

DISCUSSION PAPER

**Public consultation into whether a
recommendation should be made to the
Minister for a retail service determination
for voice and data services**

Issued on 18 March 2022

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1 Introduction

- 1.1 On 16th June 2020, the Minister for Communications and Information Technology advised NICTA should, consistent with Section 157 of the National Information and Communications Technology Act, 2009 (the Act), look into the case for a retail pricing determination for voice and data. The Minister indicated that he wished to see benefits to customers and end-users as a result of the commissioning of the Coral Sea Submarine Cable in the first half of 2020.
- 1.2 Section 157(1) of the Act provides that NICTA may hold a public inquiry under section 230 of the Act into "(a) whether a recommendation should be made to the Minister that a retail service should be subject to a retail service determination in respect of an operator licence, or that an existing retail service determination should be revoked or varied; and (b) if so, appropriate terms of any such retail service determination, revocation or amendment."
- 1.3 There is no existing retail price determination relating to voice and data services.
- 1.4 The purposes of this paper and of the pricing study annexed to it are to inform the public inquiry that NICTA has now initiated under Section 157 of the Act.
- 1.5 NICTA has included two sets of questions that it invites stakeholders who wish to make a submission to consider. The first set are interspersed throughout this discussion paper, and summarised at the end of the paper. The second set are interspersed throughout the retail pricing study report in the Annexure to the discussion paper.

2 The Policy in the Act

- 2.1 The Objective of the Act, set out in Section 2, is to ensure that the ICT industry contributes to the greatest extent possible to the long-term economic and social development of Papua New Guinea. Section 2 goes on to outline, non-exhaustively, a number of means for achieving that objective, including –

“(a) providing a regulatory framework consistent with the regulatory principles in Section 3 that promotes – (i) the long-term interests of Papua New Guinea and its peoples, taking account of the National Goals and Directive Principles and the Basic Social Obligations of the *Constitution*; and (ii) the efficiency and competitiveness of the ICT industry in Papua New Guinea; ...”
- 2.2 Section 3 of the Act deals with Regulatory Principles and makes it clear that the ICT industry should be regulated in a manner that recognises “the effectiveness of market forces in promoting consumer welfare, specifically that – (i) to the extent that markets are competitive, primary reliance should be placed on commercial negotiations and the greatest practical use of industry self-regulation, subject to minimum regulatory requirements consistent with the objective of this Act; and (ii) to the extent that markets are not competitive, appropriate ex ante regulatory measures may be required to promote and maintain effective and sustainable competition; ...”

- 2.3 In summary, the policy of the Act is to achieve economic and social development goals to the greatest extent through competitive market forces, and to resort to regulation only when those forces have failed or are likely to fail to deliver appropriate outcomes.

3 NICTA's approach to market regulation

- 3.1 NICTA has approached the regulation principles and the objective of the Act by focussing on the development of appropriate arrangements at the wholesale level of the market. Generally, competition at the wholesale level exists but, in many areas, it is weak and needs the support of an appropriate regulatory framework in order to sustain such competition as exists at the wholesale and retail levels. This approach reflects the priorities of modern ICT regulators internationally.
- 3.2 In practical terms, NICTA has focussed on licensing, to facilitate entry of network operators and service providers, ensuring that key services and facilities are subject to appropriate regulation through wholesale access service determinations, and to encourage dominant competitors in wholesale access markets to propose Reference Interconnection Offers (RIOs) incorporating fair, reasonable and non-discriminatory terms and conditions, and, in the process, providing a degree of certainty for the whole industry.

4 Retail Regulation Criteria

- 4.1 The criteria for recommending a retail service determination to the Minister are called the retail regulation criteria, and are set out in Section 158 of the Act, as follows:
- “(a) that making a retail service determination for the retail service in respect of an operator licensee for a particular period will further the achievement of the objective set out in Section 124 but disregarding Section 124(2); and
 - (b) specifically in relation to the competition objective, that –
 - (i) that licensee has a substantial degree of power in the market within which the retail service is supplied; and
 - (ii) in the absence of the retail service determination for that period, that substantial degree of power is likely to –
 - (A) persist in the market over that period;
 - (B) expose retail customers to a material risk of higher prices and/or reduced service when they acquire the retail service from the operator licensee during that period; and
 - (c) specifically, in relation to the efficiency objective, that the operator licensee will not be prevented from achieving a return on assets during the period sufficient to sustain investment necessary to supply the retail service; and

- (d) the aggregate likely benefits of making that retail service determination outweigh any aggregate likely detriments.”
- 4.2 The criteria refer to Section 124 of the Act. Section 124 deals with the objectives to be achieved in relation to Part VII (Consumer Protection and Retail Pricing). Only Section 124(1) is relevant to retail service determinations, and it provides:
- “(1) The objective of this Part and Part VII of this Act is to –
- (a) promote effective competition in markets for ICT services in Papua New Guinea, to be known as the ‘competition objective’, subject to –
 - (b) promoting the economically efficient use of, and the economically efficient investment in, the facilities by which ICT services may be supplied, to be known as the ‘efficiency objective’.”
- 4.3 Section 158 of the Act expands on these objectives in the following ways:
- “(b) specifically, in relation to the competition objective, that –
- (i) that operator licensee has a substantial degree of power in the market within which the retail service is supplied; and
 - (ii) in the absence of the retail service determination for that period, that substantial degree of power is likely to –
 - (A) persist in the market over that period; and
 - (B) expose retail customers to a material risk of higher prices and/or reduced service where they acquire the retail service from that operator licensee during that period; and
- (c) specifically, in relation to the efficiency objective, that the operator licensee will not be prevented from achieving a return on assets during the period sufficient to sustain investment necessary to supply the retail service; and
- (d) the aggregate likely benefits of making that retail service determination outweigh any aggregate likely detriments.”

5 Voice and Data Services - discussion

- 5.1 For the purposes of the initial discussion in this paper it is not necessary for NICTA to make a final assessment of whether the criteria in Section 158 of the Act have been met. Such an assessment will be required, however, if, as a result of the public inquiry, NICTA concludes that a recommendation should be made to the Minister for a retail service determination under Section 157(1). Nevertheless, it is appropriate for NICTA to indicate at this point whether it considers that the criteria may apply or are likely to apply.
- 5.2 In broad terms there are four services that are the subject of this review, namely:
- (1) Voice services provided by a fixed network at a fixed location;
 - (2) Voice services provided by a mobile network;
 - (3) Data services (internet services) provided by a fixed network at a fixed location; and

(4) Data services (internet services) provided by a mobile network.

- 5.3 NICTA recognises that this categorisation of services reflects a more traditional approach and that technological and market developments may suggest that the categories are melding and are less distinct than they were once considered to be. For example, there are many alternatives available to legacy public switched network voice service, that have the essential characteristics of voice service but are provided as over the top IP services. These services have been substituting for traditional public switched voice services at an increased rate in recent years. This continuing trend raises the question whether it is appropriate to continue to treat voice as a separate service from a regulatory perspective, or whether it would be better to treat voice as simply another application and as part of the data service category.
- 5.4 The matter is not without contention, but, on balance, NICTA considers that end users still generally regard voice as a separate service from data or internet service, to the extent that the markets should be regarded as remaining distinct for the present inquiry. If, as a result of the consultation associated with the present inquiry, stakeholders are able to present evidence which tips that balance, then NICTA would be comfortable to move to consider whether a retail service determination should be recommended for data services (broadly defined) only.
- 5.5 Increasingly voice calls originate from devices connected to mobile networks. This form of substitution has been evident for at least two decades, since the inception of mobile services on a mass basis. This trend raises the question whether it remains appropriate to distinguish fixed voice call service from mobile voice call service for regulatory purposes, or whether the level of substitution is sufficiently advanced to treat the service markets as one.
- 5.6 Based on call traffic information available to NICTA, the proportion of public switched network voice call minutes originating on mobile services over the past 12 months was approximately 99.95%% of total call minutes in the same period. NICTA has no data on the equivalent voice minutes that originated via social network and other voice applications during the same period. Anecdotal information suggests that end user behaviour differentiates between fixed and mobile calling, both in terms of call origination and call termination. With service bundling being the norm for mobile service and price offers, national voice calls are typically unlimited within the bundle. Therefore, the cost of incremental calls during the contract period is effectively zero. This is not the case with fixed voice calls, although similar unlimited usage arrangements are starting to be offered. The call management software on many smart mobile devices may also encourage preference for making and receiving calls on such devices.
- 5.7 NICTA is therefore of the tentative view that, for the present inquiry, it should regard mobile voice calls as the key market for consideration, rather than voice calls as a whole or both fixed and mobile voice calls. If there are regulatory constraints on mobile voice calls, and particularly price caps or other form of price regulation, that will be sufficient regulatory constraint for all voice services. However, this matter will be examined again in the light of any comments made by stakeholders in the course of consultation.

- 5.8 NICTA considers that end users continue to differentiate between fixed and mobile data in many important respects and that, as a result, it should consider fixed and mobile data markets as separate for the purposes of the present inquiry, notwithstanding that there is some degree of substitutability, depending on the purpose. Mobile data services are accessed only by handheld devices, however.
- 5.9 NICTA therefore proposes to focus in this inquiry on the potential for retail service determinations for:
- (1) retail voice service, without categorising into fixed or mobile;
 - (2) retail mobile data service; and
 - (3) retail fixed data service.

[Question 1]: Do you agree with the approach that NICTA is taking to voice and data services for the purposes of this public inquiry, that it considering retail voice as a single service, with retail mobile data and retail fixed data as separate services? **[Please state your reasons including your reasons for any alternative approach that you consider should be adopted]**

6 Application of Retail Regulatory Criteria

Retail voice service

- 6.1 Any retail service determination in relation to voice service would be in respect of Digicel (PNG) Limited (Digicel). With over 90% of mobile service subscriptions and a higher percentage of mobile service revenues, together with a significant proportion of fixed wireless services, which also provide voice, Digicel has a substantial degree of power in the retail voice service market in PNG. Digicel is a market leader and has the capacity, in the absence of regulation, to set its own terms and conditions for service without being unduly constrained by the actions of its relatively-weak competitors or by the actions of its customers and end users. Digicel is comparatively well financed compared to its current competitors and has the resources to withstand the rigours of competition much better than they do.
- 6.2 Section 159(1)(b)(iii) of the Act provides that a retail service determination may operate for a maximum period of five years. Given the rapidly changing telecommunications sector it would be prudent to contemplate a period less than the maximum, if any, say of three (3) years. Whether, in the absence of a retail service determination for three years, Digicel's current substantial degree of power in the voice market is likely to persist for that period (criterion in Section 158(b)(ii)(A)) is unclear. On the one hand, Digicel has been in that position for some considerable time and has the benefits and experience of incumbency to assist it retaining that degree of power. However, PNG is a large and potentially attractive market, which may be considered by some to be unsaturated, and the entry of a well-resourced regional or global competitor could seriously challenge Digicel's market position, to the benefit of customers and end users.

- 6.3 The criterion in Section 158(b)(ii)(B) is that the absence of a retail service determination would be likely to expose retail customers to a material risk of higher prices and/or reduced service. This also is unclear. Voice prices have reduced over the past three years, although current voice prices are above regional levels. There is no special reason to assume that, if the level of competition remained as it is now, that future reductions would not continue or that service would be reduced, but this is speculative. In any case the criterion is that there should be a material likelihood of higher prices or reduced service, not a material risk that trends of benefit to customers would cease.
- 6.4 NICTA is not contemplating any action that would prevent Digicel from achieving a return on assets sufficient to sustain investment necessary to supply retail voice service during the next three years, via a retail service determination. This is the criterion in Section 158(c) of the Act. On the other hand, the Act does not require any form of guarantee of a return of this kind. The operator has agency, and the market has risks affecting business outcomes.

[Question 2]: Do you agree that the retail regulation criteria in Section 158 of the Act are satisfied in the case of retail voice service? **[Please state your reasons]**

Retail mobile data service

- 6.5 Digicel has over 80% share of the mobile data market in PNG measured in terms of subscriptions and revenue. Most of Digicel's customers have subscribed to mixed bundled offerings comprising both voice and data service. Bundled offerings has been an increasing trend and is likely to remain the dominant way in which these services are purchased into the foreseeable future.
- 6.6 NICTA considers that the same assessments on the application of the retail regulation criteria made above in relation to voice services apply also to mobile data services. The trend towards increased service bundling reinforces the linkage between an assessment of the two services in this respect.
- 6.7 In particular, Digicel would appear to have a substantial degree of power in the mobile data market, notwithstanding the existence of several smaller competitors. Digicel is essentially a price leader in the market, although how robustly it holds or will continue to hold this position is arguable. Given the dynamism of the market, it is certainly a matter for debate how likely Digicel is to retain its current position in this service market over the next, say, three years.
- 6.8 NICTA is not anticipating increases in prices or reductions in service quality as a result of Digicel's position in the mobile data market. A more likely outcome would be deferral of price reductions over time.

[Question 3]: Do you agree that Digicel has a substantial degree of power in the market for retail mobile data services? Do you consider that the other retail regulation criteria in Section 158 of the Act are satisfied in respect of retail mobile data services? **[Please state your reasons]**

Retail fixed data service

- 6.9 Telikom PNG Limited (Telikom) has an estimated share of over 90% of the fixed retail data service market measures by revenue. This market includes services delivered by all technologies to fixed locations, including fixed wireless.
- 6.10 Although Telikom has the largest share of this market, it is not at all clear whether its overall position in the market gives it a substantial degree of market power sufficient for it to determine the terms and conditions on which it will operate, without considering the likely response of competitors, customers and consumers. In any case, given the dynamism in the market, the current situation cannot be considered likely to persist over the next, say, three years.

[Question 4]: Do you consider that Telikom has a substantial degree of power in the market for retail fixed data services? Do you consider that the other retail regulation criteria in Section 158 of the Act are satisfied in relation to retail fixed data services? **[Please state your reasons]**

Preliminary conclusions and caveats

- 6.11 From the above assessment, NICTA has formed the preliminary conclusions that, in respect of price and quality terms and conditions of service, the retail regulation criteria in the Act, are unlikely to be met for retail voice and data services. Those conclusions will need to be revisited taking into account issues raised and evidence provided in submissions from stakeholders and others in response to this paper.
- 6.12 Note, however, that the assessment has been in terms of retail prices in general. In relation to specific issues, the level of market power of the largest or strongest competitor may be sufficient to force market outcomes without undue concern for the response of competitors, customers or consumers. Two examples are instructive in this regard:
- (a) Where prices and price structures that discriminate between customers and users without justification, with actual or potential anti-competitive effects, as may occur when price packages discriminate between on-net and off-net voice calls; and
 - (b) Where market forces have not and are not likely to lead to price/service offers and bundles that are designed for low volume users.

[Question 5]: Do you agree with NICTA's preliminary conclusions that, in respect of price and quality terms and conditions of service, the retail regulation criteria in Section 158 of the Act are not met or are unlikely to be met for retail voice and data services? **[Please state your reasons]**

7 Retail pricing study by NICTA

- 7.1 In October 2020 NICTA undertook a study of retail voice and data prices to determine how tariffs and promotional offers had changed over the previous 2-3 years, and how

retail prices in PNG compared to prices for similar services in the Region. The study sought to detect any retail price trends that might be attributable to the Coral Sea Cable System that became operational in February 2020.

7.2 In October 2021 the study was extended for an additional year. The results were not significantly different than in 2020. The 2021 study is annexed to this paper.

7.3 The conclusions suggested by the study are:

1. Standard tariffs for voice and data services have remained unchanged since 2018 and in most cases considerably longer.
2. Multiple tariff bundles – for data only services and for mixed voice and data services - have been introduced by all operators over the study period, mostly on a short term or promotional offer basis.
3. Bundles are the new norm for voice and data service provision, and it is in this area that service competition plays out in PNG. This is a global trend as well.
4. The value of mobile bundles – both mixed and data only – has improved materially over the past 3 years, with value measured against the yardstick of the static standard tariffs.
5. The value of fixed data bundles for residential and business customers has improved since 2018.
6. The affordability of mobile data bundles and of fixed data bundles have improved since 2018.
7. The price of most data bundles in PNG – measured in terms of price per GB of capacity – is materially above the price of equivalent bundles in other Pacific nations.

[Question 6]: Do you agree with each of the conclusions of the retail price study as set out above? If not, which do you disagree with? **[Please state your reasons]**

[Note]: Please consider the additional set of questions included in the study report annexed.]

8 Potential New Entrant and Potential Change of Ownership

8.1 As noted earlier in this paper, the scheme of the Act is based on allowing market forces primacy in shaping and developing the ICT sector, and adopting regulatory means only when market forces are inadequate to achieve PNG's social and economic development objectives. It follows that the imminent entry into the market by a well-resourced and experienced new service provider is an important factor to take into consideration. The improvement of customer and consumer welfare through competition, with consequent reduction in effective prices and improvements in service, is to be welcomed and preferred over regulation.

8.2 Indeed, the imposition of price ceilings could have the effect of dissuading or deterring new entry.

- 8.3 For several months NICTA has been made aware that there is a regional network operator that intends to enter the PNG voice and data services markets by the end of 2021 with the provision of retail services shortly after. The identity of the proposed entrant may well be an open secret within PNG, but it is not a matter for NICTA to reveal or announce.
- 8.4 The changes described above have the individual and collective potential to usher in a new era of competition in the sector in PNG and to deliver further price competition for the benefit of customers. This outcome has a reasonable probability of occurring in NICTA's view, and of being a reason not to take precipitate regulatory action to impose price caps or similar market controls at this stage in the retail voice and data markets.

[Question 7]: Do you wish to make any comments or observations in relation to new entry and change of ownership in relation to the retail service markets under discussion? In particular, do you consider that these are relevant matters for NICTA to take into account in considering regulatory intervention in these markets? **[Please state your reasons]**

9 On-Net/Off Net Price Differentials

- 9.1 A service provider with substantial power in a market for calls may maintain and enhance that power through charging prices that differentiate between calls that originate and terminate on its network, and those that terminate on other networks – that is, between on-net and off-net calls. The effect of such price differentiation may be to encourage customers to switch their service from other networks to the relevant service provider's network to gain the benefit of reduced call prices. In these circumstances, the substantial market power of the service provider means, in effect, that smaller service providers cannot effectively compete, and certainly cannot compete using a similar strategy because of their relatively small share of the market.
- 9.2 NICTA examined the issue of on-net and off-net price differentials charged by Digicel in 2018. NICTA concluded that Digicel had a substantial degree of power in the market for mobile voice call services. At the time Digicel had a very large market share in of over 90% measured in terms of subscribers and revenue. NICTA observed that, where such market power exists, "pricing on-net calls substantially below off-net calls can and is likely to have very damaging consequences for competition. These stem from the strategic incentive created by the existence of a call externality (that is, the benefit that is enjoyed by the receiver of a call that is made by another mobile subscriber) and the ability of a mobile network operator with a substantial degree of market power to act upon that incentive. A mobile network operator in such a position can strategically manipulate the relative difference between its on-net and off-net prices, by making on-net calls significantly less expensive, in order to reduce the number of (off-net) calls made to subscribers on a rival network and, thus, the attractiveness of that rival network to existing and potential subscribers. There is a clear consumer detriment involved here with the increased burden associated with connectivity between subscribers to different networks, and the unwinding of the amenity that is intended to benefit all subscribers through interconnection arrangements."

- 9.3 NICTA has formed the preliminary conclusion that the circumstances that existed in 2018 remain in place in 2021, and that the clear consumer detriment also continues in place. In the event, there was no action taken after the 2018 review, but it is time to revisit the matter.
- 9.4 The anti-competitive harms of on-net/off-net price discrimination that NICTA identified in 2018 are still present, and are likely to be more pronounced when deployed as a barrier to entry or expansion by other competitors. Importantly, when used in this way, on-net/off-net price discrimination is not competition on the merits of the services being offered, but competition based on the exercise of market power. Such strategies are not open to smaller operators with smaller market share and no power in the market.
- 9.5 NICTA has formed the preliminary view that the continuation of on-net/off-net retail price discrimination in the retail voice market poses a continuing and unacceptable risk of harm to competition and to the long-term interests of users, and that a retail service determination should be recommended to the Minister.

[Question 8]: Do you agree that the retail regulation criteria in Section 158 of the Act are satisfied in relation to a retail service determination to prohibit on-net/off-net price discrimination of retail voice calls, or, at least, retail mobile voice calls? **[Please state your reasons]**

10 Offers to Low Income Users

- 10.1 In competitive markets competitors typically seek to attract and retain higher spending customers and may give those customers priority over low usage customers. For example, they might not develop offers suited to the needs of low usage customers or they might include in their price schedules implicit discounts that are essentially limited to high usage customers. Competitive markets do not therefore deliver equitable outcomes to all customer segments.
- 10.2 In PNG however, this does not appear to be a problem. In the annexed pricing study:
- Digicel's mobile data-only bundles do not show any significant difference in value based on the capacity purchased, (Section 2.3.1 and Figure 2.3 of the study report refer); and
 - Telikom's fixed data bundles likewise do not show any significant difference in value based on the capacity purchased, (Section 2.3.2 of the study report refers).
- 10.3 NICTA has reached the preliminary conclusion that inequitable treatment of low usage customers is not an issue in PNG at present, and that no action via a retail service determination on that matter is appropriate at this time.

[Question 9]: Do you agree that no action needs to be taken in relation to the price or other terms of low usage voice or data service offers or bundles at this time? **[Please state your reasons]**

11 Next Steps in the Public Inquiry

- 11.1 For this Public Inquiry NICTA envisages at least two separate public consultations.
- 11.2 The first public consultation is via this paper. Its purpose is to elicit information and views that will be taken into consideration by NICTA in confirming or amending its preliminary conclusions.
- 11.3 The second public consultation will depend very much on the first. It could take the view that retail service determinations are required in relation to some services and some matters, in which case the consultation will cover drafts of the determinations. Alternatively, on some issues, NICTA might propose not to recommend retail service determinations, in which case the consultation will cover the reasons that suggest that course and NICTA's conclusions. Quite possibly, the consultation could cover a combination of RSD and other recommendations.
- 11.4 NICTA will organise a public forum in Mt. Hagen, Lae, Kokopo and Port Moresby to engage with individuals and other SME who may not have the opportunity to make any form of submissions. Further details of the proposed public forum will be made known at a later date.
- 11.5 Responses to the first consultation will be published on NICTA's website, and it will be open to stakeholders to comment on any matter in those responses in when they make submissions in the second public consultation.

12 List of Questions for consideration in this paper

- 12.1 Written submissions may cover any issues that stakeholders wish to deal with, and in any format. However, it would be appreciated if consideration could be given in written submissions to the questions set out in this paper and listed again below.
- 12.2 The questions are:

Question 1: Do you agree with the approach that NICTA is taking to voice and data services for the purposes of this public inquiry, that it considering retail voice as a single service, with retail mobile data and retail fixed data as separate services? Please state your reasons including your reasons for any alternative approach that you consider should be adopted.

Question 2: Do you agree that the retail regulation criteria in Section 158 of the Act are satisfied in the case of retail voice service? Please state your reasons.

Question 3: Do you agree that Digicel has a substantial degree of power in the market for retail mobile data services? Do you consider that the other retail regulation criteria in Section 158 of the Act are satisfied in respect of retail mobile data services? Please state your reasons.

Question 4: Do you consider that Telikom has a substantial degree of power in the market for retail fixed data services? Do you consider that the other retail regulation criteria in Section 158 of the Act are satisfied in relation to retail fixed data services? Please state your reasons.

Question 5: Do you agree with NICTA's preliminary conclusions that, in respect of price and quality terms and conditions of service, the retail regulation criteria in Section 158 of the Act are not met or are unlikely to be met for retail voice and data services? Please state your reasons.

Question 6: Do you agree with each of the conclusions of the retail price study as set out above? If not, which do you disagree with? Please state your reasons.

Question 7: Do you wish to make any comments or observations in relation to new entry and change of ownership in relation to the retail service markets under discussion? In particular, do you consider that these are relevant matters for NICTA to take into account in considering regulatory intervention in these markets? Please state your reasons.

Question 8: Do you agree that the retail regulation criteria in Section 158 of the Act are satisfied in relation to a retail service determination to prohibit on-net/off-net price discrimination of retail voice calls, or, at least, retail mobile voice calls? Please state your reasons.

Question 9: Do you agree that no action needs to be taken in relation to the price or other terms of low usage voice or data service offers or bundles at this time? Please state your reasons.

In addition, please consider the questions posed in the annexed retail pricing study report.

13 Invitation to make written submissions

- 13.1 NICTA invites interested parties to consider and comment on the list of questions under this discussion paper. Written submissions should be submitted via email to consultation.submission@nicta.gov.pg and must be received by 4 pm on Friday 22 April 2022.
- 13.2 Copies of all submission received will be published on NICTA's Public Register consistent with the requirements on NICTA under subsection 229(3) of the Act. Additional procedural information is set out in NICTA's Guidelines on the submission of written comments to public consultations and public inquiries, which are available on NICTA Public Register (www.nicta.gov.pg). Any respondent that wishes to claim confidentiality over information that it submits as part of this consultation should follow the procedures described therein.

Annexure: NICTA Retail Pricing Study, 2021



Retail Tariffs for Telecommunication Services in PNG

Report to assist Public Inquiry

October 2021

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1 INTRODUCTION

This report has been prepared by the National Information and Communications Technology Authority (NICTA), in response to a request from Hon. Timothy Masui, Minister for ICT, following the launch of the Coral Sea Cable System (CS2) on 5 June 2020. The Minister's request was that NICTA "look into retail price determination for voice and data" services consistent with Section 157 of the National ICT Act 2009 ("the Act"). The purpose, as highlighted by Prime Minister Hon, James Marape at the official launch of CS2 is for retail prices that are "uniform and cheap throughout the country".

The objective of this report is to analyse current voice and data tariffs in PNG and assess the extent to which there are problems that may need to be addressed through a retail service determination. It has been prepared in the form of an annex to a consultation paper so that it may be used as part of a Public Inquiry under s157, seeking responses and data from industry stakeholders so as to inform NICTA's recommendations to the Minister.

2 TARIFF ANALYSIS

NICTA has used its database of the tariffs offered by Telikom, Digicel and B-mobile to inform an analysis of the patterns that may be discerned from the beginning of 2018 to August 2021. The aim of the analysis was to determine whether the evolution of tariffs has been consistent with the patterns that may be expected in an effectively competitive market. If not, then there may be cause for NICTA to augment market forces through regulation in the form of a retail services determination.

The expectation in a competitive market is that there would have been:

- **substantial reduction in tariffs.** As technology advances, costs come down and much of the savings are passed on to consumers. Lower prices will then stimulate greater usage and improve economies of scale, thus allowing the cycle of downward price pressure to continue.
- **frequent tariff changes.** Rival service providers are continually seeking to improve their market position by offering new and innovative tariffs bundles, so as to retain their existing customers and encourage customers to migrate from other networks.
- **better value tariffs for all customer groups.** Customers are attracted by better value tariffs (i.e. the price per minute or per MB goes down, even though sometimes customers have to purchase greater capacity in order to obtain the lower price). In a properly functioning market such tariffs are, to a greater or lesser extent, available to all parts of the consumer base.
- **increasingly affordable tariffs.** This is a specific instance of the previous point, characterised by the internationally accepted "1 for 2" affordability target: 1GB of data should be available for 2% of the Gross National Income per capita¹. Such a target helps to achieve digital inclusion and has been demonstrated to have a significant impact on economic welfare.
- **tariff levels consistent with international benchmarks.** Tariffs will vary between countries because of different operational circumstances, but similar tariff levels are to be expected between countries that have similar operational circumstances. For PNG this means tariffs should be similar to those across the Asia-Pacific region.

When assessing the recent history of telecommunications tariffs in PNG it is important to recognise that the country lacked international internet capacity prior to the inauguration of the CS2 cable. This may justify some deviation from best practice prior to the first half of 2020. But equally the analysis clarifies expectations of what now needs to change following the launch of CS2.

¹ UN Broadband Commission for Sustainable Development
(<http://www.broadbandcommission.org/Documents/publications/wef2018.pdf>)

2.1 Reduction in tariff levels

The most striking feature of tariffs over the past three years has been the fact that standard tariffs have remained unchanged, while multiple tariff bundles have been introduced by all of the operators. This “freeze” on standard tariffs applied to all operators (Telikom, Digicel and B-Mobile), to all basic services (on-net calls, off-net calls, international calls, SMS, data) and to all times of day (peak and off-peak).

Customers have been able to obtain lower tariffs through the purchase of bundles (as described in subsequent sections) and thus the average tariff per minute, per SMS or per MB has fallen during the past three years. However, for those customers who are unable or unwilling to purchase bundles, and for all usage outside of the bundle’s allowances, there has been no change in tariff.

The fact that standard tariffs have not changed since the start of 2018 is a cause for concern. It means that at least some users are stranded on high tariffs even as the average rate per minute, per SMS or per MB is falling. The extent of this problem depends on the proportion of traffic that is billed at standard tariffs, and NICTA is not currently aware of this proportion. However, regardless of its scale, NICTA is concerned that a portion of the user base is being cut off from the benefits of reducing telecommunication tariffs.

Questions

1. [For network operators ~~only~~] What proportion of minutes, SMS and data MB are currently billed at standard tariffs?
2. Do you agree that it is reasonable to expect some reduction in standard tariffs over time, even if the reductions are not as great as can be obtained by customers migrating to bundled offers?

2.2 Frequency of tariff changes

For those customers who are willing to purchase tariff bundles, there has been a lot of choice and change over the past few years. All operators the operators have introduced “combo bundles” that incorporate a variety of services and “single-service bundles” that are invariably focused only on data. They have also changed their offers frequently as they have experimented with different service combinations, different validity periods and different price points. In short, competition has been working effectively through the provision of tariff bundles.

Figure 2.1 shows the number of tariffs changed, withdrawn or launched by each operator during the period January 2018 to August 2021. Digicel has made by far the most tariff changes and is the only operator to have adjusted tariffs since the CS2 submarine cable launched commercial services.

Figure 2.1: Tariff changes (January 2018 – August 2021)

Number of:	Tariff changes	Tariffs withdrawn	New tariffs
Digicel			
Combo bundles	16	14	5
Single-service bundles	22	25	12
B-mobile			
Combo bundles	3	0	1
Single-service bundles	5	4	4
Telikom Mobile			
Combo bundles	7	1	0
Single-service bundles	10	5	8
Telikom Fixed			
Residential internet bundles	0	8	7
Business capped internet	5	12	0
Business unlimited	3	8	2

Questions

- Do you agree that the number and frequency of changes in tariff bundles is a sign of healthy competition in the PNG telecommunications market?

2.3 Better value tariffs for all customer groups

The large number of different tariff bundles and the frequency with which they change can be confusing for customers. It can also make it difficult to assess trends in the value of those tariffs. To address this issue, we have therefore focused on the tariff bundles offered by Digicel as the largest mobile operator and Telikom Fixed.

2.3.1 Digicel

Digicel has offered a number of different combo and data-only bundles and typically has changed its offers once a year. The bundles have a validity period of 1-day, 3-days, 7-days and 30-days: meaning that any unused allowance within the bundle is forfeited if not used by the end of the validity period. In our analysis we have worked on the assumption that 25% of the allowance is forfeited on average for each of the bundles. We have then

compared the price of each bundle against what it would have been had standard tariffs been used instead (the "value/price ratio"). Figure 2.2 presents the results of this analysis.

Figure 2.2: Value of Digicel data bundles

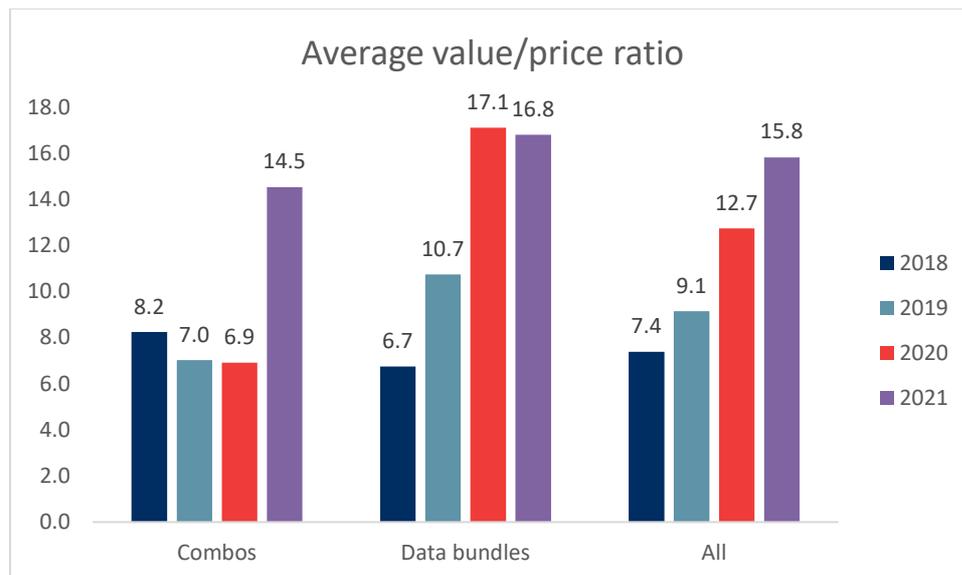
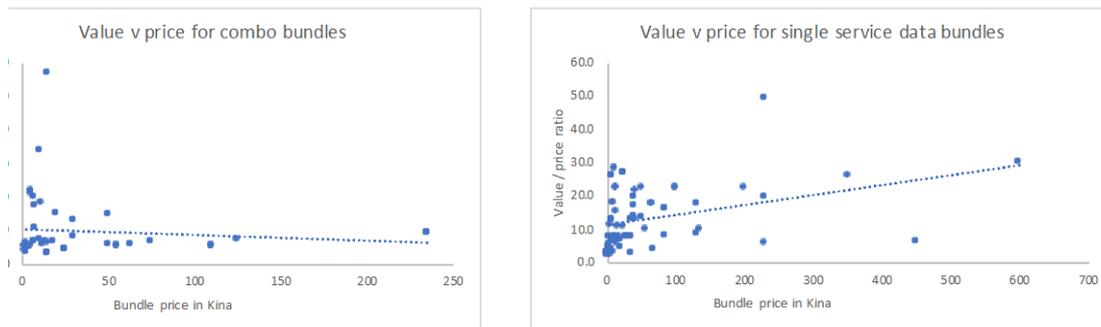


Figure 2.2 shows that on average the customer of a bundle from Digicel in 2018 would have paid 7.5 times as much if making the same usage at standard tariffs. This ratio has increased each year and reached 15.7 in 2021. It is clear that bundled tariffs represent very good value for money compared with the standard tariffs, and that their value is increasing over time, in particular for data-only bundles.

One possible concern with regard to tariff bundles is that they favour high-volume users who can afford to pay more to obtain better unit prices. However, analysis suggests that this is not a significant issue in PNG. Tariff bundles are offered at many different price points, currently ranging from 2 Kina for a 1-day combo bundle to 600 Kina for a 30-day data bundle. Furthermore, the value/price ratio does not materially increase for the higher-value bundles as shown in Figure 2.3 below.

Figure 2.3: Value v Price for Digicel tariff bundles



2.3.2 Telikom Fixed

Telikom Fixed has offered a number of dingle service data bundles to both residential and business users. The bundles have a validity period ranging from 1-day to 30 days for residential users; all the business bundles are 1-month (30-day) bundles. As with Digicel’s bundles this means that any unused allowance within the bundle is forfeited if not used by the end of the validity period. In our analysis we have worked on the assumption that 25% of the allowance is forfeited on average for each of the bundles. We have then compared the price of each bundle against what it would have been had standard tariffs per MB of data been used instead (the “value/price ratio”).

The notable thing with Telikom Fixed bundles is that there is no obvious improvement in the value/price ratio based on the size or duration of the bundle purchased. There was however a significant increase in value when Telikom rationalised the number of bundles available and changed its prices in mid 2019, as shown in Figure 2.4 below. No further tariff changes have occurred since that time.

Figure 2.4: Value of Telikom Fixed data bundles

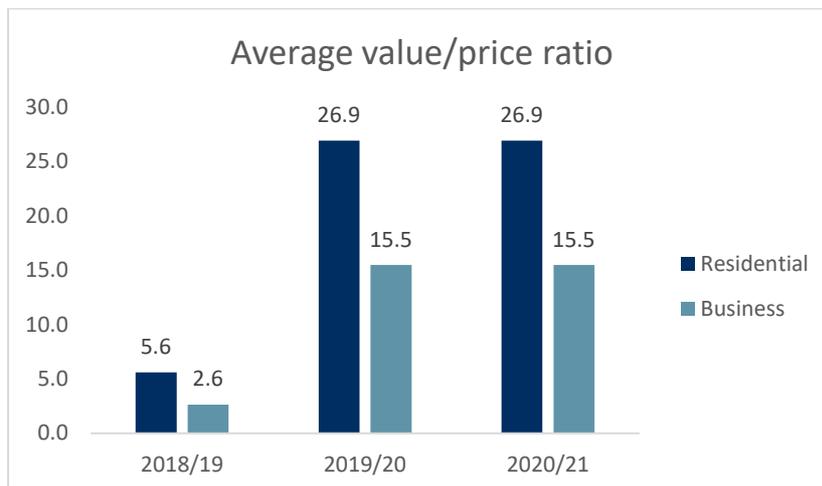


Figure 2.4 shows that the average residential customer using Telikom Fixed data bundle in 2018 would have paid 5.6 times as much if making the same usage at standard data tariffs. This ratio increased to 26.9 in July 2019. Similarly, the average business customer using Telikom Fixed data bundle in 2018 would have paid 2.6 times as much if making the same usage at standard data tariffs and this ratio increased to 15.5 in July 2019. It is clear that since July 2019 bundled tariffs have represented very good value for money compared with the standard tariffs.

Questions

4. Please comment on this analysis of the value of tariff bundles. Do you agree that the market seems to be providing bundles to suit each segment of users – from large to small - without the need for regulatory intervention?

2.4 Increasingly affordable tariffs

According to the most recent World Bank data² the Gross National Income per capita in PNG is USD 4240. This means that the UN's affordability target of 1GB broadband at 2% of GNI equates to a monthly cost of 7.07 USD or 14.91 Kina per month³.

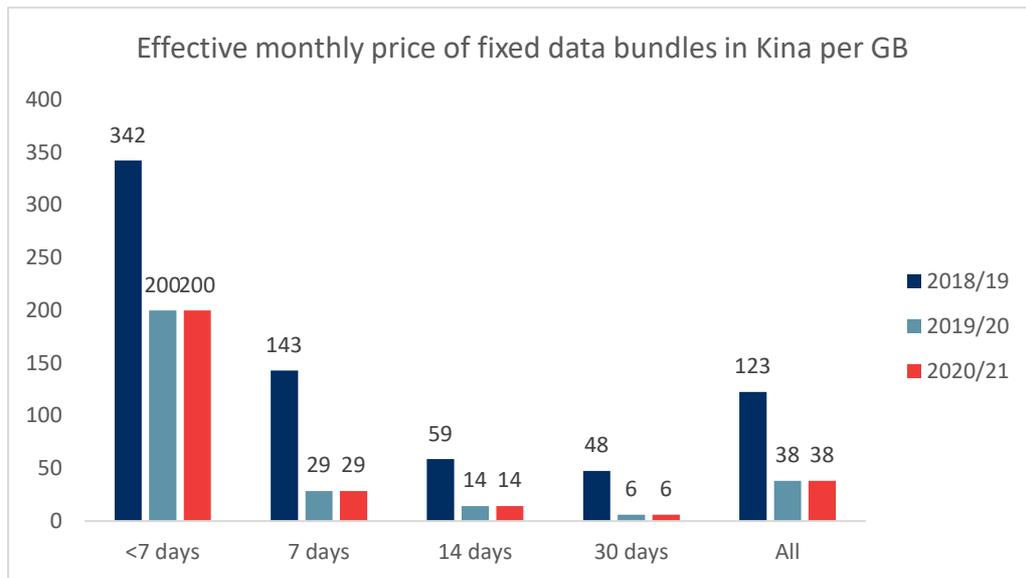
Figure 2.5 shows that the effective price of Telikom Fixed residential data bundles is currently on average 38 Kina per GB per month, about 2.5 times the affordability target⁴. However, the price is below the affordability threshold for 14-day and 30-day data bundles.

² Data is for 2020. See: <https://data.worldbank.org/indicator/NY.GNP.PCAP.PP.CD?locations=PG>

³ Converted at a PPP exchange rate of 2.11. See: <https://data.worldbank.org/indicator/PA.NUS.PPP>

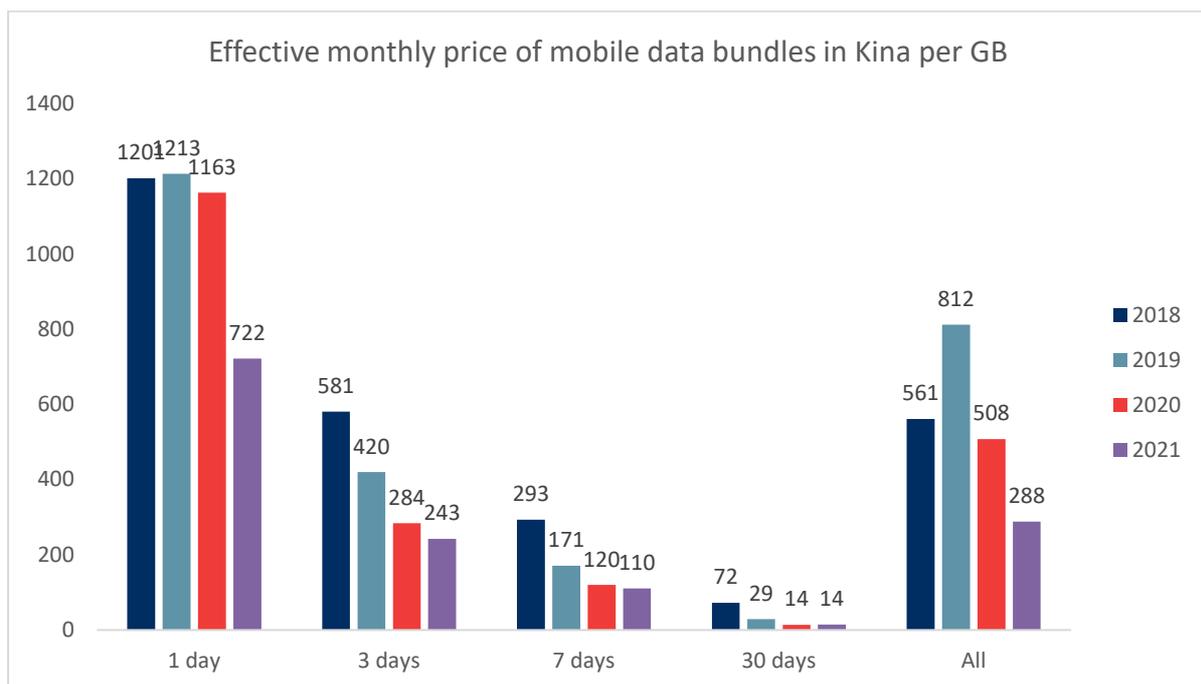
⁴ However, the Alliance for the Affordable Internet (A4AI) estimated that the monthly cost of 1 GB as 10.69% of GNI in 2020 – i.e., nearly 5 times the affordability target. See: https://a4ai.org/extra/baskets/A4AI/2020/mobile_broadband_pricing_gni

Figure 2.5: Affordability of Telikom Fixed data-only bundles



Prices are higher for users that rely on mobile communications. Figure 2.6 shows that the effective price per GB per month in Digicel’s data bundles is on average 288 Kina per GB per month, almost 20 times the affordability target. Only for 30-day data bundles is the affordability target currently achieved.

Figure 2.6: Affordability of Digicel’s data-only bundles



Questions

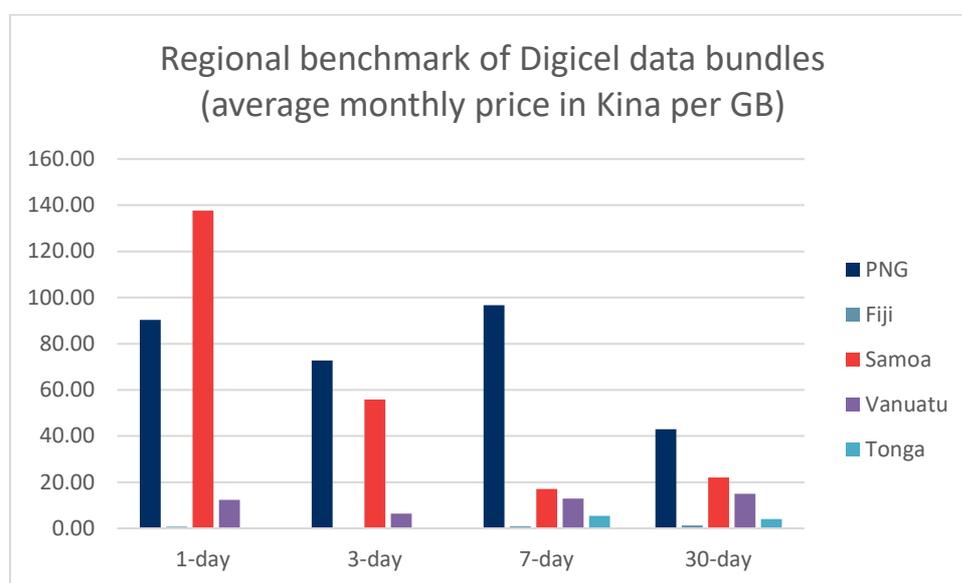
5. Please comment on this analysis of the affordability of data-only tariff bundles.

6. Do you agree that, with CS2 now providing the operators with access to vastly increased international capacity at much lower unit costs, the effective price per GB should fall rapidly towards the internationally agreed affordability target? If not, please explain your answer and suggest an alternative affordability target for PNG.

2.5 Regional tariff benchmark

One potential reason for tariffs being well above the affordability target is the higher than average cost of providing data services in Pacific Islands nations⁵. To determine the significance of this factor we have compared the average cost per GB of Digicel data bundles in PNG with those of Digicel subsidiaries in Fiji, Samoa, Tonga and Vanuatu. Figure 2.7 shows this comparison using tariffs prevailing in August 2021.

Figure 2.7: Regional benchmark of data-only tariff bundles⁶



This analysis shows that Digicel tariffs in PNG are roughly the same as in Samoa, but 3-4 times those of its sister companies in Tonga and Vanuatu and on 30 times higher than those of Digicel Fiji.

Questions

7. Please comment on this regional benchmark of data-only tariff bundles.
8. Do you agree that, with CS2 now providing the operators with access to vastly increased international capacity at lower unit costs, the effective price per GB of data

⁵ This fact has been recognised by, amongst others, the Alliance for the Affordable Internet which has advocated the “2 for 1” affordability target with the aim of achieving “5 for 2” in 2026. See: https://a4ai.org/affordability-report/report/2018/#how_does_geography_impact_affordability?

⁶ This analysis is presented on the basis of simple exchange rates. However, the picture does not change much if purchasing power parities (PPPs) are used instead.

should now fall rapidly towards the Regional benchmark level? If not, please explain your answer and suggest an alternative benchmark for PNG.

3 IS A RETAIL SERVICE DETERMINATION JUSTIFIED?

The analysis presented in the previous chapter demonstrates that:

- Competition in the supply of voice and data telecommunications is reasonably effective, with strong evidence of suppliers using bundled tariffs to attract customers;
- Consumers are benefitting from lower prices within tariff bundles which are suitable for a wide range of consumers, but standard tariffs are much higher and have not changed for several years;
- Prices, even within bundles, are generally high compared with regional benchmarks and affordability targets.

NICTA is concerned about persistently high prices; however, there is at least the prospect of prices falling significantly now that CS2 is operational. NICTA is also concerned that some customers on standard tariffs are particularly disadvantaged; however, the significance of this issue depends on the number of customers affected (which is currently unknown).

It appears that a retail service determination could be justified, but equally the problems of persistently high tariffs may be resolved more quickly and more easily through competition. The lack of tariff changes in the past year (other than from Digicel) is concerning; but it is still too early to tell for certain. One approach would be for NICTA to continue the “wait and see” approach that has been adopted since the first half of 2020, and to allow time for market forces to reflect in retail price reductions the relative abundance and lower prices of internet access following CS2 being commissioned and going into commercial operation.

Questions

9. Please comment on the proposal to adopt a “wait and see” regulatory approach in anticipation of a significant fall in voice and data tariffs now that CS2 is operational. What is appropriate timeframe for this approach?
10. To what level should NICTA expect retail prices to fall, relative to international benchmarks and broadband affordability targets?

4 CONSULTATION QUESTIONS ARISING FROM THIS STUDY REPORT

For ease of reference the consultation questions from the previous chapters are reproduced below:

1. [For network operators] What proportion of minutes, SMS and data MB are currently billed at standard tariffs?
2. Do you agree that it is reasonable to expect some reduction in standard tariffs over time, even if the reductions are not as great as can be obtained by customers migrating to bundled offers?
3. Do you agree that the number and frequency of changes in tariff bundles is a sign of healthy competition in the PNG telecommunications market?
4. Please comment on this analysis of the value of tariff bundles. Do you agree that the market seems to be providing "something for everyone" without the need for regulatory intervention?
5. Please comment on the analysis of the affordability of data-only tariff bundles.
6. Do you agree that, with CS2 now providing the operators with access to vastly increased international capacity at much lower unit costs, the effective price per GB should now fall rapidly towards the internationally agreed affordability target? If not, please explain your answer and suggest an alternative affordability target for PNG.
7. Please comment on the regional benchmark of data-only tariff bundles.
8. Do you agree that, with CS2 now providing the operators with access to vastly increased international capacity at much lower unit costs, the effective price per GB should now fall rapidly towards the benchmark level? If not, please explain your answer and suggest an alternative benchmark for PNG.
9. Please comment on the proposal to adopt a "wait and see" regulatory approach in anticipation of a significant fall in voice and data tariffs now that CS2 is operational. What is appropriate timeframe for this approach?
10. To what level should NICTA expect retail prices to fall, relative to international benchmarks and broadband affordability targets?