internet users should be reached



Enabling environments ensuring accessible ICTs for persons with disabilities should be established in all countries

### Goal 3 Sustainability – Manage challenges resulting from the telecommunication/ICT development

**40%**  
improvement in cybersecurity readiness

**50%**  
reduction in volume of redundant e-waste

**30%**  
decrease in Green House Gas emissions per device generated by the telecommunication/ICT sector



SUSTAINABILITY

### Goal 4 Innovation and partnership – Lead, improve and adapt to the changing telecommunication/ICT environment

 Telecommunication/ICT environment conducive to innovation

Effective partnerships of stakeholders in telecommunication/ICT environment



INNOVATION



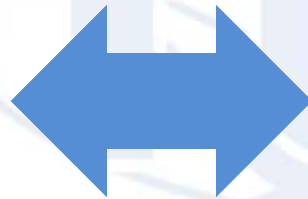
# TELECOM STRATEGY FOR THE PACIFIC.....

- **ITU AND PITA STARTED THE STUDY IN 2015 WITH SUPPORT FROM THE DEPARTMENT OF COMMUNICATIONS, GOVERNMENT OF AUSTRALIA**
- **STUDY CARRIED OUT BY CHETAN SHARMA WITH SUPPORT FROM ITU AND PITA STAFF AND MEMBERS**
- **ITU ASIA-PACIFIC CENTRES OF EXCELLENCE SENIOR MANAGEMENT TRAINING ON TELECOM STRATEGY FOR THE PACIFIC- NEXT FIVE YEARS”, 16-18 NOVEMBER 2015, NADI, FIJI DISCUSSED THE KEY ISSUES**



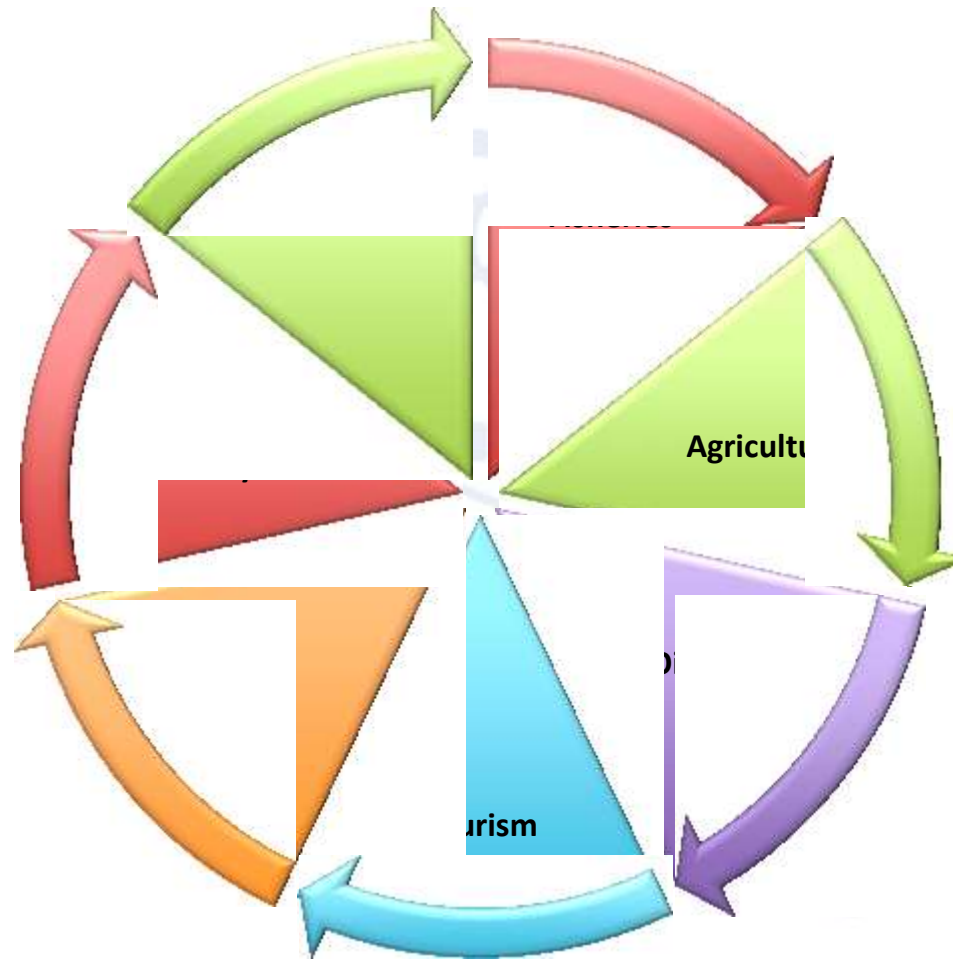
# STRATEGIC ALIGNMENT

- Connectivity and uptake
- Sustainability and Security
- Interoperability
- Reliability
- Applications and Services
- Enabling environment

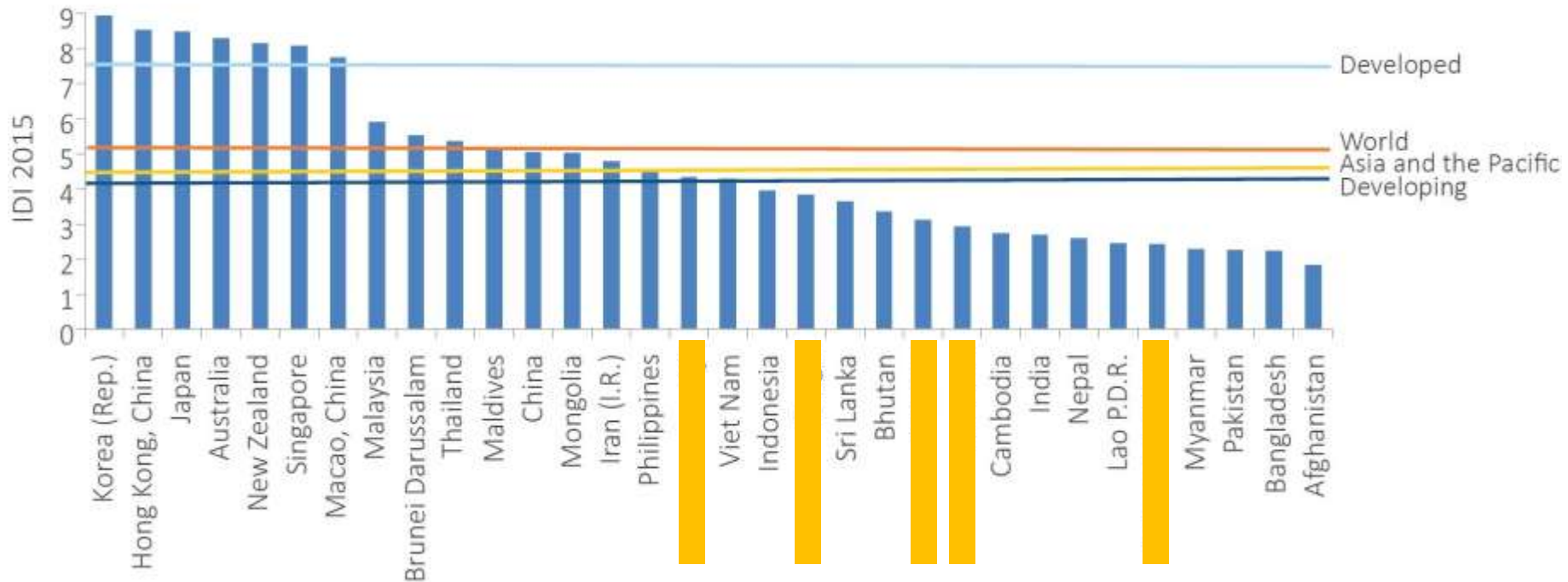


- Improve quality of life
- Achieve sector growth
- Meet socio-economic goals

## *Pacific: Key Economic Activities*



## ICT DEVELOPMENT INDEX (IDI) 2015 VALUES - ASIA & PACIFIC



Source: ITU.



# FIXED AND MOBILE - PACIFIC

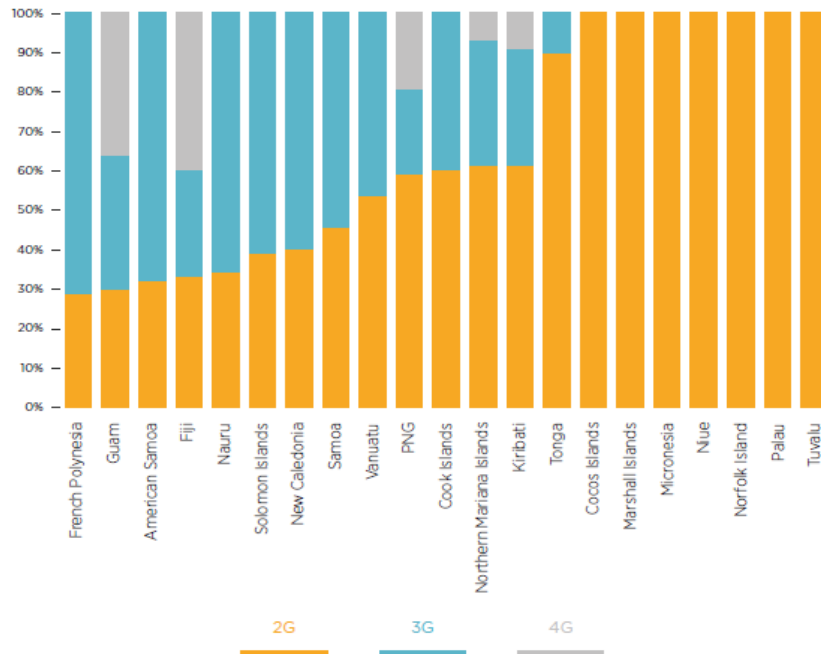
Pacific Islands	Number of mobile operators	Market share of leading mobile operator	Major mobile operators	4G mobile available	Fixed operator
Papua New Guinea					
Fiji					
Solomon Islands					
Vanuatu					
Samoa					
Tonga					
Federated States of Micronesia					
Kiribati					
Marshall Islands					
Palau					
Cook Islands					
Nauru					
Tuvalu					
Niue					



# MOBILE TECHNOLOGY FORECAST - PACIFIC

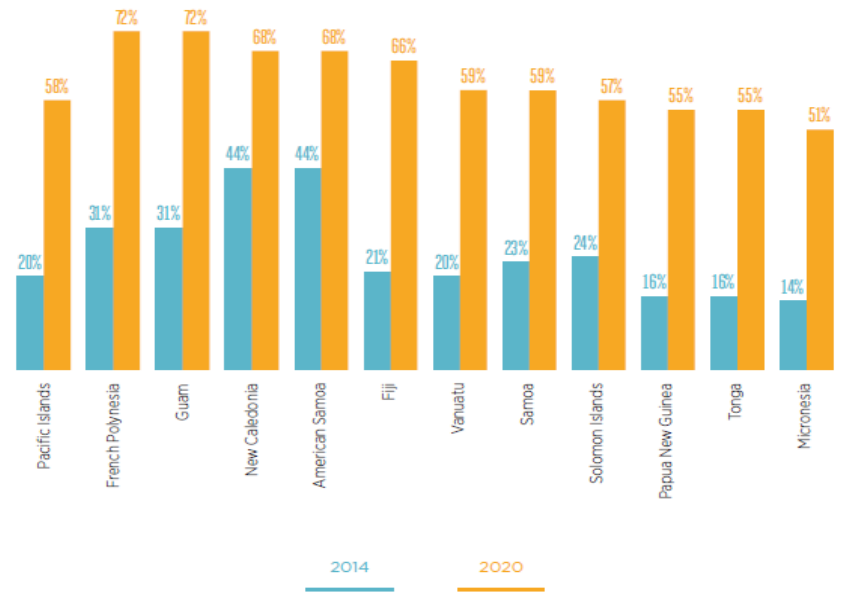
Source: GSMA Intelligence

Technology mix by country  
2020



Source: GSMA Intelligence

Smartphone adoption in the Pacific Islands - selected markets

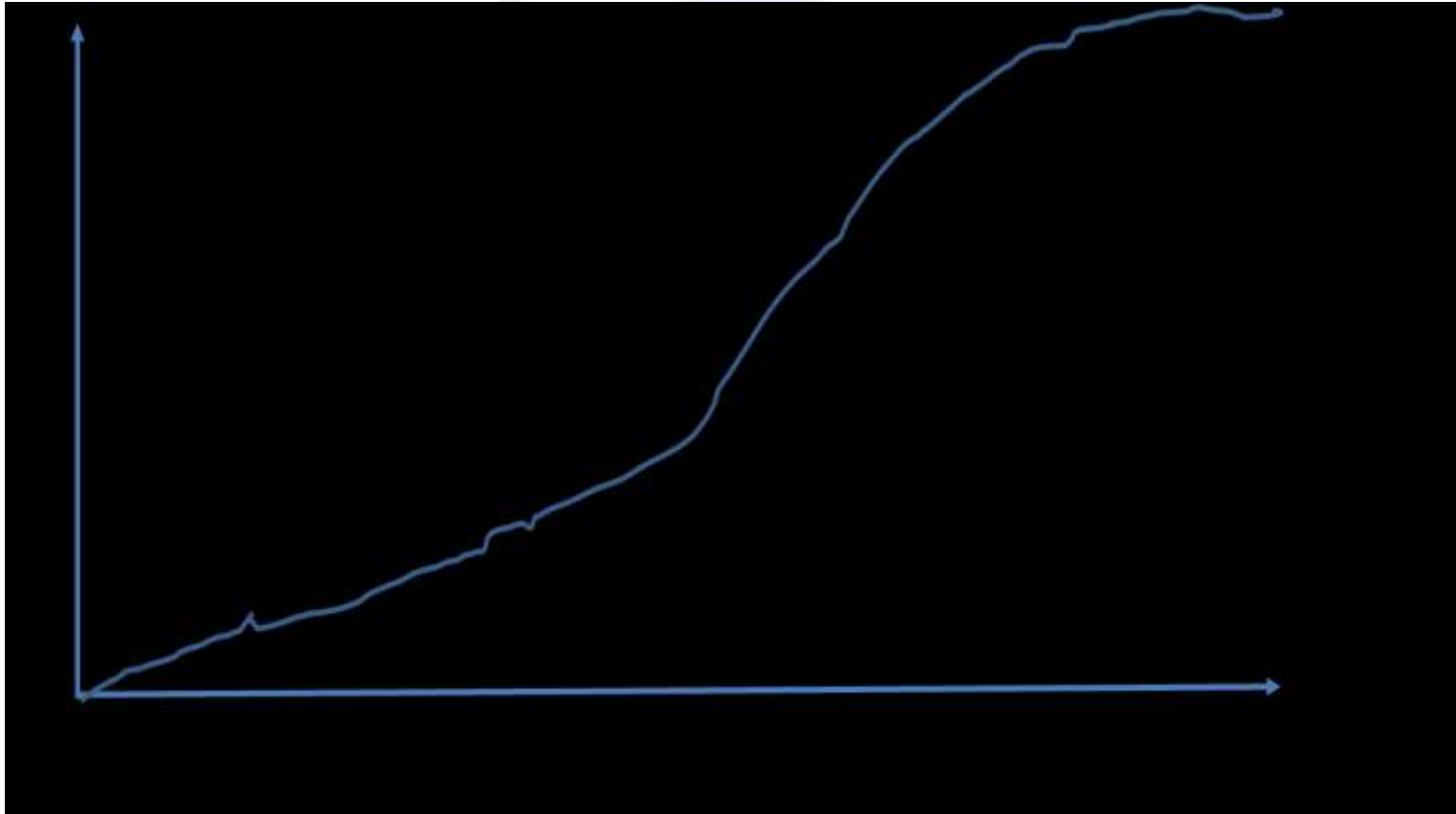


Source: GSMA Intelligence

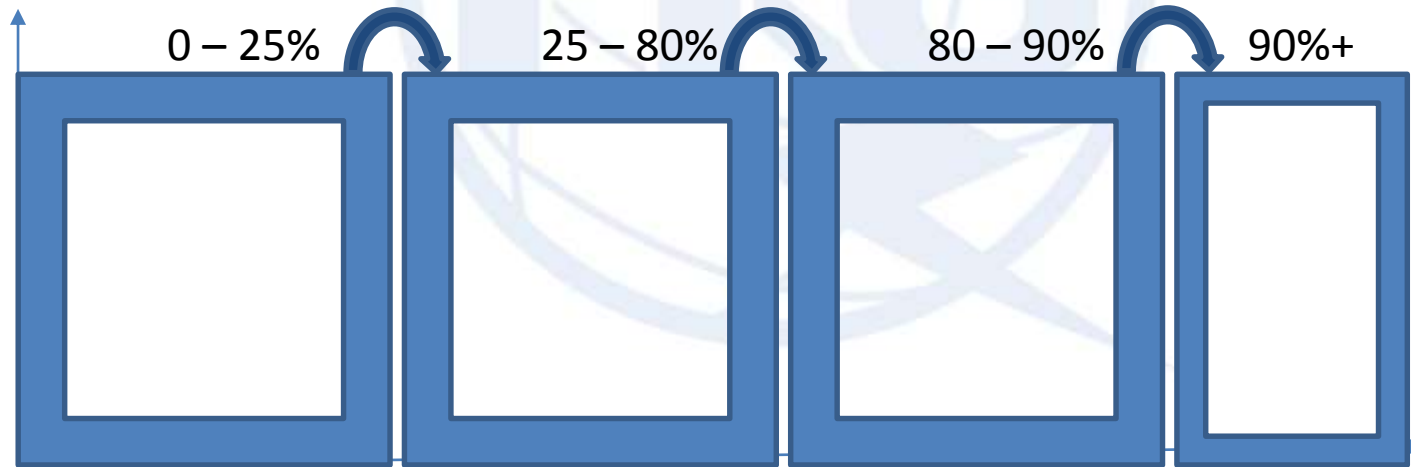


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# FRAMEWORK FOR SERVICE EVOLUTION



# STUDY: MOBILE INDUSTRY ANALYSIS FRAMEWORK



**GROW**

**HARVEST**

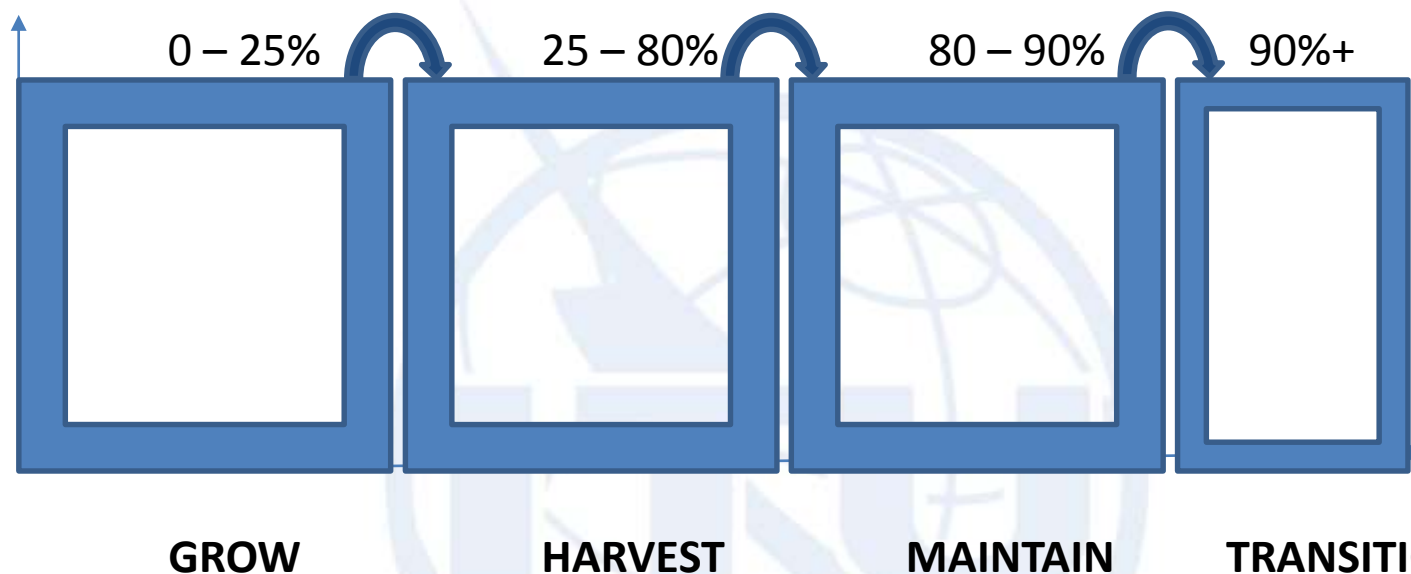
**MAINTAIN**

**TRANSITION**



# APPLYING THE FRAMEWORK TO VOICE REVENUES

MOBILE VOICE  
PENETRATION



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## ACCESS AND AFFORDABILITY

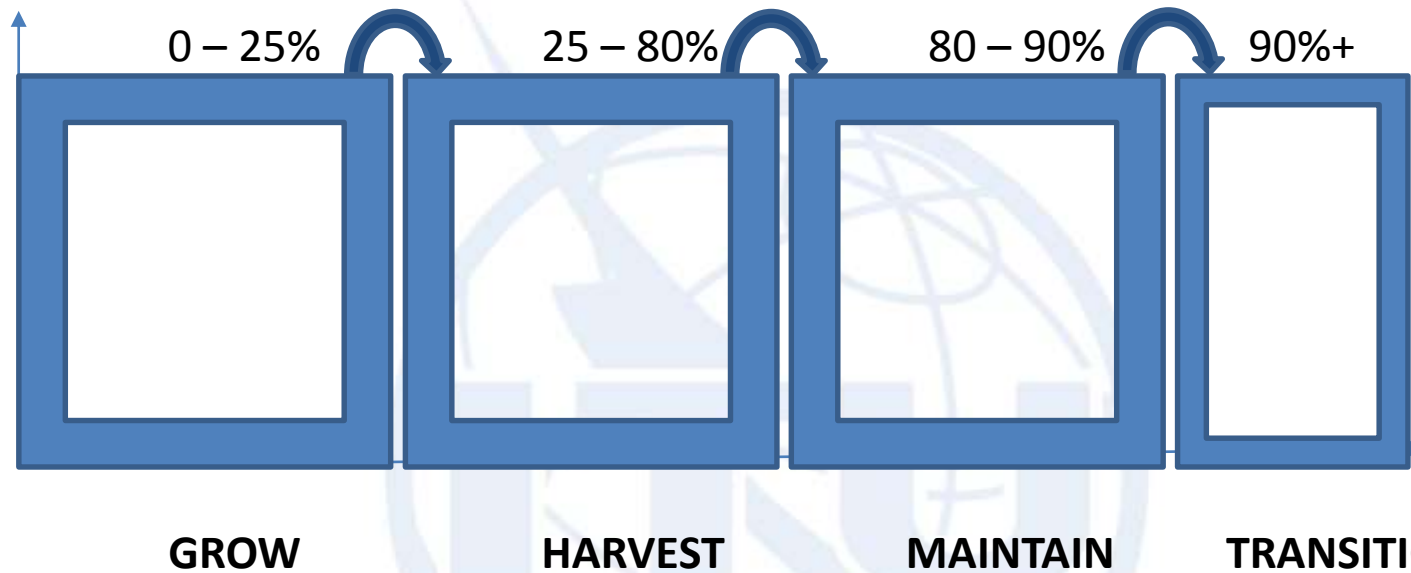
- Lower Infrastructure Cost
- Submarine Cable or broadband satellite
- Universal Access
- Infrastructure sharing
- More choices
- Competition (MVNO)
- Government Incentives

## AFFORDABILITY AND DIGITAL SERVICES

- Increased Reach
- Infrastructure sharing
- Cheaper devices
- More choices
- Competition (MVNO)
- Granular plans
- IP based digital (OTT) services

# APPLYING THE FRAMEWORK TO DATA REVENUES

MOBILE DATA  
PENETRATION



© ITU, Chetan Sharma Consulting, 2015

## ACCESS AND AFFORDABILITY

- Lower Infrastructure Cost
- Submarine Cable or broadband satellite
- Universal Access
- Infrastructure sharing
- Move to 3G and 4G
- More choices
- Competition (e.g. MVNO)
- Government Incentives,
- Regulatory Facilitations
- IP based digital (OTT) services framework

## REQUIRE CONSISTITION OF DEDICATED TEAM THAT FOCUS ON

- Acquiring new subscribers
- Introducing existing subscribers to new services
- Converting latent subscribers into active subscribers
- Build offers, strategies, marketing around adding new customers as their sole focus

## Smart Sustainable City (SSC)

### A multi-tier SSC ICT architecture from communication view (physical perspective)

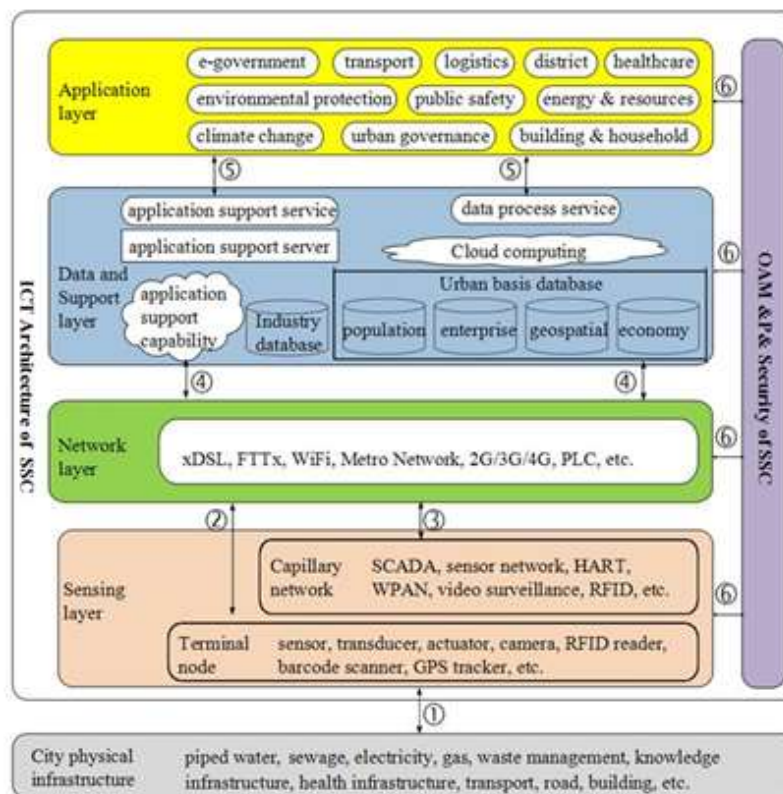
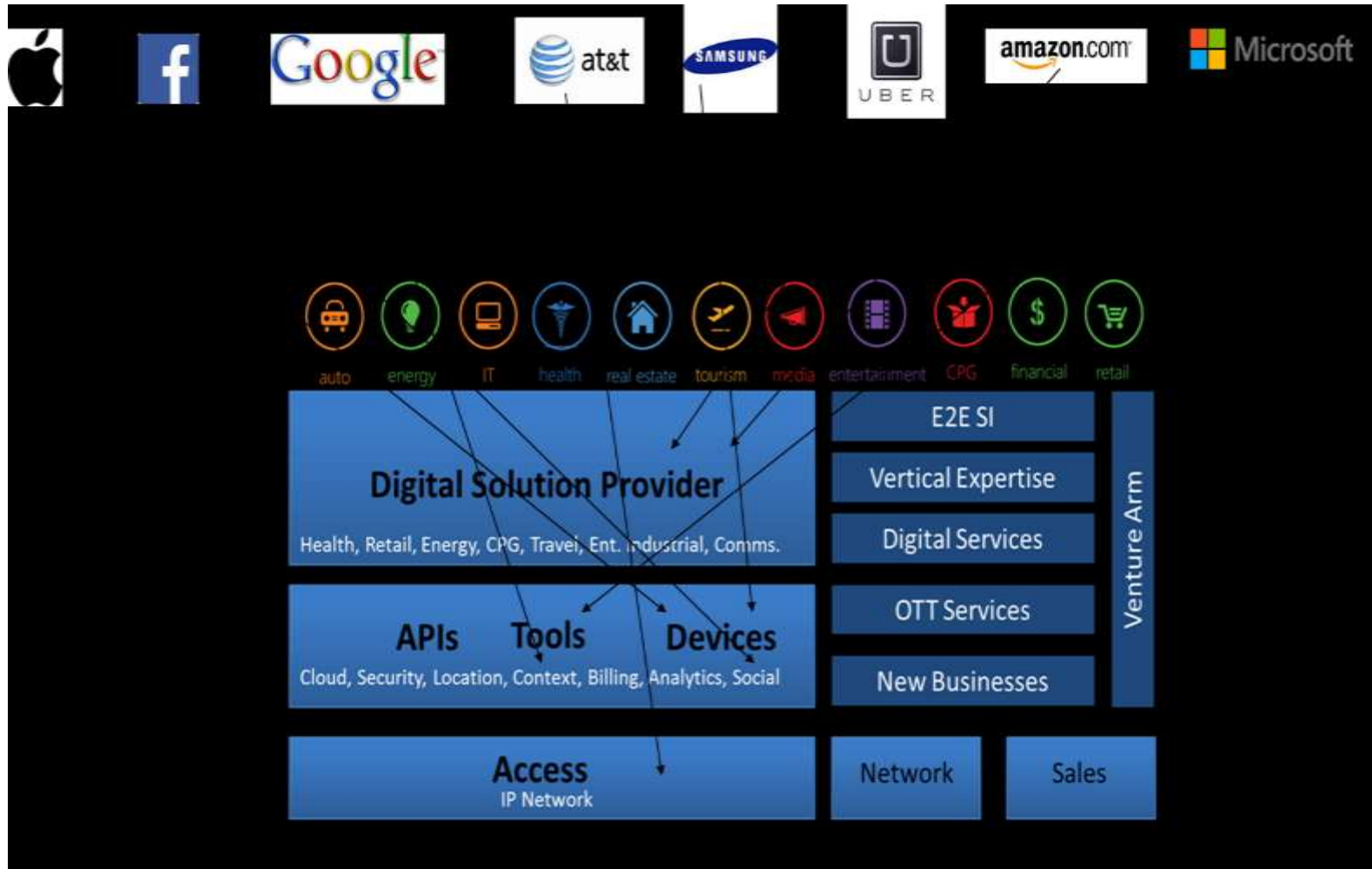


Figure source: ITU-T Focus Group on Smart Sustainable Cities: *Overview of smart sustainable cities infrastructure*

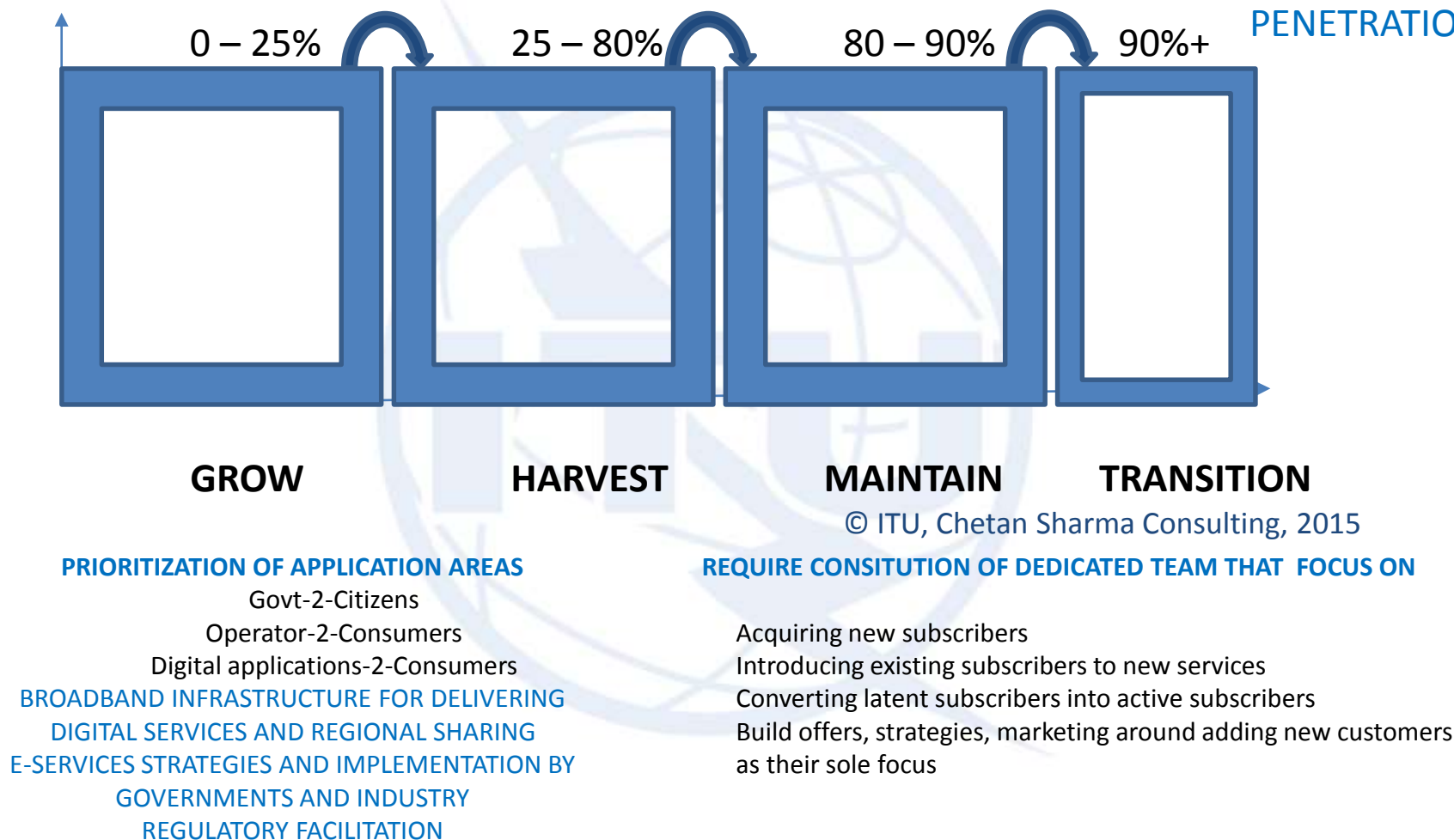
# DELIVERING DIGITAL SERVICES





# APPLYING THE FRAMEWORK TO DIGITAL REVENUES

MOBILE DIGITAL  
SERVICES  
PENETRATION



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## RECOMMENDATIONS FOR THE TELECOM SECTOR



**Fostering applications ecosystem**



**Promoting sharing of resources**



**Optimizing regional traffic**

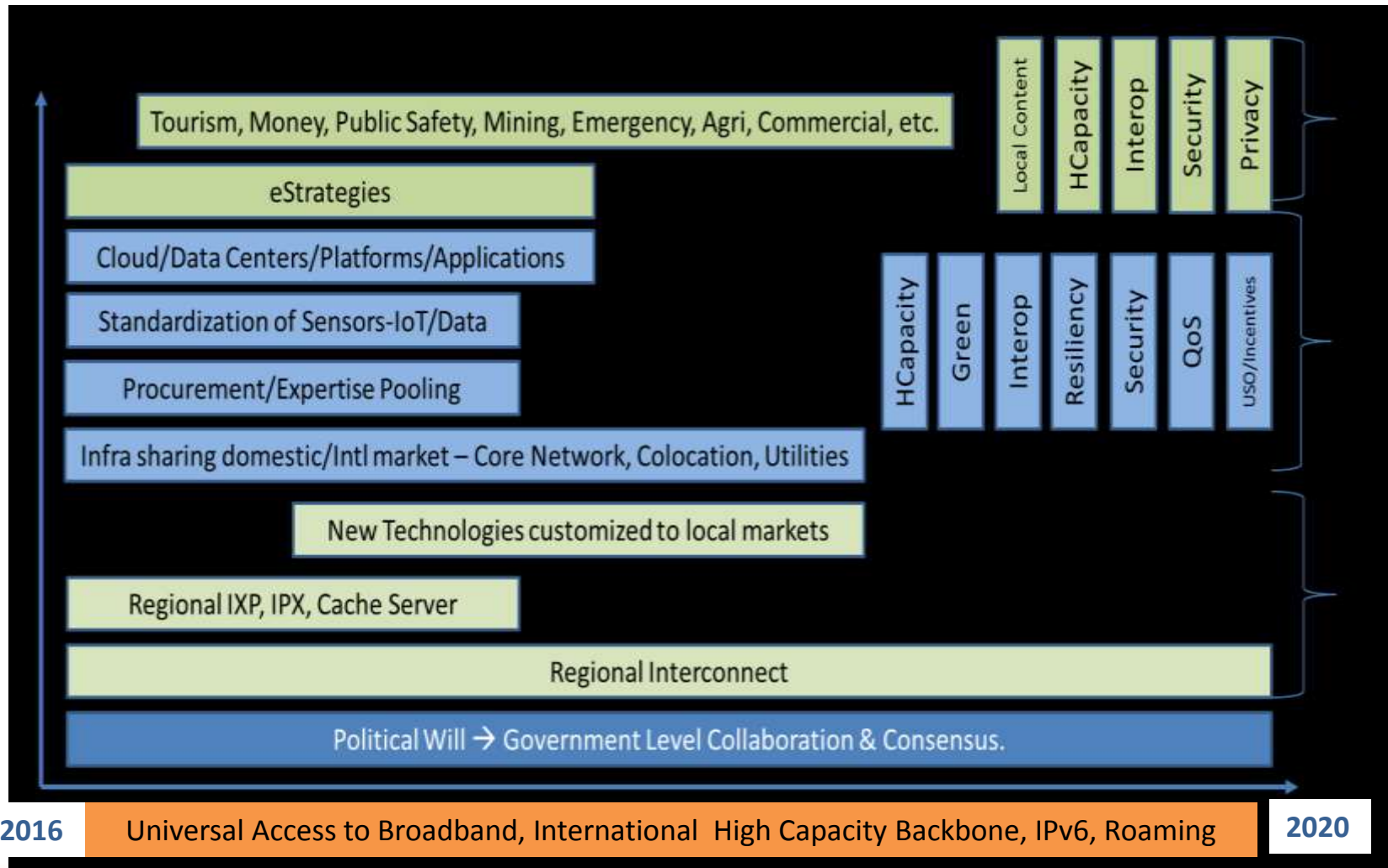


**Universal access to broadband,  
International high capacity backbone,  
IPv6, Roaming**



**Collaborative G5 Regulation**

# TELECOM IN THE PACIFIC- NEXT 5 YEARS ROADMAP



## Workshop Output - Industry Focus

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- Deployment of broadband in backbone and access
- Move from 3G to 4G
- Network resilience
- Facilitating regional interconnect (e.g. direct connectivity, internet exchange, cache servers)
- Adoption of IPv6
- Cooperation on sharing of bandwidth, platforms, apps and infrastructure
- Pooling of resources and expertise
- Collaboration on Pacific Islands Cloud strategy
- Collaboration on Pacific Islands Data sharing strategy
- Privacy and security
- Adopting green standards
- Greater focus on regional standards and interoperability
- Quality of service to accommodate mission critical services
- Enhanced focus on developing digital services nationally and regionally



# Policy and Regulatory Support I

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- Harmonizing the policy, legal and regulatory environment
- Universal affordable broadband access
- Updated information management (ICT statistics) in the region
- Facilitating regional interconnect
- International cable regulatory framework to improve affordability
- Cooperation on sharing of bandwidth, platforms, apps and infrastructure
- Facilitating competition via MVNOs (regional and national)
- Collaboration on Pacific Islands Cloud strategy
- Collaboration on Pacific Islands Data Sharing strategy

## POLICY AND REGULATORY SUPPORT II

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- Cooperation on security of telecommunication/ICT services (number hijacking prevention, fraud management, cybersecurity, CERT cooperation)
- Regional voice and data roaming cooperation
- Public Safety and Emergency management
- Benchmarking: QoS, Performance of networks, response times
- Framework for Digital Services and Net Neutrality
- Pooling of resources – physical and human
- Regional and national cross-sectoral (e.g. health, agriculture, governance) policy and regulatory cooperation
- Data Privacy
- Spectrum availability and management
- Enhanced focus on standardization
- Skilled and employable human resources



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# NEXT STEPS

## FINALISATION OF THE REPORT

## DEVELOPING IMPLEMENTATION PLAN BASED ON THE STRATEGIC FRAMEWORK FOR PRIORITISED AREAS

- Fostering applications ecosystem (e.g. e-application strategy)
- Promoting sharing of resources
- Optimizing regional traffic
- Universal access to broadband and international high capacity backbone



## 2017 – Observations

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- **Access networks are the lifeblood of any economy.** Need strong resiliency and reliability to support the digital services infrastructure
- Connectivity in Pacific needs hybrid solution
- Connectivity situation has improved tremendously
  - Submarine
  - Satellite
  - Wireless/Fixed
    - 4G deployment everywhere (penetrations vary)
    - High degree of usage/consumption in many markets (Fiji 4GB+)
    - Ambitious goals (Tokelau 20Mbps by 2020)
    - 5G mindset is already there, IoT thinking emerging
- Solving the cost equation
  - Caching, Facebook TIP, mmWave, others
- **This sets up the markets for digital services very well**





## 2017 – Observations

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- Great to see many digital services initiatives already in the works
  - Vodafone Fiji – eTransportation/eCash
  - Financial Inclusion
  - eAgriculture (ITU/FAO)
  - Infrastructure Security
  - Others
- Collaboration between agencies and ministries taking place
- Strong Recognition that the **collaborative framework** is needed



## 2017 – Observations

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- Pacific Islands face unique challenges but they have a unique opportunity to be a showcase for “**collaborative framework**” that could be a guiding light for many other nations around the world
- Sharing in other markets is generally limited to infrastructure
- Pacific Islands can help explore new territory in sharing
  - Platforms, Infrastructure
  - Data,
  - Customers,
  - Revenue streams,
  - Shared prosperity



### Collaboration

LATIN – collaborare → collaboratio → collaboration

- *the action of working with someone to **produce something***

## 2017 Workshop – Questions for Consideration

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- Can the new applications and services be built without a collaborative framework?
- What level of collaborative framework is required? At what layer?
- Who manages and controls the platform(s)? Who facilitates the roadmap? What are the guiding principles for the platform to operate?
- How do the projects get financed? What incentives can be provided to promote investments?
- What will be the most viable business models that can work?
- Which apps/services should be built/prioritized? What will be the timeframes?
- How can decision-making process be accelerated?
- Is any regulatory intervention needed? Govt. Proposals?
- Location of cloud/data centers?



## 2017 Workshop – Questions for Consideration

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- What applications/data need to reside locally vs. cloud?
- Are there natural alliances amongst nations which might cooperate more easily than others?
- Technology requirements for collaboration – Latency, Performance, SLAs, etc.?
- Opportunities for collaboration – short-term, medium-term, long-term?
- Discussion groups –
  - Operators,
  - Regulators/Govt.,
  - Industry

## 2017 Workshop – What we want to leave with

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- Your inputs, best ideas, concerns, recommendations
- An updated roadmap
- Collaboration Framework recommendations for further consideration
- 2-5 Application/Services area that be used to pilot the concept
- Business Model outline – potential choices
- Regulatory/Govt. concerns that need to be addressed
- Discussion of next steps