Role of Information and Communications Technology in Development

Presentation at the 2016 Pacific Update Conference

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Introduction

- Information and communication technologies and knowledge are crucial for all our survival, prosperity, and competiveness and engaging with others with dignity.

- Especially important for the Pacific Islands—even more important than for others.

- Most important drivers of development; that is why the world economy is often referred to as the knowledge economy.

Introduction (Cont.)

- Although there are pockets of advanced ICT developments, the overall ICT development in the Pacific Islands is seriously lagging behind other regions.
- Region is only now making serious efforts to promote ICT development and more importantly, to leverage it more intensively for their overall development.

Regional ICT Initiative

- ICT was recognised as a game-changing, transformative enabler of development and regional co-operation and integration by our leaders last year in Port Moresby.
- Priority pertaining to ICT asks for assessment of the merit of establishing RIAC.
- Led by USP with support from the PIFS. Other stakeholders in this area including the ADB and the World Bank are contributing, and the strengthened CROP ICT WG will provide high level guidance to the assessment.

Regional ICT Initiative (Cont.)

- USP has been recognised as the lead regional agency for ICT and as such I chair the working group and the Secretariat is based at USP.

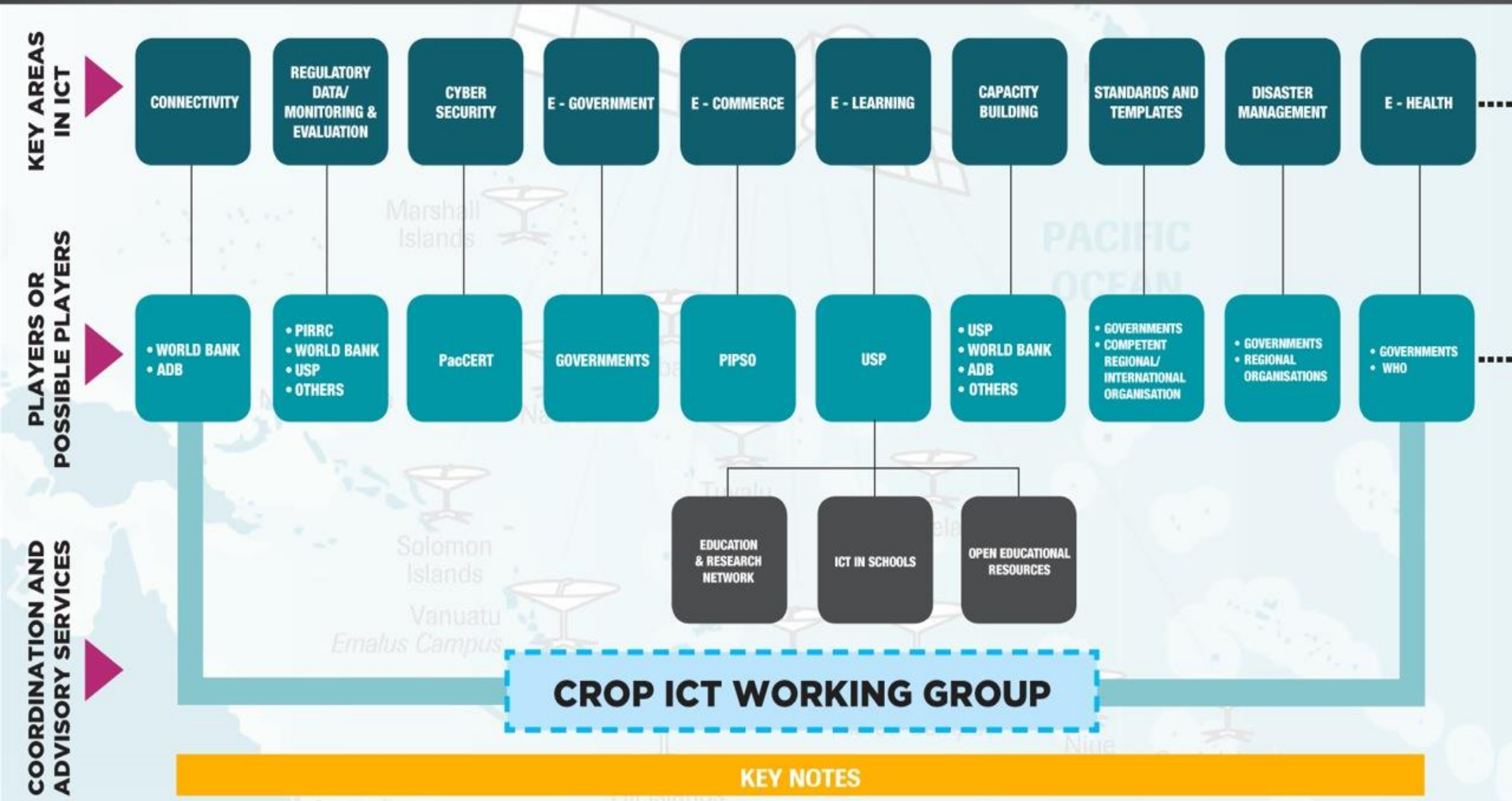
- The CROP ICT WG has been significantly strengthened with new members that now include the Australian and NZ Government, the ADB and the World Bank, and representatives of the private sector, leading ICT service providers, member countries (Forum Troika and SIS) and representative of the civil society.

Regional ICT Initiative-Key Pillars

- The CROP ICT WG has conceptualised the whole spectrum of ICT system as depicted in the Diagram, we view Pacific ICT as a number of pillars with associated players:

i. **Connectivity**, with ADB/World Bank, Governments and Companies active;
ii. **Regulatory, data, monitoring and evaluation of ICT**, with the Pacific Regional ICT Regulatory Development Project based at USP, World Bank, USP and others active;

REGIONAL ICT INITIATIVE - KEY PILLARS



KEY NOTES

The diagram simply demonstrates three things: (1) Key areas in ICT; (2) Players or possible players in ICT; and (3) Coordination and Advisory Services.

Key areas in ICT

The areas identified are those that have been generally agreed to and this can be revised based on any other priorities that may be considered relevant.

Players or Possible Players in ICT

This highlights players and possible players that are active or can be involved in the key areas identified. Others players can be included as appropriate.

Coordination and Advisory Services

- This is important as we feel a strengthened CROP ICT Working Group can do this work instead of RIAC.
- A strengthened CROP ICT Working Group can have a permanent Secretariat that can be responsible for coordinating the different work/tasks done by the various players in the key areas in ICT. This will ensure that everyone is aware what each one is doing and communicate on a regular basis to ensure that there is maximum benefit to the region in all the key areas. (For example, if a country is connected by cable then other players can see how they can utilise the additional bandwidth for application purposes. This can be planned even before establising connectivity).
- The structure of the Secretariat can be worked out once this is accepted.

Regional ICT Initiative-Key Pillars (Cont.)

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iii. **Cybersecurity**, with PacCERT at USP and other recent initiatives;

iv. **E-Government**, with governments and development partners;

v. **E-Commerce**, with PIPSO and firms;

vi. **E-Learning**, with USP leading in this area, but ministries of education becoming active;

vii. **E-Health**, with WHO, governments active;

viii. **Capacity building, education and research**, with USP as the main supplier, World Bank, ADB, others;

ix. **Disaster management**, with governments and regional organisations; and

x. **Standards and protocols**, with governments, regional and international organisations being active.

Snapshot of ICT Status in the Pacific

A snapshot for each of the **Key ICT Pillars** is briefly provided in the following slides. The information is from a paper that is being compiled by the CROP ICT WG.

ICT Connectivity

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a) International

- Good progress made in recent years with new submarine cables and new, cheaper satellite solutions and more initiatives are planned in the near future---the benefits of the better and cheaper connectivity are slow to eventuate and need speeding up.

- Challenge for next few years will be improving connectivity to the SIS.

ICT Connectivity (Cont.)

b) Local (including rural and remote)

- Mobile is the main focus for local connectivity with good progress being made on coverage. However, mobile data is still seen as expensive and usually only available in the major centers.

- Several countries have benefitted from a consolidated Government approach (Gov Net), especially in driving connectivity in rural and remote locations.

ICT Connectivity (Cont.)

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Table 1: Broadband Rollout Plans

Countries	Broadband Rollout Plans	PICT Providers have contingency and continuity plans	Public Key Infrastructure Establishment
Cook Islands	Y	Y	N
Fiji	Y	Y	N
FSM	Y	Y	N
Kiribati	Y	Y	N
Marshall Islands	Y	Y	N
Nauru	Y	Y	N
Niue	Y	Y	N
Palau	Y	Y	N
PNG	Y	Y	N
Samoa	Y	Y	N
Solomon Islands	Y	Y	N
Tonga	Y	Y	N
Tuvalu	Y	Y	N
Vanuatu	Y	Y	N

[Source: Framework for Action on ICT for Development in the Pacific (FAIDP 2015)]

ICT Connectivity (Cont.)

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Table 2: ICT Infrastructure

Countries	Submarine cables	O3B	Planned (what year)
Cook Islands		Y	
Fiji	Y		
FSM			Y (fibre)
Kiribati			
Marshall Islands	Y		
Nauru		Y	
Niue			
Palau		Y	Y – submarine fibre
PNG	Y	Y	
Samoa	Y (American Samoa to Samoa)	Y	Y – submarine fibr e(2017)
Solomon Islands		Y	Y- submarine fibre (2018)
Tonga	Y		
Tuvalu			
Vanuatu	Y		

Submarine Map in the Pacific Region

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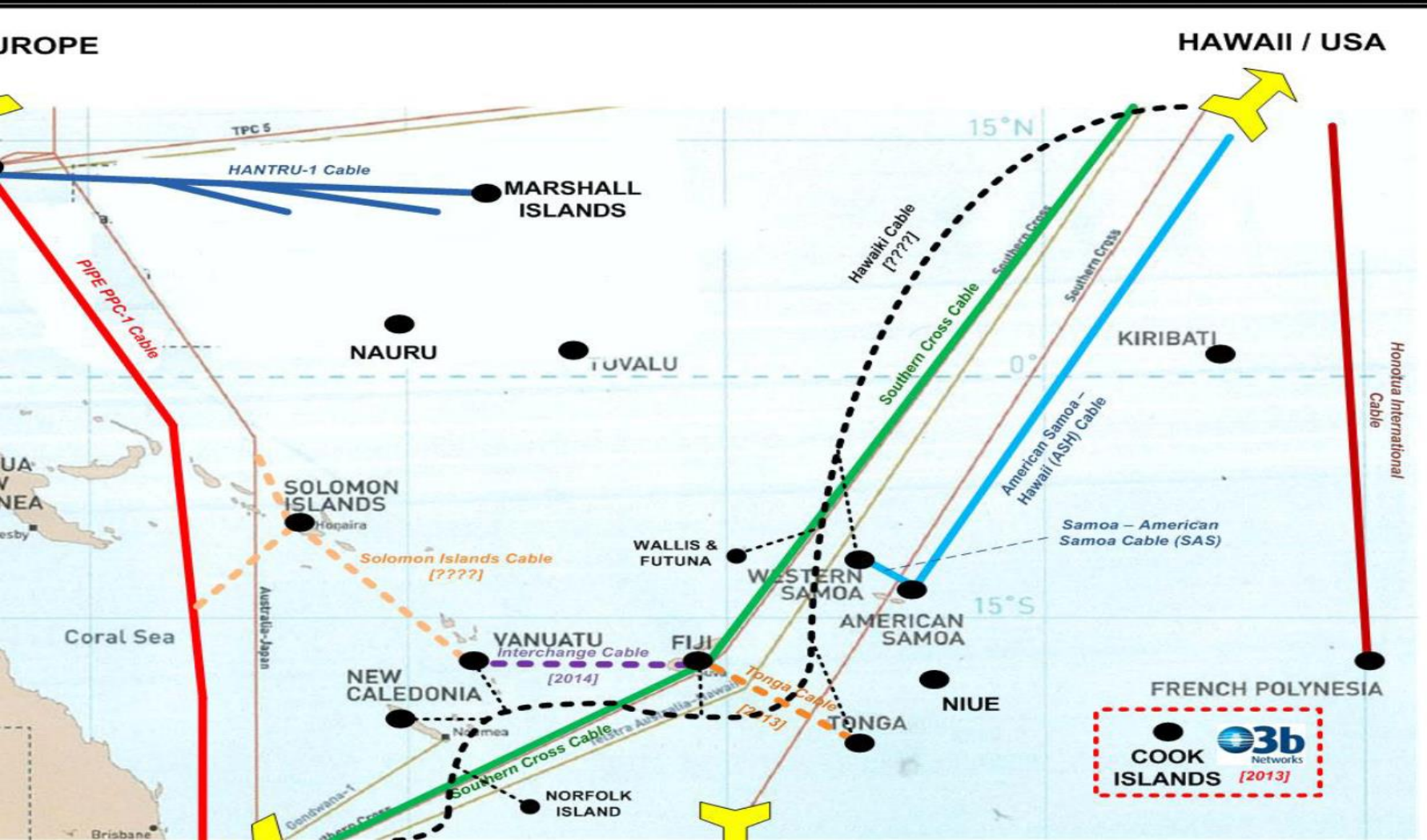

Regulation, Data/Monitoring and Evaluation

- Rapidly changing ICT sector requires a timely and effective way of gathering, M&E developments is critical, as is the effective regulation in this critical sector.
- Good progress made on regulatory side, mainly due to strong support from regional and international agencies such as Pacific Regional ICT Regulatory Development Project based at USP, PITA, World Bank, ADB, ITU.
- Gathering and evaluation of data is still very problematic and time consuming. ICT Ministers called for the CROP ICT WG to address this and a data gathering project is underway with USP.
- Recent PRIF report on the Economic and Social impacts of ICT in the Pacific (2015) provides the most recent information.

Cyber Security

- Comprehensive Cyber Security solution has many elements and while some countries have introduced elements of this, none could be said to have a comprehensive solution.
- International nature of ICTs and the high associated risks, a common good practice approach and templates seems the most effective way forward, suggesting that the PacCERT initiative needs to be ramped up, especially noting that almost all PICTs have been involved in some form of international cyber mal practice.
- Some larger countries are planning their own CERT, lack of capacity, particularly in SIS will necessitate a regional center of excellence approach for some time. Involvement of the financial sector is essential for any Cyber Security initiatives.

Cyber Security (Cont.)

Table 3: Cybercrime Legislation

Countries	Cybercrime Legislation	Strategy to combat cybercrime
Cook Islands	N	N
Fiji	Y	N
FSM	N	N
Kiribati	N	N
Marshall Islands	N	Y
Nauru	N	N
Niue	N	N
Palau	N	N
PNG	N	N
Samoa	Y	N
Solomon Islands	N	N
Tonga	Y	N
Tuvalu	N	N
Vanuatu	Y	N

[Source: Framework for Action on ICT for Development in the Pacific (FAIDP 2015)]

E-Government

- After a strong push for e-Government in 2010-2012, the level of activity has dropped off in many PICTs.
- Lack of capacity is a key issue, especially in SIS, strong leadership is required to reignite this area.
- Proven and sound business cases for e-Government and coordination of capacity building and implementation of such projects can be done at the regional level.
- Effective use of the e-Government expertise and training programmes of the Asian Pacific Training Centre for Information and Communication Technology for Development (APCICT) should be key in moving ahead in this area.

E-Government (Cont.)

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Table 4: E-Governance Plans

Countries	e-Government Plans	Ministries having websites/Portals	e-Services Established	Programmes established digitalize historical records	Programme established capture traditional knowledge
Cook Islands	N	Y	Y	N/A	Y
Fiji	Y	Y	Y	Y	Y
FSM	N	Y	N/A	N/A	N/A
Kiribati	N	Y	Y	N	N
Marshall	N	Y	Y	Y	Y
Nauru	N	Y	N	N	N
Niue	N	Y	N	Y	Y
Palau	N	Y	N/A	N/A	N/A
PNG	Y	Y	Y	Y	N/A
Samoa	Y	Y	Y	Y	N/A
Solomon Islands	N	Y	N	N	N
Tonga	N	Y	Y	N/A	Y
Tuvalu	N	Y	N	N	N
Vanuatu	Y	Y	Y	Y	Y

[Source: Framework for Action on ICT for Development in the Pacific (FAIDP 2015)]

E-Commerce

- E-Commerce is in its infancy throughout the region and is often hampered by lack of supporting legislation.
- Broad national ICT policies are available in almost all countries, but weaknesses in the legal and regulatory instruments required for data protection, cybercrime and electronic funds transfer.
- Most Governments have taken initiatives to develop ICT related policies, laws and regulations but most of these have been ad hoc and in most countries these are incomplete. Not only are the laws required but equally important are the enforcement and monitoring systems and institutions.

E-Learning

- USP remains lead university in the use of ICTs, both through USPNet and use of ICTs in DFL and in transformation of teaching and learning though ICTs.
- Most of the regions schools are not connected to the internet, but there is a growing number of schools with computer labs for the teaching of ICTs. Innovative “Off Line” ICT solutions are showing great promise enabling the delivery of high quality, free teaching and learning resources to schools that don’t have libraries and few text books. These efforts need to be scaled up.
- Training of teachers in the use of ICTs and development of locally relevant multimedia learning resources are key for improvements.
- Development of a Regional Research and Education Network is a priority to improve connectivity and reduce the cost of internet.

E-Learning (Cont.)

Table 5: ICT Education Policy

Countries	ICT Education Policy
Cook Islands	Y
Fiji	Y
FSM	Y
Kiribati	N
Marshall Islands	Y
Nauru	Y
Niue	N
Palau	Y
PNG	Y
Samoa	Y
Solomon Islands	N
Tonga	Y
Tuvalu	N
Vanuatu	Y

[Source: Framework for Action on ICT for Development in the Pacific (FAIDP 2015)]

E-Health

- Many ICT in health initiatives undertaken by the countries. Most countries have developed and implemented health information system at the national and district level leading to better operational and strategic management of health sector.
- Computerisation of the patient records and hospital management including pharmacy and drug supply management, patient management and doctor and nurse scheduling and time management has resulted in overall improvement in the functioning of the health centres.
- Uploading of health data and sharing of patient data between hospitals and clinics is often hampered by low bandwidth and lack of connectivity.
- Telemedicine shows great potential for delivering better health services to rural and remote locations, but again hampered by poor connectivity.

E-Health (Cont.)

Table 6: ICT Health Policy

Countries	ICT Health Policy
Cook Islands	N
Fiji	Y
FSM	N/A
Kiribati	N
Marshall Islands	N
Nauru	N/A
Niue	N
Palau	Y
PNG	N/A
Samoa	N/A
Solomon Islands	N
Tonga	N/A
Tuvalu	N
Vanuatu	N/A

[Source: Framework for Action on ICT for Development in the Pacific (FAIDP 2015)]

Capacity Building

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- Serious shortage of a range of ICT skills throughout the region (including Australia and NZ), but especially in SIS.
- Particularly in the technical areas of cyber security, cloud computing and data management, but also in the Business Analyst and Business Process Re-engineering side that delivers better and more efficient use of ICTs across all sectors.
- Many regional players take an active role in capacity development, mainly in the form of workshops, e.g. ITU, PITA, ICAN, ISOC etc. and most regional universities have IT courses at the graduate and postgraduate level.
- Better alignment between sector requirements and the skills delivered is necessary. Considering the demand for IT skills, more could be done to encourage interest in IT careers at secondary level, especially in girls.

Disaster Management

- The Pacific Leaders have endorsed a regional strategic framework to address the adverse impacts of natural hazards and climate change. These regional strategies include the Pacific Islands Framework for Action on Climate Change, 2006–2015; and the Pacific Disaster Risk Reduction and Disaster Management Framework for Action, 2005–2015, which provides overarching policy guidance for disaster risk management and support for building climate-resilient communities, however ICTs do not feature strongly in these documents. International agencies each have their own ICT enabled systems for early warning and recovery.
- Some local ICT projects have been deployed, particularly in early warning systems and much work has been done on GIS Mapping, but much more can be done to reduce the impact and speed the recovery of the increasing intensity of “disaster events”. The use of social media is becoming pervasive and tapping into this source of local information should be factored into any solutions.

Standards and Templates

- Complex nature of ICTs and lack of regional skills indicates a regional approach of developing standards, templates and frameworks would be valuable.
- Good example is the e-Government Development Framework (including seven key success factors) developed by UNPAN, but similar examples are available in the cyber security, commerce, education and other sectors.
- Such Frameworks applied regionally, allow individual islands to choose the areas that are a priority for them, but to draw on good practice in each area, allowing rapid deployment and consistent reporting.
- Good regional Pacific approach comes from Education and the use of a standardised Education Information Management System approach. Developing regional frameworks for key sectors should be a priority action.

Conclusion

- Rapid development and use of ICTs is crucial to our development and future prosperity
- The CROP ICT WG is working to ensure that all the players active in Pacific Islands ICT development can work closely together to yield better results and avoid wastage of scarce resources.
- In order to ensure that we have more rapid ICT development in the region:
  a) Strong partnership is needed between governments, development partners, regional agencies, and the private sector—this is now possible through the CROP ICT WG.

Conclusion (Cont.)

b) SIS need support with satellite systems: ADB has agreed to include satellite support it is programme.

c) Need to move to applications now that significant cable and satellite developments already in place (e-Commerce, e-Government, e-Learning, e-Health, and e-Agriculture).

d) Competition is vital; we have suffered from monopoly for too long.

e) Collective results will be greater if we have better co-ordination, sharing of infrastructure and services, and adoption of common standards: this is now being facilitated by the CROP ICT WG.

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Vinaka Vakalevu; Dhanyabad; and Thank You

Questions