



Dr Gordon Howell
Mr Chandana Silva

QUESTnet Conference 2008

Outline of this presentation

- PNG Context
- History and Problem
- Member institutions
- Technology
- Project status
- Collaboration with AARNet

**PNG is one of the most diverse countries on Earth
Approximately 6 Million people
over 850 indigenous languages**



PNG Context

87% of the country's population is living in rural areas .

Only 3% of roads are paved and many villages can only be reached on foot.

Most travel between provinces is by air.

The capital, Port Moresby, is not linked by road with the rest of the country.

**Overall the national geography makes the delivery of
Education services very challenging**



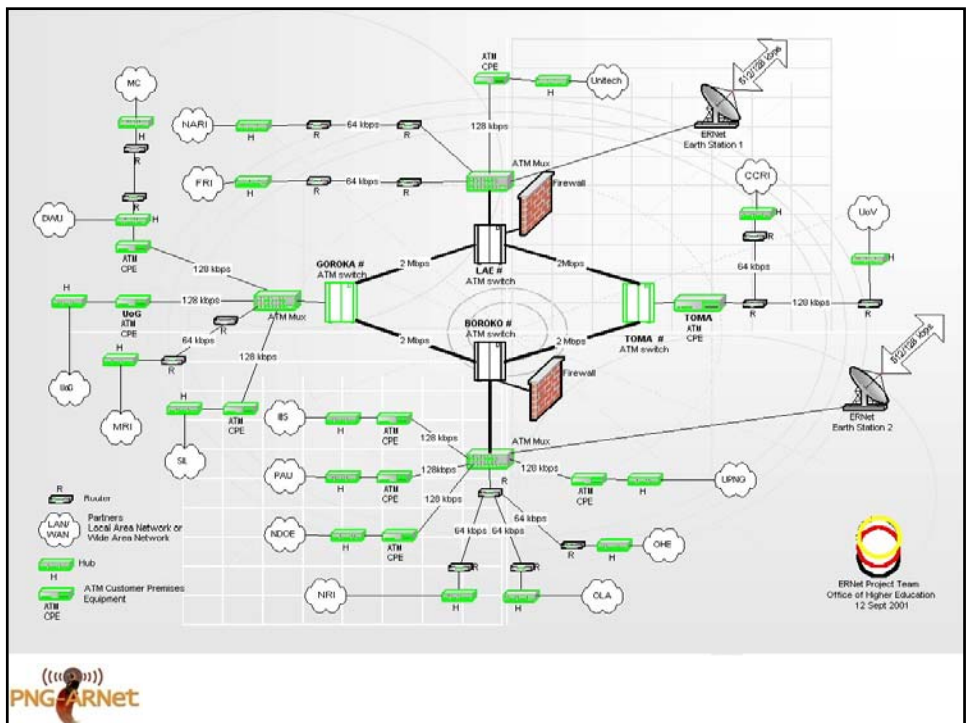
PNG Education and Research Network History

May 2001 CEO of AARNet, Mr George McLaughlin met with PNG Universities to discuss an Education and Research network for PNG

ERNet Proposal

The logo for PNG AARNet is located in the bottom left corner. It features a stylized orange and red graphic on the left, followed by the text "PNG AARNet" in a bold, sans-serif font. Above the text is a small, stylized icon consisting of three nested, slightly offset circles or rings.

ERNet Proposal



PNG Education and Research Network

2001 ERNet Proposal

2001 to June 2008

Each institution has links comprising 64K links



Current Internet connection at Divine Word University, Madang
ISP = Global Internet Service Ltd.
Carrier = Telkom PNG

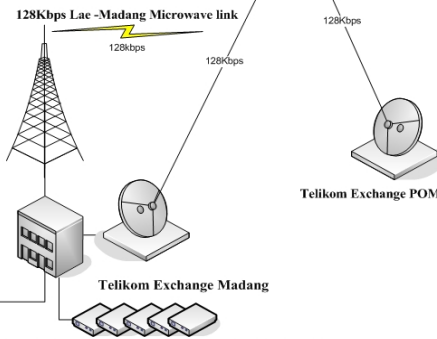
Current Internet connection of 64Kbps is maximum of 4 people can be on-line at one time
DWU itself 2000+ Users are needed to access Internet, e-mail and Online Databases etc.



Divine Word University



64Kbps Serial Modem



Approximately 15+ lease line costumers are sharing 128Kbps link,
Madang Lutheran School of Nursing, Madang College of Allied Health Sciences,
Madang Teachers' College, Open Campus of UPNG, the Maritime College,
and the Madang Technical College share lines with the rest of Madang,
including the prime tourism businesses, new mining enterprises

DWU IT Services Department 2006



2006 slide from DWU infrastructure presentation

PNG-ARNet Pilot Project

May 2006 Prime Minister of Papua New Guinea (Sir Michael Somare) launched pilot project at DWU based on satellite technology

2.4m Ku Band receiver

Download 1024Kbps

Upload 256Kbps



Leading Learning in PNG

Using satellite technology since April 2006

Campus wide network since 2000

4km Fibre

Structured cabling

900+ computers

Leading in PNG-ARNet

Track record in delivering on aid projects



Satellite dishes



DWU e-research centre



DWU Friendship Library

PNG Academic and Research Network 2008 and onwards

3.7m C band Antenna at DWU

Download 5Mbps

Upload 1Mbps



PNG Academic and Research Network



PNG-ARNet Services

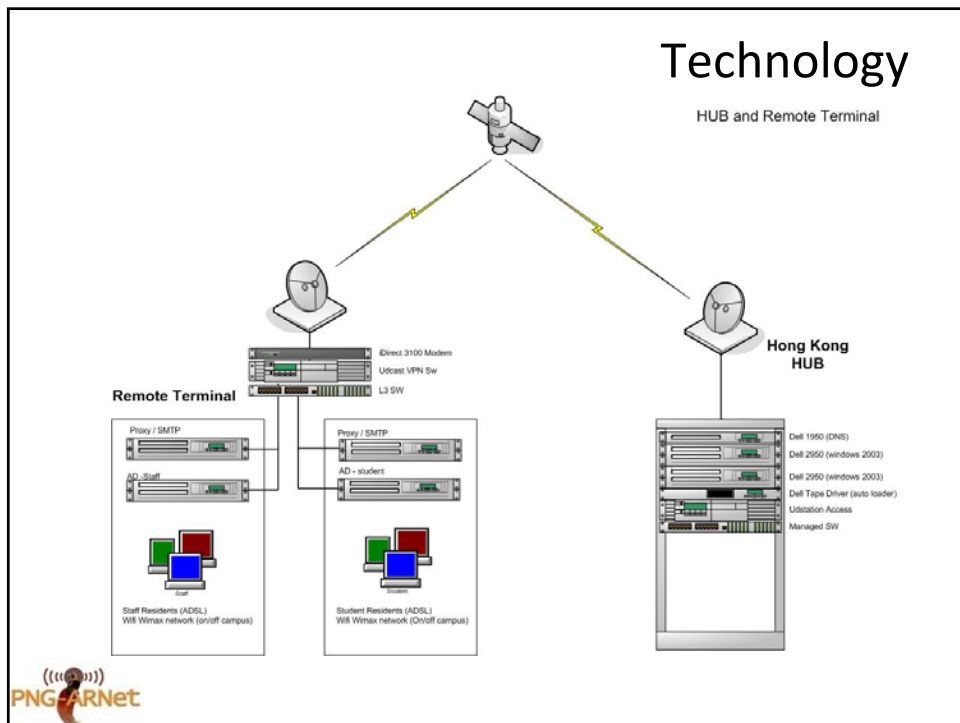
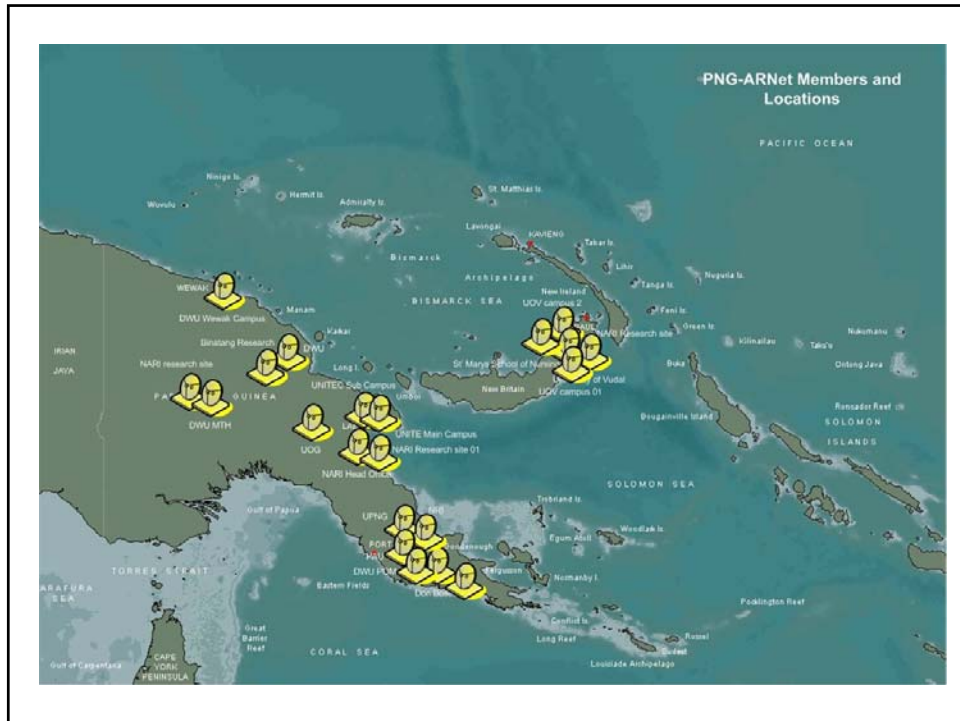
Email for all users
Internet access for all users including access to full text databases.
E-Learning courseware (e.g. Moodle) availability 24/7
Shared data stores and collaborations with other universities
Real-time videoconferencing
Real-time online research capacity
Access to the international education and research networks



PNG Universities and Research institutes

- Institute of National Affairs (INA)
- National Department of Education (NDOE)
- Commission for Higher Education (CHE)
- Office of Higher Education (OHE)
- Office of Libraries and Archives (OLA)
- Pacific Adventist University (PAU),
- PNG Forestry Research Institute (PNGFRI)
- PNG Medical Research Institute (PNGMRI)
- PNG National Agricultural Research Institute (NARI)
- PNG National Research Institute (NRI)
- PNG University of Technology (Unitech)
- PNG Summer Institute of Linguistics (SIL)
- University of Goroka (UOG)
- University of Papua New Guinea (UPNG)
- University of Vudal (UOV)
- Divine Word University (DWU)







Technology Implementation



Is real Challenge



Hong Kong Data centre

DNS and Web Servers Open Source (FreeBSD)
e-Learning Server (Moodle)



Project Status

May- June 2008
dishes installed at 21 sties
including

DWU	7
Unitec	2
UPNG	1
PAU	1
UOG	1
UOV	2

NARI	6
NRI	1

In progress
IMR



Project Status

2 July 2008

Permit approved by PANGTEL
System goes live



PAPUA NEW GUINEA
RADIOCOMMUNICATIONS & TELECOMMUNICATIONS
TECHNICAL AUTHORITY
RADIO SPECTRUM ACT 1996

Permit Type: Permit for VSAT Satellite Network
Permit No.: PNG 8581-0-01

Pursuant to and in exercise of the powers and authority conferred upon PANGTEL by Sections 9 of Radio Spectrum Regulation 1996, the Permit No. PNG 8581-0-01 (PERMIT) is hereby granted to PNG-ARNet to build and use a VSAT Satellite Data Network in accordance with the general particulars of Schedule 1 and subject to the conditions in Schedule 2 attached hereto and each other, until such time as PANGTEL may from time to time determine.

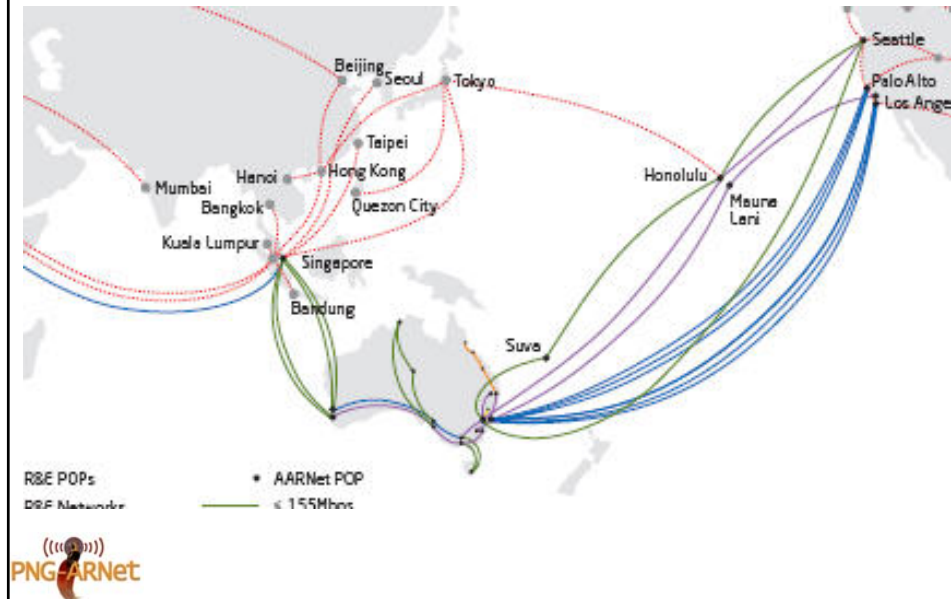
Issued by the authority of PANGTEL

SCHEDULE 1 - GENERAL PARTICULARS

Radio System	VSAT Satellite Network
System Operator	03586170 2009
Date of Entry	January 2, 2009
Name	PNG-ARNet
Postal Address	C/- PNG-ARNet, P.O. Box 1111 RD 104403 Madang, Madang Province
Satellite Operator	ASIASAT Ltd
Transponder Centre Frequencies	C Band
Uplink (MHz)	5870.125 MHz
Down Link (MHz)	4081 MHz
Earth Station Locations	
Hub:	Hong Kong Data Centre
Remote Terminals:	Unitech 1-2, UOG, UPNG, PAU, UOV 1-3, NRI, NARI 1-6, DWU 1-7, Total of 23
Terminal Characteristics:	Refer to Schedule 3

NOTE: THIS PERMIT MUST BE EXHIBITED WHEREVER THE STATIONS ARE LOCATED.

Future Opportunities



Future Opportunities

Signed MoU with AARNET 1 July 2008 in Port Moresby by
 Mr Chris Hancock (CEO AARNET) Hon Michael Ogio, CMG, CBE, MP (PNG Minister for
 Higher Education) Fr Jan Czuba (Chairman PNG-ARNet)





Future Opportunities Autonomous e -Centres

Provides an ICT Solution for remote sites
Comprises VSAT,
Prefabricated building
Solar /wind power solution
Complete wire and wired Network supporting up to 10 computers
directly and many more via the wireless link
Provision of Remote surveillance cameras for security and
monitoring prepose



Questions



The University of Goroka



Leading Learning in PNG



Dr Gordon Howell

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Grad Dip Com Comp, MBA, EdD, MACS
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Dr Gordon Howell is currently Manager Learning Environments Support at Queensland University of Technology. In this role he is responsible for the support and enhancement of the technology in the university's 200 lecture theatres, lecture rooms, tute rooms, and video conference facilities and the deployment and operation of QUT's 3000 (Approx) public access computers.

Dr Howell is also Technology Advisor to Divine Word University (PNG), and has provided strategic advice on the introduction of PNG-ARNet.

He has had in excess of 20 years experience within education and technology management; having worked as a Research Fellow at the University of Queensland; Manager Client Support Services (IT) at Australian Catholic University where he was responsible for the management of the IT and technology support for Australian Catholic University's 1000 staff and 10 000 students encompassing 6 campuses in 4 states with 200 learning spaces; and as Acting Director IT where he oversaw the introduction of the first end to end VoIP network in the Asia Pacific.

Dr Howell has provided consulting services both within Australia and PNG for high quality, sustainable IT solutions. His particular area of interest is appropriate technology deployment supporting the learning paradigm of social constructivism.



Mr Chandana Silver

Email: csilva@dwu.ac.pg

Chandana Silva has been the IT manager at Divine Word University since 2003. During this time DWU has deployed a campus network based on fibre backbone, structured cabling, with both satellite and terrestrial internet links. Chandana's involvement has enabled DWU to become the leading institution in the planning and implementation of PNG-ARNet. Chandana is currently the operations manager for PNG-ARNet.

