



National Broadband Policy, Papua New Guinea

Final Draft

17th July 2013

Foreword
By the Honourable Jimmy Miringtoro,
Minister for Communications & information Technology

The Government of Papua New Guinea has determined that high quality, affordable and widely available broadband services are essential to the future social and economic development of Papua New Guinea. They are important for social inclusion and social expression, and also for the potential for economic transformation and development of these services.

Papua New Guinea is part of the global information economy and therefore needs to put in place a robust framework to capitalise on the existing technologies to facilitate innovation, enhance competitiveness, increase productivity and economic development, to promote greater social inclusion, and to facilitate the sustainable use of broadband services in the future. Broadband has the potential to bring within the money economy many of our citizens who are wholly or partly outside the economy at present. This may take some time, but the Government is determined to make a start on the important broadband journey now.

There are appreciable risks in not adopting such policies, including the risks that Papua New Guinea might become regarded as a country on the periphery of the information economy attracting less investment than it otherwise might.

The Government seeks the cooperation of all sectors of the economy and all segments of society to ensure that we meet the national goals in this Policy and related Plan. We are all stakeholders in this Policy and Plan. By engaging with broadband we will have moved a long way towards securing our national future and our place in the increasingly competitive global economy.

I thank all of those who have contributed to the development of this Policy and Plan. In particular I thank the International Telecommunication Union (ITU) for the valuable assistance and support that it has provided to on this matter. It is important to note that the assistance was from the ITU but the final Policy and Plan are ours.

I commend this Policy and this Plan to all.

Honourable Jimmy Miringtoro,
Minister for Communications & Information Technology

Port Moresby 2013

1. Introduction

1.1 Background

The Government of PNG has decided that high quality, affordable broadband services are essential to future social and economic development in PNG. PNG has a large and dispersed population, with a substantial proportion adopting traditional and semi-traditional lifestyles at the edge of the cash economy. On the other hand, PNG is subject to substantial movement of peoples from villages to major towns and cities in order to be part of a modern economy and to seek paid employment. PNG needs to ensure that its people have access to information and other resources to enable new and innovative skills development across the whole economy and society. Without a widespread upskilling of its people PNG will find it difficult to be a fully engaged, competitive and effective part of the global economy.

To be fully engaged in this way, PNG needs to put in place a robust framework to capitalise on existing and new technologies which facilitate innovation, enhance competitiveness, increase productivity and economic development, to promote greater social inclusion, and to rely on the sustainable use of broadband services in the future. There are appreciable risks in not adopting such policies, including the risks that PNG will not gain international competitive advantage, will be regarded as a country on the periphery of the information age and will attract less investment than it otherwise might.

This National Broadband Policy has been developed to align with the broader planning commitments and national aspirations of the Government of PNG, such as are expressed in *PNG Vision 2050 and the Medium Term Development Strategy*.

Broadband

Broadband is the name given to always on, high speed access services that provide connection to the internet and to other information services.¹ To be effective, a national broadband policy needs to sustain broadband services at capacities that are appropriate to the applications required. Therefore to define a minimum download speed is merely to indicate the lowest capacity service that will be counted as broadband.

¹ A range of definitions are possible as discussed in Chapter 2 of the ITU's Broadband Commission report, *Broadband: A Platform for Progress* (May, 2011). However the recommended working definition at page 19 of that report is the approach adopted in this Policy, namely: "The Broadband Commission sought to focus on considering some of the core concepts of broadband as an always-on service (not needing to make a new connection to a server each time a user wants to go online), and high-capacity: able to carry lots of data per second, rather than the particular arrival speed of the data." (http://www.broadbandcommission.org/Reports/Report_2.pdf)

The importance of broadband is in terms of the applications and services made available. Bandwidth capacity is only important in so far as it enables specific applications and services to be used. For the purposes of this Policy, entry level broadband means services that have a minimum download speed of 512kilobits per second (kbps) as a starting point. The minimum download speed that is recognised as broadband will undoubtedly increase over time. Therefore the Policy makes provision for the National ICT Authority (NICTA), in coordination with the Department of Communications and Information Technology and other relevant stakeholders, to increase entry level capacity definitions as required.

The need to define an entry level broadband service arises in many circumstances. Affordability concepts are especially associated with entry level services, and the universal service scheme, if it is to aid in broadband penetration and service take-up, will concentrate on this level for funding and registration. Services with capacities below the minimum entry level may continue to be provided but will not count for target setting and performance assessment.

Benefits of Broadband

The availability of high quality, affordable broadband services in PNG is essential to facilitate innovation, economic growth and development, and to reinforce social inclusion and cultural norms. The benefits of broadband continue to grow. They include:

- Economic transformation at national, sector and firm levels, and the necessary adaptation of public and private sectors to meet the challenges and imperatives of operating on the global economy. Broadband will transform the way in which transactions are conducted and will redefine the value and supply chains, and the relationships of the parties in such chains
- Productive efficiency as business and government processes are made more effective. In particular broadband will help improve access to information and the cycle times for various processes in the economy. Transactional costs will be decreased and wastefulness associated with existing processes will also be reduced
- Dynamic efficiency as new processes and innovations are encouraged, with innovation leading to further development and improvement
- Social inclusion as people build and reinforce communities online, and support the reach and interactions of individuals and groups
- Unlimited opportunities for personal development and acquisition of new skills
- Greater acquaintance and experience of the external environment in both education and leisure
- Reinforcement and preservation of culture and cultural norms

- Development of new products, services, and applications to enrich the cultural, social and business life of PNG
- Improved public administration and service delivery through the development of e-government online transactions to improve quality, save cost and increase access and convenience. More people will be able to access more Government services more often and more efficiently.

International competitiveness

PNG has some way to go to gain the full benefits of ICT in general, and of broadband in particular, compared to other countries regionally and internationally. To become more internationally and regionally competitive PNG needs to move forward and close the gap with leading countries, particularly in Asia.

On the domestic front, the level of ICT exposure has been increasing rapidly since the introduction of competition in 2007 and is set to increase further in the period ahead, including an increase in internet usage and in broadband access.

1.2 Policy Scope and Practical Focus

This National Broadband Policy provides an over-arching framework with settings to ensure that demand-side and supply-side aspects of broadband infrastructure, applications, services, access and usage are best optimised to meet the objectives and targets that the Policy and associated Strategic Action Plan contain. The Policy is a major part of overall national ICT policy and is aligned with *PNG Vision 2050*.

The Policy recognises that the resources available to the PNG Government are finite and that a substantial part of the broadband burden will need to fall on the private sector. The heavy engagement and involvement of the private sector is a policy preference in any case, but is underlined by the constraints on Government resourcing. Within Government the emphasis will be on obtaining high levels of efficiency in investment, with efforts to preserve resources and keep costs down. This emphasis will not change during the course of the Policy and associated Strategic Action Plan.

The Policy itself is necessarily pitched at a high level, consistent with settings that are intended to remain substantially in place for the longer term. Although the Policy requires regular review and possible adjustment, as do all national policies of this type, it is not expected that the direction of the policy or even the various emphases will change over the short to medium term. Practical focus, with emphasis on specific targets and measurable deliverables, is provided by the associated Strategic Action Plan. This document will also need regular review in light of changing circumstances in PNG, and is much more likely to require change as a result of such reviews than the Policy document.

1.3 Broadband - A Dynamic Policy

Broadband development is occurring in a dynamic social, market and technological context. The opportunities, needs and potential solutions are changing rapidly. Although the settings are intended to have a long term perspective, National Broadband Policy needs to be flexible and adaptive to reflect the pace of change and ensure that the best outcomes are being delivered in PNG at any point in time. This policy is a living policy, and will be reviewed and revised regularly to ensure its maximum currency and effectiveness for the benefit of PNG.

1.4 Acknowledgements

The contributions and suggestions that have been made by various ministries, government agencies and participants in the PNG telecommunications industry to the formulation of this draft have been extremely valuable and much appreciated. Indeed, they are a necessary part of the formulation of a successful broadband policy, which needs widespread support and ownership. In particular the enthusiasm and contributions of all stakeholders at industry workshops in Port Moresby has been most appreciated. Further contributions from all of these sources will be appreciated in the future as the policy is reviewed and shaped to better serve the country and its aspirations.

1.5 Glossary of terms

As used in this Policy and associated Strategic Plan of Action, the following terms have the meanings shown:

- **Broadband** Refers to high speed, always-on communications access services
- **Department** Department of Communication and Information Technology (unless the context suggests otherwise)
- **Entry Level Broadband** Refers to the minimum download capacity associated with a service that will entitle the service to be considered as broadband for policy purposes in PNG
- **Government** Refers to the Government of the Independent State

of PNG

- ITU International Telecommunication Union
- Minister Minister for Communication and Information Technology (unless the context suggests otherwise)
- NICTA National ICT Authority
- Plan Means the Strategic Action Plan associated with this National Broadband Policy, unless the context suggests otherwise
- Policy Means this National Broadband Policy, unless the context suggests otherwise

2. National Development Objectives for Broadband

The development objectives for broadband services are aligned to the Government's vision for the economic and social development of PNG. That vision has been expressed forcefully in *PNG Vision 2050*. Consistent with that vision, national development objectives include:

- Good governance
- Growth in the national economy across all sectors
- Deployment and construction of physical infrastructure to support service delivery, especially in regional and rural areas
- Private sector development and employment
- Capacity building and human resources development

The National Broadband Policy seeks to support those objectives and to transform society and the economy across a large front, so that resulting benefits are extended to all PNG people and communities. Broadband has the potential to substantially contribute to specific sector goals as well.

The specific objectives of the National Broadband Policy are set out below:

2.1 Achieve higher economic growth and economic efficiency while ensuring sustainability

- Contribute to the increased economic welfare of PNG and its people
- Create sustainable employment opportunities and enrich and enhance jobs
- Make PNG more attractive for commercial activity and investment
- Achieve higher economic efficiency in terms of transactions, processes and effectiveness.

2.2 Promote social growth and cohesion

- Advance social inclusion and cohesion in all ways, especially through modern communications
- Preserve PNG's cultures and traditions through the use of new technologies
- Promote community ownership and support for continued and improved broadband services through improved access and usage
- Provide high speed broadband access for all communities, schools, homes and businesses in PNG

2.3 Enhancing Public and Private Sector Efficiency and Performance

- Improve efficiency, effectiveness and reach of government services through specific eGovernment initiatives
- Provide broadband enhanced business and community services by both the private and public sectors
- Improve efficiency and productivity of all sectors of the economy

2.4 Facilitating ICT and general education through broadband

- Deliver broadband-enhanced education in all schools including the development of relevant ICT skills at all educational levels resulting in curriculum extension, choice and improved quality of education
- Increase ICT understanding and skills of the entire population, especially to ensure that skills are developed to match future economic needs.

2.5 Improving health service delivery

- Provision of broadband-enhanced health services to all communities through remote diagnostics, enhanced professional assistance to field health care providers, coordinated patient databases and access by people and professionals to better medical information online.

2.6 Enhancing Global Integration and International Relations

- Connect PNG businesses and communities with the world
- Enable easy and affordable access to markets and counterparties overseas, reducing the cost of doing business
- Increase trade opportunities with overseas countries

2.7 Improvement in the efficiency of key sectors of the economy, and especially for primary resources, agriculture and fisheries

- Enable advisory services to be more effective in reaching farmers particularly in terms of interactivity
- Enable guidance for more effective primary production and higher yields
- Extend resources to be available to all producers in the primary sector of the economy

3. National Broadband Policy Principles

The objectives set out in this Policy seek to ensure maximum benefit to PNG as a whole, supplementing other efforts to promote the national welfare, and supporting other government policies. The achievement of the objectives will be guided by a set of clear policy principles and the recognition that a holistic approach based on a whole-of-Government and whole-of-industry approach is needed to develop a sustainable broadband eco-system. The following principles will guide the National Broadband Policy in PNG:

- **Market driven:** To the maximum extent broadband infrastructure provision and service delivery will be through the operation of market forces, whilst recognising the critical role of government, a welcoming regulatory environment and in facilitating the provision of backbone capacity and the roll out of services with the assistance of the universal service scheme when it is established to areas in which broadband may not be commercially viable in the short to medium term.
- **Community involvement and ownership:** Broadband should benefit all communities in PNG whether they are academic, professional (including school based), urban, rural or local communities. Broadband initiatives will give high priority to community ‘ownership’ of facilities and community responsibility for the delivery of services on a viable basis.
- **Universal access:** The policy reflects the principle that broadband services shall be accessible to all PNG people and communities. Access is a function of availability, affordability and capacity to use. All of these aspects will be addressed in programs designed by the Government to ensure that universal access is achieved. In particular, the Government will address broadband access for communities that might not otherwise be served through the operation of market forces. The universal service scheme, when fully established, will seek to extend access to broadband on a practical and prioritised basis. There will be emphasis on the development of community-specific content in accessible languages.
- **Affordability:** Broadband access services at entry levels shall be affordable for all people in PNG. This principle may take some time to be reflected in terms of individual service subscription levels, and therefore community-level access will be a high priority in the interim.
- **Leadership:** This Policy seeks to encourage leadership in broadband adoption and usage at all levels of PNG’s economy and society, and especially by the private sector. The Government also has a clear leadership role in transforming its own processes and public sector services showcasing the opportunities available through broadband. The Government’s role in terms of lead applications should inspire business and industry to develop applications to more effectively undertake their transactions with the public and with each other.

- **Government intervention:** Government intervention should not be a constant feature of the information economy, but will be needed when markets fail, or where non-Government actions are ineffective and likely to remain so, and when there is a need for national example and leadership on key initiatives and other matters associated with broadband. The positive role and image of the government as a lead developer of applications cannot be overstated.

4. Short to Medium Term Goals for National Broadband Policy

The achievement of the objectives set out in this Policy will only be possible if specific goals are developed and met.

This policy seeks to achieve the following goals within the five year period to 2018:

4.1 To have in place a competitive structure for the provision of broadband in PNG – the Government will examine ways to remove any legal or regulatory barriers that may be an impediment to competition. Action plans to implement this policy will ensure that the market for broadband services operates competitively and will attract and sustain on-going investment, entry, and continued growth of broadband services, and of other services enabled by broadband, in PNG. The immediate source of competitive access is in the mobile sub-sector, but this will need to be matched in terms of fixed infrastructure access, including backhaul.

4.2 To support the provision of broadband services to communities with an active interest in acquiring early broadband access – the Government will dismantle the barriers that are making it difficult for communities who have either a business or education need to have access to broadband services. This provision will be implemented in the most cost effective manner, consistent with the continued provision of the service on a commercially sustainable basis. When the universal service scheme is operational the priority given to the establishment of community broadband facilities in locations where it may not be commercially viable, at least initially, will be considered. The initial emphasis will be on larger communities to ensure that the value of limited resources is felt as widely and as quickly as possible.

4.3 To achieve broadband service availability of 100% in urban areas and of 30% of rural areas of PNG during the next five years

– This is a geographical coverage or availability target and will be exceeded by the actual population coverage target. By the end of the Plan period (2018), 50% of the people of PNG shall have the ability to access broadband services at entry levels or better. However this goal will need to be converted into a series of prioritised steps with initial focus on larger towns and communities. This priority is suggested by the potential for greater numbers of people in more densely populated areas to be served at lower unit cost at the earliest time. To this end, broadband infrastructure to support service deployment will be taken to include the infrastructure of the power, transport and other sectors that needs to be utilised for best broadband outcomes.

4.4 To ensure that Broadband Services become and remain affordable for all people in PNG

– an entry level broadband service shall be available to all with access at an affordable price. NICTA, in conjunction with the Department and other relevant agencies, licensed service providers and stakeholders, will define both the initial entry level service characteristics and an affordable price. A service download speed of 512kbps shall be considered to be the initial entry level or basic service, pending further consideration by the parties referred to above. In order to make broadband affordable and desirable to middle and low income people in PNG, it will be necessary to establish policy settings that reduce cost, encourage high early demand (and gain scale economies) and ensure early development of applications of widespread appeal and utility, especially where local content is involved.

4.5 To encourage and facilitate the development of PNG local content

–support for local content will be through supporting local content developers, including contracting out to local private sector content developers where possible and encouraging mass usage of local content applications through Government leadership in usage. Local content initiatives include:

- Adaptation of foreign content for better and more convenient use by PNG users;
- Development of new content specifically targeted to PNG users, such as agricultural information and applications and cultural themes; and
- Use of languages other than English, where appropriate, to express content in accessible and useful ways.

4.6 To support all academic institutions to have access to

Broadband–100% of all primary and secondary schools in urban areas and 40% of all primary and secondary schools in rural areas to have broadband access to the internet during the next five years.

4.7 Government to lead the broadband evolution by delivering its services online over broadband

– A significant programme of eGovernment transactions that can be performed online and enhanced by broadband shall be developed and progressively implemented during the course of the next five years. All licence applications, tax and other payment transactions, notifications and other functions will be encouraged in online form with incentives where possible for online rather than paper-based or in-person transactions.

Lead Government applications – additional to the above, Government shall develop a range of lead applications for delivery of new, enhanced or extended services online using broadband in Health, Education and primary production specifically:

- (a) All major hospitals shall be connected to broadband for remote diagnostic and supervisory support and for other e-Health applications;
- (b) All field medical centres in communities with broadband availability shall be similarly connected;
- (c) All primary teachers shall receive training in broadband applications and use of broadband-enhanced educational resources in the classroom;
- (d) All secondary and selected tertiary curricula shall be deliverable using multimedia online capabilities to augment the syllabus in schools without specifically qualified teachers and to ensure that more and richer syllabus choices are open to all students in PNG who attend schools in areas of broadband availability; and
- (e) Lead applications in agriculture shall be developed for PNG conditions to assist in efficient production, greater yields, marketing and logistics associated with these industries.

5. Roles and Responsibilities for this Policy and related Strategic Action Plan

5.1 General coordination

NICTA has the general responsibility for the coordination of Policy implementation and for the monitoring, review, revision and reporting on a regular basis as required for effective outcomes. This responsibility will be discharged in coordination with the Department.

5.2 Broadband coordination arrangements

The National Broadband Policy has been considered by the Government to be an important whole-of-government initiative. It is being coordinated by NICTA in conjunction with the Department of Communication and IT but it is the responsibility of all Departments and agencies to contribute to the Policy and to ensure that the economic sectors and social segments that they especially serve enjoy the maximum benefit possible from broadband. This is not a matter that can be left to agencies and organisations in one Ministerial portfolio. Coordination arrangements will be established to oversee the Policy and Plan implementation. The National Broadband Committee will report to the Minister for Communication and IT. It is important that the Committee report to a high level in Government to show the importance that the Government attaches to broadband as a tool of national economic and social development, and as a clear signal of the Government's own on-going commitment.

The **National Broadband Committee** has the following members:

- The CEO of NICTA (Chair)
- Members representing each Department or agency referred to in the Strategic Action Plan (details in Appendix 1 to this Policy)
- The Permanent Secretary of the Department of Communication and Information Technology
- Such number of members representing the telecommunications service providers and the ICT industry in PNG as may be determined and appointed by the Minister for Communication and Information Technology from time to time

- Such other members on an ex officio basis as determined by the Committee Chair and approved by the Minister for Communication and Information Technology from time to time.

The role of the National Broadband Committee is to ensure that the National Broadband Policy and the Strategic Action Plan remain current and reflect changing strategic emphases and priorities and to ensure, at a higher level, that there is accountability on the part of departments, agencies and other major stakeholders involved for the actions entrusted to them.

NICTA shall be responsible for preparing regular reports, on at least a quarterly basis, initially, on the implementation, monitoring, review and revision of the Policy and the related Strategic Action Plan for the Government. NICTA shall be responsible for overall implementation, monitoring and review of the Policy and related Plan, working through the Committee as appropriate.

Appendix 1: National Broadband Strategic Action Plan

The Strategic Action Plan (“the Plan”) below is part of the National Broadband Policy and covers the five year period up to the end of 2018.

The opportunities and requirements associated with broadband for most of that period are emerging and changing rapidly. The Government’s approach will therefore be flexible, in order to exploit new developments that cannot be identified with certainty at this time.

However, some action items, the need for which are apparent and can be achieved within definite timeframes, have target dates assigned to them. Many of these action items fall in the earlier years covered by the Plan.

The implementation focus is on key achievements and on projects that will have lead-application and inspirational value in PNG leading to more economic and social broadband applications. In the broadband eco-system, initial applications and successes encourage and generate more applications and successes, and success becomes cumulative, feeding on success.

The Government has taken a deliberate view that it is better to seek to focus on a smaller number of very important projects and ensure that they are completed effectively and on time than to have a long list of desirable outcomes in the Plan that may well exceed the management and financial capabilities of the parties involved, or the resources that can be deployed. On the other hand, the list of items included in the Plan is not necessarily exhaustive and may well be augmented by additional items, particularly in later years.

Item	Goal	Description and target	Responsible	Completion
1	Competition, Regulation and Investment	1.1 Examine ways in which availability and affordability of broadband can be enhanced through the removal of any unnecessary regulatory constraints and financial imposts, together with re-design of schemes to encourage investment in broadband delivery. Undertake this in the course of reviewing the Act generally.	NICTA , in conjunction with Department	By end of Q2 2014
		1.2 Provide certainty about the definition of broadband by establishing a minimum (entry) level download speed of 512 kbps for regulatory purposes, and review	NICTA , in conjunction with industry stakeholders	By end of Q2 2014

		regularly.		
		1.3 Establish rules for the review of spectrum utilisation and for the cancellation of spectrum resources that are not being used.	NICTA , in conjunction with Department, and in consultation with industry stakeholders	Feasibility study by end of Q2 2014, and if feasible, implementation by 2015 with substantial notice periods for spectrum allocation cancellation
		1.4 Examine and analyse ways of introducing a more market-based approach to the allocation and sharing of spectrum, including auction systems and, in time, secondary trading of spectrum.	NICTA in conjunction with the Department and all stakeholders	Feasibility study by end of Q2 2014, and if feasible, implementation by 2015
		1.5 Review and determine the optimum approach to the management of Government funded broadband transmission and backhaul capacity, such as gas pipeline related transmission systems, and include in the consideration the possible establishment of a separate Data Co.	Department and Minister after taking advice from NICTA and other interested stakeholders	By end of Q2 2014
		1.6 Development and passage of comprehensive e-Commerce Law to protect consumer and trader rights in online transactions and to provide a comprehensive and certain framework for development.	NICTA in conjunction with the Department and all stakeholders	Development of draft legislation for consultation by Q3 2014
		1.7 Commence discussions with neighbouring Governments to facilitate access to cheaper international bandwidth.	Department , in conjunction with Foreign and Trade Departments and industry stakeholders	During 2014
2	Community access to broadband	2.1 Establish a Universal Service Scheme in PNG which includes: (a) individual and community broadband access objectives and targets; (b) the development of broadband content in subject-areas that are unlikely to be addressed commercially; and (c) service deployment and capacity building and adult education programmes	NICTA in conjunction with Department and all stakeholders	Commence major review of the Scheme in 2014 and complete review by Q2 2014. Implement the scheme by the end of Q2 2015.

		for ICT and broadband.		
		2.2 Review the minimum entry level download capacity for broadband for the purposes of the Plan and of regulation generally – noting that the February 2013 entry level is a download capacity of 512 kbps.	NICTA in conjunction with Department and all stakeholders	Progressively, with annual reviews of this Policy and Plan
		2.3 Establish adult community training programmes on how to use and benefit from broadband and internet access and deliver community-based training services and related certification scheme. (Examine also whether these programmes are able to be funded through the Universal Service Fund, and whether they should extend to both urban and rural areas of PNG.)	NICTA in conjunction with Department and all relevant Ministries including those responsible for labour, training and education	On-going programme to commence by the end of Q2, 2014
3	Availability	3.1 Achieve availability of broadband at the minimum entry level or higher speeds to 15% of the PNG population by the end of 2014 and to 50% of the population by the end of 2018. [Note that this will include establishing an effective UAS as well as extension of current operator initiatives.]	NICTA in conjunction with Department and all stakeholders	Achieve 15% of population availability by the end of 2014 and 50% by the end of 2018
		3.2 Encourage fixed and mobile service providers to include a range of price packages for broadband in their service offerings, and review the appropriateness and adequacy of the range on a regular basis.	NICTA in conjunction with Department and all stakeholders	Initial review by Q2 2014 and monitoring thereafter
4	Affordability	4.1 Undertake a review of the taxation and other incentives associated with broadband in PNG and determine a whole-of-Government approach to encouraging private investment in broadband infrastructure and service development, especially for extending services to second rank cities and towns, and potential direct subsidies to users. Also consider changes needed to facilitate public private partnerships (PPP) in the development of broadband infrastructure.	NICTA in conjunction with the Department and other departments responsible for economic development, taxation and finance, and with all industry stakeholders	By end of 2014
		4.2 An entry level broadband service option to be available to all at an affordable price, as a mandated offering in the broadband service schedules of all licensed service providers. Once the regulated price of the mandated broadband service offering has	NICTA in conjunction with Department and all stakeholders	By end of Q1 2014

		been established for each type of service provider, remove price controls on other retail broadband offerings.		
		4.3 Develop Guidelines for Local Authorities to facilitate a uniform and low-impact local government planning and operating regime insofar as it affects ICT and broadband deployment, penetration and cost. In addition, work with Local Government in the development of a Land Access Code. The arrangements are intended to encourage investment in infrastructure and to improve physical security of telecommunications towers and other assets.	NICTA in conjunction with Department and all stakeholders, including departments responsible for rural affairs and development	By end of Q2, 2014
		4.4 Develop a Code of Conduct for Tower and Infrastructure Sharing, including model terms for Sharing Agreements for all licensed operators.	NICTA	By end of Q2, 2014
5	Broadband penetration	5.1 Within the overall population availability target of 50% by 2018, determine the penetration milestone target that shall apply within each region and province for each year of the Plan.	NICTA , in consultation with industry stakeholders	Determine intermediate targets by end of Q1 2014
		5.2 Develop demand-side facilitators of broadband take-up and usage through development of applications and content, including the development of content in languages other than English for specific purposes.	NICTA in conjunction with relevant departments	Commence as soon as possible in 2014, and through USF when that has been established
		5.3 Examine and implement incentives for broadband service take-up by individuals and households and incentives for service providers to set and achieve challenging but relevant targets for penetration, including collaborating with service providers to provide free WiFi spots in public areas.	NICTA , in consultation with industry stakeholders	By end of Q1 2014
6	School access and education	6.1 All primary and secondary schools to have broadband access, in urban areas, and in those rural areas that have broadband service availability. [Note that 34 out of 2017 secondary schools, and 4 out of 3,332 primary schools had broadband or internet access as at February 2013.]	Department of Education	(1) Development of a programme by the end of Q2 2014. (2) Progressive delivery thereafter to achievement of target by end 2018

		6.2 Primary and secondary school syllabuses to be formatted for complete delivery, as necessary, via broadband means, in association with 6.1 above.	Department of Education	Progressive completion to end 2015
		6.3 Primary and secondary school teachers to be trained in the effective operation of relevant broadband applications and delivery of approved syllabuses by accessing broadband services.	Department of Education with teacher training institutions	(1) Development of a programme by the end of Q2 2014. (2) Progressive delivery thereafter to achievement of target by end 2018
7	e-Government	7.1 Coordinated examination within each Department of relevant transaction processes and development of a prioritised eGovernment programme for implementation, with initial applications being determined on the basis of their likelihood to encourage broadband service take-up.	NICTA , in conjunction with all departments and agencies	Completion of review by the end of Q2 2014
	Licenses, approvals and other transactions	7.2 Within the overall programme in 7.1 establish Government portals for the application for the grant and renewal of licences and other approvals given by Government, and for the electronic conduct of other transactions, such as the lodgement of returns.	NICTA , in conjunction with all departments and agencies	Completion by end of 2014
8	Lead applications in Government programs	Additional to 7.1 and 7.2 above, Government to develop a range of lead applications for delivery of new, enhanced or extended services online using broadband in Health, Education, Finance, Agriculture and Tourism, specifically as set out below.	NICTA , in conjunction with all relevant departments and agencies	Develop and commence monitoring a detailed set of milestones by the end of 2014 for progressive implementation to completion in 2018
		8.1 100% of major hospitals to be connected to broadband for remote diagnostic and supervisory support.	Department of Health	60% by end 2016, and 100% by end 2018
		8.2 Local and community medical centres in all areas with service availability to be connected to broadband.	Department of Health	40% by end 2016, and 80% by end 2018
		8.3 Develop comprehensive patient data	Department of	Development of

		bases to enable all PNG people to be provided with the best possible care and attention wherever they present with health issues in PNG – possibly with specific patient groups with chronic conditions involving high-cost treatment to be covered initially.	Health	detailed strategy by Q3 2014 and progressive implementation from that date.
		8.4 Develop detailed plans for lead applications in agriculture and fishing related to improving land use and crop yields, improved fishing yields, and produce marketing.	Department of Agriculture and Fisheries	By Q2 2014
		8.5 Additional to 8.4 above, establish a comprehensive information portal to provide farmers and other primary producers with information to assist in best practices for planting, cultivation and harvesting.	Department of Agriculture and Fisheries	By Q2 2014
		8.6 Develop online payment system in relation to payment to be made to Government for fines, permits, taxes, passports and other services.	Department of Finance	Complete feasibility study and planning by Q2 2014, with implementation thereafter.
		8.7 Further refine the e-commerce and e-business policies and environment to facilitate greater take-up and improved scale efficiencies. This may take the form of establishing coordination mechanisms to exploit the potential for online commerce on a sector-specific basis.	NICTA and Department, in conjunction with other relevant departments and agencies.	Complete feasibility study and planning by Q2 2014, with implementation thereafter.
		8.8 Additional to 5.2, establish a detailed plan for facilitation and prioritised support for local content and local applications development, including all levels in the content value chain.	NICTA, in conjunction with content stakeholders	Complete a detailed plan by the end of Q2 2014 and implement thereafter.
		8.9 Establish programs for human resource development on skills related to the application and use of broadband and ICT to deliver government services and for government to engage with the public. Include e-Learning and professional development in the program.	Public Service Commission in conjunction with all departments and agencies	Complete a detailed plan by the end of Q1 2014
9	Recognition of ICT Champions	9.1 Design and implement a scheme for the identification and public recognition of outstanding leadership and entrepreneurship in the application of broadband to advance PNG's society and/or economy.	NICTA, in conjunction with other relevant departments and stakeholders	By end of 2014, and implement as an annual event

10	Data collection to measure broadband progress	10.1 Review existing arrangements, and, if necessary, design and implement enhanced data collection and reporting arrangements to enable baseline and progress to be understood and for achievement of the Policy and Plan goals to be measured and communicated. The data will relate to ICT measures and to all other measures referred to in this Plan.	NICTA , in conjunction with other relevant stakeholders	Design by end of Q2 2014, for quarterly collection and analysis thereafter.
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