



NATIONAL INFORMATION & COMMUNICATIONS TECHNOLOGY AUTHORITY

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Office of the Chief Executive Officer

October 6, 2016

Our Ref : CE14/1/1

Honourable Jimmy Miringtoro, OBE, MP
Minister for Communications and Information and
Member for Central Bougainville
Ministry of Communications and Information
PO Box 1122
WAIGANI 131
National Capital District

My Dear Minister Miringtoro,

SUBJECT : UAS PROJECTS

As you may be aware, the UAS Board (Board) is required under *Section 108* of the *National Information and Communications Technology Act 2009* (the "Act") to identify, develop and estimate the indicative cost of UAS projects annually. The projects take into consideration the Government's Policy Objectives insofar as Universal Access and Service is concerned.

Further, the Board is required to prepare a Project Report to be submitted to the UAS Board for consideration in accordance with *Section 108* of the Act. Facets of the Project Report include Project Identification, Development and Cost Estimates. In identifying the Projects, the UAS Secretariat also undertook a Public Consultation and received from stakeholders submissions on proposals for Projects.

In accordance with *Section 108 (3)* of the Act, the Project Report is to be submitted to your good office for your consideration. The Project Report is attached hereto this letter.

The Report highlights that the Projects earmarked for 2016 Target Infrastructure:-

a) Expansion of Voice and Mobile Data Services

This Project will build on the Voice Telephony Project completed by Digicel this year and aims to provide a basic Voice Services and Internet Services to the Rural and Remote Communities of PNG:-

b) Connect the Schools

This Project will seek to expand Internet and provide Broadband Services to all Primary and Secondary Schools and in the country.

The Projects are ranked with the respective costs in the order in the Table below:-

Rank	Project	Comments	Indicative Cost
1	Connect the Schools	<ul style="list-style-type: none"> • Can be sustainable with a one-time capital subsidy; • Technically feasible 	K2 2 million
2	Voice and Mobile Services	<ul style="list-style-type: none"> • Can be sustainable with a one-time capital subsidy; • Technically feasible 	K20 million

Implementation of the Projects is subject to the payment of Operator Levies by Licensed Operators, which will be actively pursued following your consideration of this Submission. Pursuant to *Section 108 (5)* of the *Act* you further required to (a) review the UAS Project Report; and (b) determine from the list which UAS Projects will be implemented within the proposed aggregate budget; and (c) notify this Decision to the UAS Board and NICTA within sixty (60) days of receipt of the Project Report.

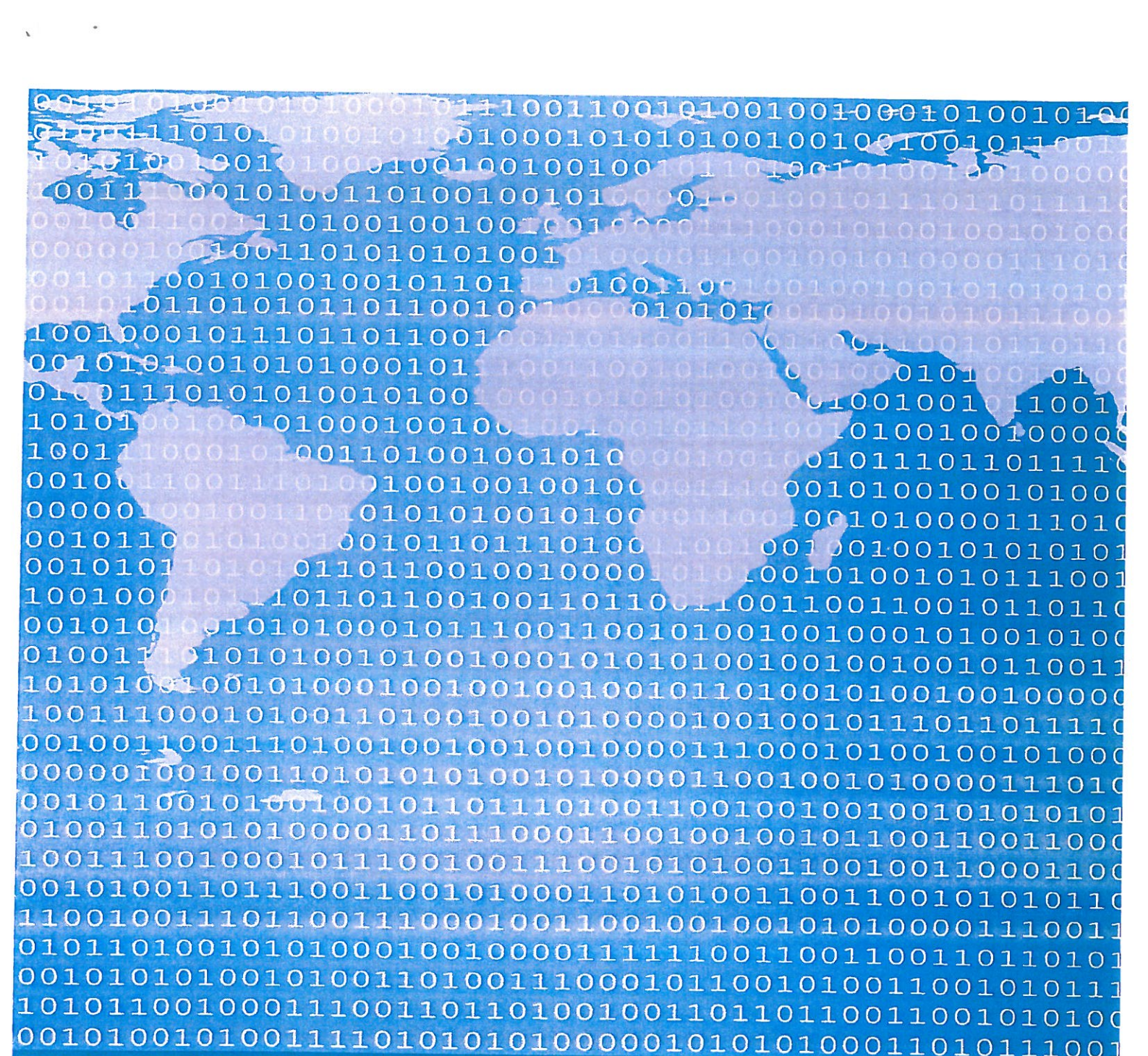
The UAS Project Report 2016 attached hereto is submitted for your consideration and appropriate action. Should you require further information and or clarification, please do not hesitate to contact myself or Mr. Kila Gulo-Vui.

In concluding, we draw your attention to *Sub-Section 108(6)* of the *Act* which stipulates that if you do not notify your Decision under *Sub-Section 108(5)* to NICTA and the UAS Board within sixty (60) days of receiving it, you then be taken to have rejected all UAS Projects identified in the Project. The reasons for your rejection will need to be notified to NICTA and the UAS Board pursuant to *Sub-Section 108(7)*. We further note that this Report has been hand delivered to your office on Friday 19th August, 2016.

Yours sincerely,

CHARLES S. PUNAHA
CHIEF EXECUTIVE OFFICER

CC : Ansgar Palauva – Chairman, UAS Board
 : Paulias Kornu – Member, UAS Board
 : Hakaua Harry – Member, UAS Board
 : Dr. Ken Ngangan – Member, UAS Board



UAS PROJECTS 2016

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1. Background

Information and communication technologies (ICT) have become synonymous with modern day life. Whether its business, pleasure or social, one cannot do without a mobile phone, laptop or tablet pc and as consumers demand more content, the need for more bandwidth grows. The world as we once knew it has significantly changed.

In PNG, the ICT market has experienced considerable growth since the introduction of competition in the mobile market in 2007. Digicel PNG, an Irish owned company, has immensely contributed to this growth with an aggressive drive and expansion throughout the country since entering the market.

Despite the progress, it is estimated that more than 50% of the estimated 8 million population lack access to basic telephony services. Papua New Guinea (US\$1480 GNI/Cap) has mobile penetration of around 50% but less than 10% mobile broadband penetration, mostly in major cities where 3G service is rolled out. Total PNG International Internet connectivity from operator reports is 3100 Mbps which represents about 0.42 Kbps per population

The UAS Board is charged with the mammoth task of encouraging the development of ICTs and ensuring that such services are available to all people regardless of whether they live in the rural, mountainous geographic landscape or in the urban jungles of the country.

The Board is required to prepare a Project Report to be submitted to the Minister for consideration in accordance with s.108 of the Act. Hence, this Report highlights the access gap that exists in the country and identifies the projects that will address the access gap.

The Projects are consistent with the National Broadband Plan and the Government Development Plans including Vision 2050 and Medium Term Development Strategy.

2. Access Gap

In order to determine what projects may be undertaken, it is important to understand the access gap that exists in the country. The access gap is simply the rift that exists between those that have access to ICT services as compared to those that don't. Closing this access gap is one of the primary objectives of the UAS regime.

In a report by Great Village International Consultants (GVIC)¹, an access can be illustrated using Figure 1. As depicted, the figure shows three main categories: the existing coverage; the efficient market gap; and the access gap or the coverage gap.

An excerpt from the Report explains the three areas as follows:²

¹ Report on Determination of UAS Fund Levy Amount, Great Village International Consultants

² Africa's ICT Infrastructure: Building on the Mobile Revolution-Directions in Development Infrastructure, 2011, by Mark D. J. Williams, Rebecca Mayer, and Michael Minges. © 2011 The International Bank for Reconstruction and Development / World Bank. And Mayer, Rebecca, Ken Figured, Mike Jensen, Tim Kelly, Richard Green, and Alvaro Federico Barra. 2009. "Connecting the Continent: Costing the Needs for Spending on ICT Infrastructure in Africa." Background Paper 3, Africa Infrastructure Country Diagnostic, World Bank, Washington, DC. And World Bank discussion paper by Navas-Sabater, Dymond, and Juntunen (2002) and further developed in a Regulator/World Bank study by Stern, Townsend, and Monedero (2006).

- **Existing Coverage:** The inner rectangle illustrates the country's existing population coverage for a given telecommunications network or service. In a market driven only by economic forces, service providers will initially serve the areas with the highest revenue potential and the lowest cost per subscriber (e.g., the most profitable market segments).

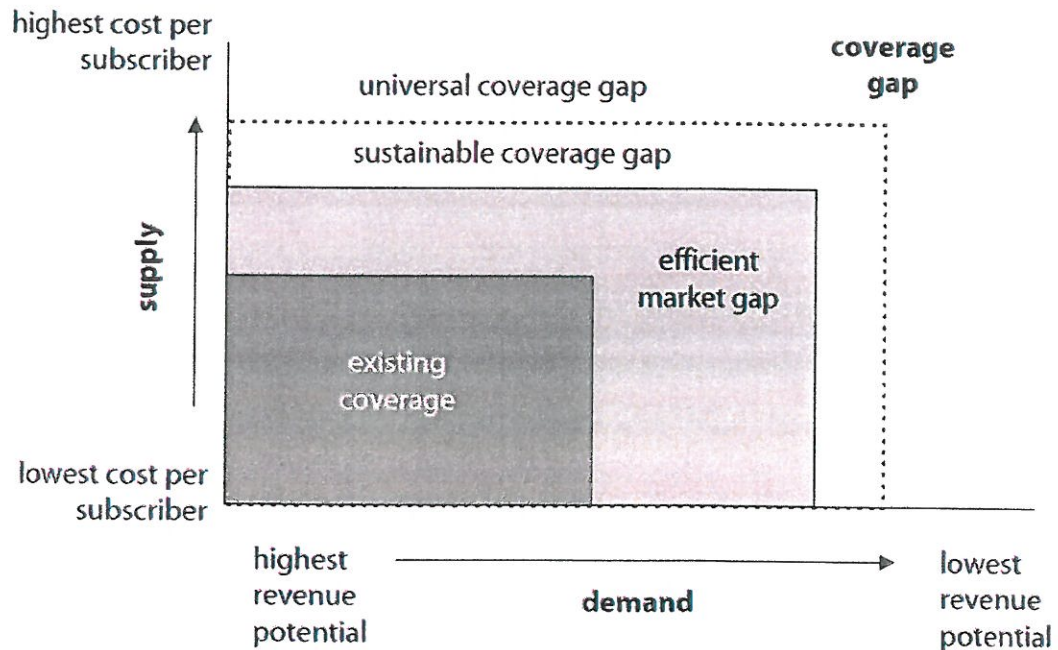


Figure 1 Access Gap Analysis Framework

- **Efficient Market Gap:** Over time, service providers will expand their service toward the efficient market coverage frontier, where commercially profitable service is possible. However, service providers will not offer service beyond this frontier, as it is unprofitable without public intervention. The efficient market gap is the difference between existing coverage and the coverage that would be commercially viable if efficient competition existed. Coverage of the Efficient Market Gap may be delayed due to poor regulation, political risk, lack of competition, lack of financing, or simply the operational inability of operators to rollout service across these areas quickly enough;
- **Coverage Gap:** The areas where constructing and operating a network and offering service would not be commercially feasible. This coverage gap comprises two sub-gaps:
 - **Sustainable Coverage Gap:** areas where sufficient revenue potential exists to cover operating costs and profit, but not initial capital investments for required network infrastructure;
 - **Universal Coverage Gap:** all remaining areas with insufficient revenue potential to support commercially viable service provision.

The Report highlights that to estimate the status of ICT gaps in PNG, the estimated costs and revenues to provide coverage in specific geographic regions can be calculated (if data is available) to assess whether service can be provided on a commercially profitable basis in each region. The objective of this analysis is to assess whether a geographic region holds enough revenue potential to support minimum network infrastructure required to provide initial coverage (not to calculate the cost of infrastructure required to fully meet all demand). If the region does have sufficient revenue potential, but no network exists there, the region is included within the efficient market gap (i.e. coverage can be provided on a commercially viable basis in the future). If it does not, then it is included within the coverage gap and the cost of investment required to provide minimum network coverage must be determined.

To calculate the access gaps, at least four factors are often considered:

Market Gap Factor	Factor Used to Estimate...
1. population density	Revenue potential of voice telephony services in specific geographic regions
2. income distribution	
3. terrain	Cost of providing coverage in the area
4. size of the wireless cell site	

3. Market at a glance

Having demystified the concept of the access gap analysis, it is equally important to understand or at least have a glimpse of the ICT market in PNG.

GVIC's Report highlights that of the current PNG population of about 8 million; approximately 2.5 million residents have access to basic telecommunications services. An additional 2 million subscribers are likely within the anticipated operator commercial rollout plans that can be expected to be implemented in the next few years. This still leaves about 3.2 million PNG residents, or nearly half the population, who are unlikely to be served by market-based expansion in the foreseeable future. The following provides rough estimates of subscriber numbers and market growth potential in PNG, based on discussions with operators:

- **Digicel** – approximately 2.2 million subscribers at mid-2013, although its existing network evidently had sufficient capacity to serve 3.5- to 4-million subscribers. They are continuing to expand, with intentions to roll out additional infrastructure and services to currently unserved areas. However, new competition from a revitalized Be Mobile, and/or other market expansion, may limit Digicel's ability to grow its customer base substantially.
- **Bemobile** –estimated to have 10% of the mobile market, implying approximately 200,000 subscribers at mid-2013. The new investors, Vodacom, have indicated plans to make substantial new investments in competitive infrastructure and new service access, although details remain uncertain. A rough net growth of 1-million new users beyond current market size is a plausible forecast.
- **Telikom** subscribers of 100,000 – of which 60,000 are fixed line subscribers and 40,000 are fixed wireless CDMA subscribers at mid-2013. Telikom is likely to be a lead player in expanding fixed services, such as broadband and Internet access, beyond Port Moresby.

The current mobile penetration rate in PNG is approximately 36%, while the mobile broadband penetration rate is less than 3% - mainly in major towns where 3G service is rolled out. Total PNG International Internet connectivity, according to operator data, is 3100 Mbps, which represents about 0.42 Kbps per population.

Current Internet traffic flows in PNG are limited, such that simply spreading this traffic over existing sunk costs of international transmission results in high per unit costs per Mbps / Mbyte. Measures which encourage lower prices for internet access and stimulate demand could result in a virtuous circle of increasing traffic, such that the cycle of declining per unit prices and increasing demand could accelerate Internet use.³

Currently available Internet service in the rural areas of PNG is very basic (typically 2G -GPRS / EDGE – low speed mobile internet) for the general public and some dedicated links and VSATs for specific business or institutional use. Mobile Internet in 2014 is not reasonably affordable to the general population in rural areas. The retail price for Internet access is very high (typically 10 times regionally comparable levels); and take-up is very limited (1-2 %) in comparison to similar economies (10- 15%).⁴ Broadband access is barely available outside the main urban centres and only available via satellite in rural areas.

Although rural access is limited, this availability still indicates a major improvement from several years ago, when there was virtually no rural internet access. Rapid roll-out of mobile networks has enabled this. Terrestrial microwave Internet transmission costs are much lower than VSAT based service. A small though growing fraction of users (mainly in urban areas) have their own 3G devices (although in rural areas they may be using it in conjunction with a 2G network).⁵

Operators continue to rollout 2G services in rural areas rather than 3G. PNG has no current Internet/broadband policy or coverage and take up objectives.

Whether delivered by 2.75G or 3G devices, PNG mobile operators currently offer prepaid mobile data at PGK 0.09-0.10 per MB (US\$33 - \$36/ GB). As a result, modest usage of 100MB of data per month (email, limited browsing, no video) would cost about PGK10 (\$3.60) per month. As rural incomes are far lower than national public service incomes (e.g. teachers), service affordability in rural areas is much lower at current prices and the need for expenditure of an additional PGK10 per month may be a significant deterrent to demand growth.⁶

Network Infrastructure in PNG in 2014⁷

There is a very extensive (and expanding) network of towers (for mobile coverage). As a result, many unserved or underserved localities are within microwave link reach of that network (although for more remote areas, VSAT connection would be required).

³Extracted and edited from Page3, Rural Communications Project (P107782): Part 2 - Increased Internet Access in Rural Areas: A review of Circumstances, Drivers and Options for NICTA Consideration. April 2014.

⁴World Bank data: broadband Internet access in PNG in 2012 (nationally) 2.3%of population, including all population centres. In rural areas it is much less and because of income disparities is much less affordable.

⁵Extracted and edited from Page15, Rural Communications Project (P107782): Part 2 - Increased Internet Access in Rural Areas: A review of Circumstances, Drivers and Options for NICTA Consideration. April 2014.

⁶Extracted and edited from Page22, Rural Communications Project (P107782): Part 2 - Increased Internet Access in Rural Areas: A review of Circumstances, Drivers and Options for NICTA Consideration. April 2014.

⁷Extracted and edited from Pages 14-15, Rural Communications Project (P107782): Part 2 - Increased Internet Access in Rural Areas: A review of Circumstances, Drivers and Options for NICTA Consideration. April 2014.

The existing microwave transmission backbone and access to international internet capacity (via submarine cable) are potentially bottlenecks in and around Port Moresby. The APNG-2 cable, which has a total capacity of 1.13Gbps, presently carries Internet capacity of between 0.3 Gbps and 0.4 Gbps for international private lines (possibly also mostly IP/Internet traffic) and voice. There appear to be limitations on the existing microwave links across the Owen Stanley ranges to Lae and Madang (which has a current capacity 1.1Gbps). The ongoing NTN project is addressing this issue but will take some time to be realized.

In the short-term the readily available Internet capacity from Madang (2x10 Gbps - of which currently 1.4 Gbps connected to Sydney and 0.5 Gbps to Guam is actually in use) could be used to provide Internet access in the central highlands all the way to the Indonesian border as well as along the Northern coast and New Britain using existing microwave transmission networks. The cost of Internet from Madang is likely to be much lower and less limited than from Port Moresby. A prerequisite for mobile Internet/broadband is a mobile packet core on the northern side of the Owen Stanley range. Digicel has confirmed that it has a mobile packet core in Port Moresby and Lae. Mobile networks which only have a central packet core in Port Moresby will be challenged.

Anticipated Development in Network Infrastructure and Services 2014-2016⁸

Medium term developments anticipated to 2016 in PNG (based on the status of the market in April 2014) can be summarized as follows:

Supply side

- Another 300-400 base stations are planned for roll-out in 2014, many in rural areas providing more very basic (2G) mobile Internet service;
- Recently established (last 12 months) rural base stations are capable of being, and some will be, upgraded to support 3G/HSPA+. Fortuitously, these base stations are toward the edge of the current network and hence most relevant to delivery of Internet to rural communities.
- Technological developments will continue to make further cost-effective roll-out of solar powered (instead of requiring generators and fuel supply), 100% outdoor base stations feasible;
- The National Transmission Network, both the fibre optic component and the microwave component, will be deployed resolving current capacity bottlenecks in the backbone;
- Fixed broadband deployment in the major cities will expand (80,000 ports contracted);
- Access to commercially workable wholesale International capacity for others besides Telikom may eventuate with DataCo management of fibre gateways. The total Internet supply side will be held back significantly if the largest mobile operator continues to be dependent upon high cost, low quality, and satellite connectivity. This will be reflected in reduced competition in the Internet access market and relatively high tariffs.

Demand side

- Rural Internet demand, and in particular mobile Internet, will grow only gradually due to relatively high tariffs in combination with people often not fully understanding what the Internet actually has to offer; hence the actual usage will remain relatively low.

⁸Extracted and edited from Pages 11-13, Rural Communications Project (P107782): Part 2 - Increased Internet Access in Rural Areas: A review of Circumstances, Drivers and Options for NICTA Consideration. April 2014.

- Global technology developments should be available to assist accessibility of terminals as mobile internet capable devices are rapidly becoming more affordable and suitable for rural use.

Initiatives to close the Efficient Market Gap

A number of very important regulatory issues have been addressed by NICTA and these, in combination with the demonstration projects described below, will assist in a relatively high percentage of the population being brought into reach of basic (mobile) Internet access. However a number of major issues are still to be addressed, which would help close the efficient market gap by removing barriers to competitive, commercial market growth:

- Reduction of the price of wholesale International capacity. Wholesale IP Transit in PNG could be driven from around US\$1200/Mbps to levels below US\$100/Mbps⁹ and should be bought in wavelengths (10 Gbps) instead of being counted in 10's or 100's of Mbps. Typical satellite capacity (C/Ku band) is typically in the US\$1000 – \$2000/Mbps category while O3B (Ka band) is reportedly in the US\$500/Mbps range. Volume should increase significantly to allow for a proper return on the fibre optic investment made. Those costs are mostly sunk-costs and it would be beneficial for PNG to spend a similar or slightly higher amount of money on the International connectivity and to acquire an orders of magnitude higher capacity in return. PNG operators and the Government coordination might be required to resolve this issue.
- Access and pricing to International and domestic fibre optic backbone capacity should be non-discriminatory and cost based. DataCo and NICTA intervention can achieve this.
- A second high capacity fibre optic International connection should be established to provide resilience. Given the relatively high cost this will be challenging. A shared effort between all major operators and the Government will be required to realize this.
- The single domestic fibre optic backbone should be extended and an alternative fibre optic route should be built to provide resilience. Given the relatively high cost this will be challenging. A shared effort between all major operators and the Government will be required to realize this.
- Low-speed mobile Internet will be insufficient to cater for the internet services required to provide modern services to the rural areas (or any area). Upgrade to high-speed mobile broadband (3G/HSPA+/LTE) will be required. The combination of solving the backbone issues and anticipated technological developments is likely to bring this within commercial feasible range, also for many rural locations.
- Fixed broadband (fibre optic) connectivity to government offices, business users, schools, hospitals, etc. is still to be deployed. A demand side action from the Government can trigger deployment in locations relatively close to the fiber optic backbone.
- Development of e-government services, on-line educational services and healthcare by the Government can be key drivers to provide additional value to having rural Internet access. This will help to create more demand for Internet access and enables further commercial roll-out of broadband access.

⁹Telegeography reports IP Transit prices in Sydney at 10 Gbps level between US US\$20-30/Mbps, down from US US\$100+/Mbps in 2008. These prices are basically using the same, or similar, sub-marine cables as the PPC-1 used in PNG so there is no real reason for a major cost difference between landing capacity in Madang or in Sydney as long as procurement is using the minimum level of a wavelength

Current PNG UAS Projects to Confirm Costs to Eliminate Access Gaps

NICTA is already undertaking two important UAS demonstration projects, with funding from the World Bank.¹⁰ These projects are summarized below and provide an indication of scale of costs and needs for UA within PNG. These projects are intended to test approaches and inform future UAS programs.

Voice Telephony Project¹¹

The Independent State of PNG signed a contract with Digicel on May 16, 2014 to roll-out mobile telephony services in 59 sites across all 4 regions of PNG. The project has benefited nearly 500,000 people in rural areas. Implementation and physical roll-out is currently estimated to be completed by end-October, 2014. The roll-out combined with existing initiatives by the mobile operators Digicel and Bemobile, boosted total population coverage from about 20 percent in 2009 to around 93 percent by the end of 2014. The total UAS Fund subsidy cost to support these deployments is \$ 7million using funding from the World Bank.

3G Upgrade¹²

NICTA is also implementing two UAS demonstration projects for Internet access, with \$5.1 million in funding from the World Bank. The projects provide for

3G Upgrade – Broadband Expansion of Existing Networks

This component is implemented in two phases with an initial funding of USD 4million that will provide a one-time capital subsidy to build and/or upgrade existing networks from 2G to 3G/3G+/4G in unserved rural areas to provide significantly increased broadband Internet access and take up across the country. This component is expected to require approximately 80% of the US\$5.1 million project budget (about US\$4 million). The primary goal is to facilitate service availability to the greatest population and provision to the largest possible number of users. The newer upgradeable sites are not surprisingly located on the edge of the current network and in areas furthest away from population centres, which is advantageous for rolling out 3G service to more remote rural areas.

The second phase on the project is currently being tendered and will be supported with a budget of USD1.5 million.

Conclusions Regarding Expected UAS Costs in PNG

To meet the UAS needs and eliminate the access gaps identified above in all underserved areas of PNG, for both voice as well as data/Internet services, the total universal access/service subsidy costs are estimated to be in the range of US\$150 – \$200 million. This estimate takes into account factors including the following factors specific to PNG:

- Limited existing network infrastructure and services in PNG;
- access gaps identified earlier in this report;
- low GNI/Capita (US\$1480);
- large and disparate underserved populations in rural areas;
- mountainous territory; and

¹⁰Information extracted from World Bank Aide Memoire August 7, 2014

¹¹Information extracted from World Bank Aide Memoire August 7, 2014

¹²Information extracted from World Bank Aide Memoire August 7, 2014

- high-cost deployment challenges

As detailed above, the scope of investment needed to expand and upgrade ICT access throughout all of Papua New Guinea is substantial. There is very limited telecommunications infrastructure in rural areas, primarily consisting of microwave networks owned by Digicel and Telikom. Although Port Moresby has an existing fiber optic ring, there is virtually no fiber optic backbone network in rural areas. Provision of basic mobile telephone service to underserved remote areas would typically require helicopters to ferry in equipment, fuel, supplies and repair personnel, due to the lack of roads, electricity grid and the extremely mountainous terrain in many locations. The costs for more advanced networks and services, including Broadband access, would be far greater still. Therefore, it is clear that, the costs of universal access programs focused on eliminating existing access gaps across the country will necessarily be very expensive.¹³

Experience with rural network development in many developing countries indicates that the capital cost (CAPEX) to deploy a single new cell site, for example, can be in the range of at least US\$200,000 to \$300,000, with annual operating costs (OPEX) of up to \$100,000 per site, more for the most remote locations. These site costs are in addition to backbone network deployment, which can require up to \$10,000 per kilometer, and again much higher in very remote areas. For PNG, the need to install at least several hundred new cell sites in rural, largely unprofitable locations, and ultimately to bring high-capacity backbone to those locations to allow for 3G-capable service upgrades, supports the broad estimate of overall subsidy requirements in the range of \$150-million to \$200-million.

This high-level estimate translates to annual UA Fund budget needs of at least US\$15 – \$20 million per year in the near and medium term. It is assumed that UA funds would be applied to provide net subsidies for capital costs and operating expenses for projects to eliminate existing access gaps through a variety of infrastructure and demand stimulation measures, as well as to stimulate additional private market investment and expansion and fund the cost of UA Fund administration.

Assuming that the annual Levy amount will increase as the market grows, Levy proceeds commencing in the range of US\$10-12 million annually would still require at least 10 years of collections to cover the minimum expected costs of a comprehensive universal access and service program for PNG.

4. UAS Projects

Given the above scenario of the market, the Secretariat will focus on infrastructure development. The Secretariat has further identified two projects that will constitute projects for 2016. The first will be Voice and Mobile Telephony whilst the second will focus on Connect the Schools.

The proposed projects are consistent with the National Broadband Policy and support the Government's development plans including Vision 2050 and the Medium Term Development Strategy.

¹³Extracted and edited from Pages 4-5, Rural Communications Project (P107782): Part 2 - Increased Internet Access in Rural Areas: A review of Circumstances, Drivers and Options for NICTA Consideration. April 2014.

4.1. Voice and Mobile Data Connectivity

The first project builds on from where the World Bank funded Rural Communications Project ended. The primary object of the Voice and Mobile Telephony project will be to expand basic voice services and mobile internet access to areas that do not have access to these services.

4.1.1. Impact, Outcome and Benefits

- (1) The Project will provide an expansion of affordable telecom services particularly for low income users in rural and remote areas of PNG.
- (2) The Project will improve the accessibility and quality of telecom services in PNG, particularly in remote and rural areas.
- (3) The increased affordability and improved accessibility will enable inclusive economic growth be facilitating access to markets and information and developing other business relying on telecom service.
- (4) Improved network will enable better access to information, including for public service delivery, education, health and security.

The proposed project is in line with the National Broadband Policy and supports the Government's development plans including Vision 2050 and the Medium Term Development Strategy.

4.1.2. Implementation Schedule

The project is expected to be commence in 2016 and be implemented over a twelve months and could be extended for further term until universal access goals are achieved.

4.1.3. Budgetary Considerations

It estimated that about K20, million is required for this project...

4.2. Connect the Schools

This project aims to provide internet connectivity and broadband services to all primary, secondary and tertiary institutions throughout the country. In addition to internet access, the project aims to provide each school with a computer laboratory equipped with desktop PCs and printers.

The Department of Education is expected to partner NICTA in this rather ambitious project.

The proposed project is in line with the National Broadband Policy and supports the Government's development plans including Vision 2050 and the Medium Term Development Strategy and the Department of Education's e-education Strategy.

4.2.1. Impact, Outcome and Benefits

- (1) The Project will improve the accessibility and quality of telecom services in PNG, particularly to schools in remote and rural areas.
- (2) The increased affordability and improved accessibility will enable inclusive economic growth be facilitating access to markets and information and developing other business relying on telecom service.
- (3) Improved network will enable better access to information, including for public service delivery, education, health and security for the school and neighboring communities.

4.2.2. Implementation Schedule

The project is expected to be commenced in 2016. The project could be extended for a further period until 100 per cent of all schools have broadband access the project could be extended for a further period until 100 per cent of all schools have broadband access.

4.2.3. Budgetary Considerations

A sum of K2 million has been earmarked to trial a number of schools in the country.

5. Recommendations

The Secretariat recommends that the Minister for Information and Communication Technology approves:

- i) Voice and Mobile Connectivity; and
- ii) Connect the Schools

as the proposed UAS Projects for 2016.