

## **RECOMMENDATION REPORT**

**A Report to the Minister recommending the adoption of a Retail Service  
Determination under Section 158 of the National ICT Act 2009**

Issued by NICTA, Port Moresby on **5 March 2024**

## Table of Contents

Executive Summary	i
1. Background	1
<b>1.1 Retail Services Determination 1 of 2012 and RSD Recommendation of 2017</b>	<b>1</b>
<b>1.2 Current RSD Public Inquiry - 2022</b>	<b>1</b>
2. OBJECTIVE OF THE RETAIL SERVICE DETERMINATION	4
3. REASONS FOR NICTA'S INTERVENTION	4
<b>3.1 Digicel's off-net/on-net price discrimination lessens competition</b>	<b>4</b>
<b>3.2 Digicel's price difference of off-net and on-net calls cannot be justified based on costs differences</b>	<b>6</b>
4. THE RECOMMENDED TERMS OF THE PROPOSED RETAIL SERVICE DETERMINATION	8
<b>4.1 Proposed Licensee</b>	<b>8</b>
<b>4.2 The Retail Service</b>	<b>8</b>
<b>4.3 Proposed Period</b>	<b>9</b>
Time For Implementation	9
<b>4.4 Proposed Pricing Principles</b>	<b>9</b>
<b>4.5 Monitoring Compliance</b>	<b>10</b>
5. THE PROPOSED RETAIL SERVICE REGULATION MEETS ALL THE RETAIL REGULATION CRITERIA UNDER SECTION 158 OF THE NICTA ACT 2009	11
<b>5.1 The proposed determination meets the competition objective in accordance with Sections 158(a) and 158 (b) of the Act</b>	<b>11</b>
<b>5.2 The proposed determination meets the efficiency objective in accordance with Section 158 (c) of the Act</b>	<b>13</b>
<b>5.3 The proposed determination meets the criterion in Section 158 (d) of the Act</b>	<b>16</b>
5.4 The aggregate likely benefits of making the retail service determination outweighs any aggregate likely detriments in accordance with Section 158(d) of the Act	16
6. CONCLUSION	20
ANNEX A. RETAIL SERVICE DETERMINATION	21
<b>1 Name of the Determination</b>	<b>21</b>
<b>2 Commencement and expiry</b>	<b>21</b>
<b>3 Definitions</b>	<b>21</b>
<b>(1) Subject to subsection (2), unless the context otherwise requires, terms used in this Determination have the same meaning as in the Act.</b>	<b>21</b>
<b>4 Application</b>	<b>22</b>
<b>5 Limit on price discrimination between on-net and off-net calls and SMS</b>	<b>23</b>
<b>SCHEDULE 1: FORMAT FOR COMPLIANCE DATA REPORTS</b>	<b>26</b>
NETWORK OPERATOR	26

Post-paid 26

Post-paid 26

ANNEX B. AN ILLUSTRATION OF HOW A DOMINANT OPERATOR'S OFF-NET/ON-NET PRICE DISCRIMINATION RAISES THE PRICE PAID BY CUSTOMERS OF SMALLER NETWORKS AND HOW THE PROPOSED DETERMINATION WOULD REDUCES PRICES FOR ALL 29

**Average Price of the dominant operator and the smaller network when price differential is unjustifiably large ..... 30**

**Average Price of the dominant operator and the smaller network when price differential is capped to the MTAS charge..... 30**

ANNEX C. RELEVANT MARKET DEFINITION 32

**Introduction: The prepaid and postpaid national retail mobile voice services ..... 32**

**Market Definition..... 32**

Relevant Markets – Prepaid Services ..... 34

Relevant Market – Postpaid Services ..... 36

ANNEX D. DIGICEL'S SUBSTANTIAL MARKET POWER ANALYSIS 38

**Digicel has a very high market share exceeding common thresholds used to presume the existence of a substantial degree of market power..... 39**

**The large scale of Digicel's network is a source of economic strength in the prepaid and postpaid relevant markets..... 43**

**Digicel controls infrastructure not easily duplicated which is a source of economic strength in the prepaid and postpaid relevant markets..... 44**

**Easy or privileged access to capital markets ..... 45**

**Digicel position of economic strength affords it the power to behave to an appreciable extent independent of competitors, customers, and consumers in the relevant prepaid and postpaid markets ..... 46**



## Executive Summary

1. Part VII of the National Information and Communications Technology Act 2009 (“the Act”) give power to the Minister, upon the recommendation of the National Information and Communications Technology Authority (“NICTA”), to make a retail service determination in relation to a specific retail service supplied by an operator licensee.
2. NICTA has completed a public inquiry into whether mobile originated retail national voice call services that are supplied by Digicel (PNG) Ltd (“Digicel”) on a prepaid and postpaid basis, should be subject to a retail service determination that limits the level of price discrimination between on-net and off-net calls.
3. The markets within which the mobile originated retail national voice call service is supplied are not effectively competitive. NICTA found that Digicel alone, has substantial market power in those (prepaid and postpaid) markets. In addition, NICTA found that Digicel’s large price difference between mobile national off-net and on-net calls cannot be justified based on cost differences between those calls.
4. By increasing the price difference between off-net and on-net calls beyond what would be reasonable to reflect differences in costs, a large operator like Digicel, discourages potential customers from subscribing to smaller networks. That is because being in a smaller network implies that most mobile calls would be off-net, to Digicel.
5. This creates a vicious circle for smaller networks, where the demand for their services is artificially diminished, which in turn leads to low revenue growth, low profitability, and low investment on network expansion and upgrades. This lessens competition in the market, increases market concentration, reduces the smaller operators’ incentive to invest on network expansion, and increases prices to all consumers compared to a situation where no such unjustified price differential exists. The proposed determination seeks to address that by limiting the price difference to a maximum equivalent to the domestic mobile termination access service (MTAS) charge, or to the domestic fixed termination access service (FTAS) charge when applicable.
6. NICTA considered such a proposal for a retail service determination against the retail regulation criteria specified in section 158 of the Act and is satisfied that all of those criteria would be met by the introduction of such a retail service determination. Specifically, that the proposed determination meets the retail regulation criteria in Sections 158(a) through 158(d) of the Act:
  - “(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 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 that 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.”*

7. Accordingly, NICTA recommends that the Minister subject mobile originated retail national voice call services that are supplied by Digicel on a prepaid and postpaid basis to a retail service determination that contains a pricing principle that limits the per minute price difference between off-net and on-net calls to a maximum equivalent to the domestic MTAS charge (or the FTAS charge when applicable).
8. In addition, NICTA recommends that the pricing principle be applied to all of Digicel's prepaid and postpaid mobile services where the national mobile voice call service is supplied, whether it is as a standard service, single-service bundle (voice only service) or bundled together with other services, including but not limited to, SMS and data services.
9. NICTA recommends that this retail service determination apply for a period of three years, which shall be reviewed twelve months prior to expiration.
10. A retail service determination that reflects this recommendation (and which NICTA has considered against, and is satisfied meets all of, the retail regulation criteria) is provided in Annex A.
11. This report identifies the particular terms of the recommended retail service determination and the extent to which the retail regulation criteria would be met by the recommended determination. This report fulfils the requirement set out in Section 159(1) of the Act.
12. NICTA has consulted with the relevant stakeholders through the public inquiry process in preparing this report.

## 1. Background

### 1.1 Retail Services Determination 1 of 2012 and RSD Recommendation of 2017

13. On the 20<sup>th</sup> November 2017, the National Information and Communications Technology Authority (NICTA), pursuant to Sections 157 and 230 of the National Information and Communications Technology Act 2009 (the “Act”), commenced a public inquiry to assess whether or not it was still necessary to continue the *Retail Services Determination 1 of 2012* that was expiring on the 25<sup>th</sup> October 2017.
14. NICTA staff have undertaken a fresh assessment of the retail mobile services market to determine whether or not the circumstances of the market warrant a recommendation being made to the Minister for a new retail service determination similar to the 2012 determination.
15. The main pricing principal of the *Retail Services Determination 1 of 2012* stated that Digicel shall not price discriminate on the basis of the mobile network (including its own) that will terminate the call except that Digicel may price discriminate between on-net and off-net calls (a) up to a limit of 40% for each separate minute of a national call), and (b) to the extent that any such differences in the price of an on-net call and the price of an off-net call are objectively justifiable based on differences in the costs of supplying the service
16. On the 26<sup>th</sup> July 2018, NICTA made a Recommendation to then Minister, late Hon. Samuel H. Basil, to continue the Retail Service Determination.
17. NICTA recommended to the Minister that Digicel shall not offer or charge prices for a Regulated Mobile Service that discriminate on the basis of the mobile network that will terminate the call, except that Digicel may price Off-net Calls above the price of On-net Calls to the extent that: (a) any such price differential is objectively justifiable based on differences in the costs of supplying the service; (b) such objective justification has been approved by NICTA following application by Digicel, such approval to be granted as expeditiously as possible bearing in mind the complexity of the evidence and of the issues raised by the application;
18. The Minister, on the 24<sup>th</sup> September 2018, even though accepting the merit of NICTA’s arguments, however “rejected” NICTA’s recommendation on the basis that the risk of Digicel reacting to the proposed determination by removing the 1Tok compo bundles was very high. The Minister was concerned that if Digicel does withdraw 1ToK compo bundle promotions in the event of a successful NICTA retail service determination, this would affect many Digicel customers that were enjoying these cheaper bundled rates.

### 1.2 Current RSD Public Inquiry - 2022

19. Section 157 (1) of the National Information and Communications Technology Act 2009 (the “Act”) gives powers to the National Information and Communications Technology Authority (“NICTA”) to hold a public inquiry on a retail service. The purpose of the public inquiry is to assess 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 licensee, and if so, the appropriate terms of any such determination.

20. NICTA on 18 March 2022 commenced a public inquiry into a potential retail service determination in relation to voice and data services (the “Public Inquiry”). On the same date, NICTA published a “Discussion Paper: Public consultation into whether a recommendation should be made to the Minister for a retail service determination for voice and data services” (the “First Discussion Paper”), in accordance with Section 232 of the Act.
21. Following the publication of the First Discussion Paper, NICTA received comments from stakeholders, which are summarized and addressed in NICTA’s “Response to Comments Report: Public consultation into whether a recommendation should be made to the Minister for a retail service determination for voice and data services”, issued on 27 July 2022 (the “First Response to Comments Report”).
22. Following the first phase of the Public Inquiry and considering the comments received from interested parties, NICTA decided not to impose price caps on the retail services under consideration. Instead, NICTA chose to address the issue associated with the large price differentials between off-net and on-net mobile voice service of Digicel PNG Limited (“Digicel”).<sup>1</sup>
23. On 21 October 2022, NICTA commenced the second phase of the Public Inquiry by publishing a Public Notice, and a “Discussion Paper: To facilitate public consultation on potential Retail Services Determination in relation to On-net and Offnet Calls” (the “Second Discussion Paper”).
24. In its Second Discussion Paper, NICTA concluded that a retail service determination is warranted to impose price controls to eliminate the large price differential between off-net and on-net prices of Digicel only. NICTA’s view is based on the following reasons:
  - a) Digicel has a substantial degree of market power in the national mobile voice service market;<sup>2</sup>
  - b) this significant market power along with Digicel’s price discrimination between off-net and on-net prices, raises the switching costs of Digicel’s customers, which in turn creates barriers to expansion to Digicel’s competitors, cementing Digicel’s quasi monopoly position in the mobile voice market;<sup>3</sup> and
  - c) the proposed retail service determination meets the Retail Regulation Criteria under Section 158 of the Act, namely:

---

<sup>1</sup> NICTA. “Response to Comments Report: Public consultation into whether a recommendation should be made to the Minister for a retail service determination for voice and data services”, issued on 27 July 2022, page 4, Section 3. See also, Public Notice: PUBLIC INQUIRY – POTENTIAL RETAIL SERVICE DETERMINATION IN RELATION TO VOICE AND DATA SERVICES – ON-NET/OFF-NET VOICE AND MESSAGING SERVICES. Published 25<sup>th</sup> October 2022.

<sup>2</sup> Second Discussion Paper. Sec. 4.3.

<sup>3</sup> *Id.* Sec. 4.3

- “(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 124(2); and*
- (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 that 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.”*
25. Following the publication of the Second Discussion Paper, NICTA received comments from the following stakeholders:
- a) Digicel (PNG) Limited, dated 30 November 2022;
- b) Digitec Communications Limited T/A Vodafone PNG, dated 30 November 2022; and
- c) Telikom Limited, dated 30 November 2022.
26. NICTA provided an additional opportunity to interested parties to comment on the submissions of other interested parties. Digicel submitted comments on Digitec Communications Limited and Telikom’s submissions, dated 17 February 2023.
27. Telikom Limited and Digitec Communications Limited fully supported NICTA’s conclusions and proposed determination. On the other hand, Digicel, through its submissions, opposed NICTA’s preliminary conclusions and proposed retail service determination to regulate the difference between the price of (prepaid and postpaid) on-net and off-net national mobile voice service.
28. On 5 March 2024, NICTA issued its “Response to Comments Report: In Reference to Discussion Paper: To facilitate public consultation on potential Retail Service Determination in relation to On-net and Offnet Calls” (“Second Response to Comments Report”). In said report, NICTA addressed the comments received from each interested party. In particular, NICTA expanded and revised its analysis and conclusions presented in the Second Discussion Paper to address the numerous comments received from Digicel. That led to revisions to the proposed retail service determination.

29. In NICTA's Second Response to Comments Report we also expanded our explanation to show that the proposed determination meets the Retail Regulation Criteria under Section 158 of the Act. NICTA is satisfied that all the criteria are met. More on this later in this report.

## **2. OBJECTIVE OF THE RETAIL SERVICE DETERMINATION**

30. The broad objective is to increase competition in the markets within which the prepaid and postpaid mobile national voice services are supplied. To accomplish that, this retail service determination prevents Digicel from using an unjustifiably large price difference between off-net and on-net calls. That practice exacerbates the so-called "club effect" which discourages consumers from subscribing to smaller networks.

## **3. REASONS FOR NICTA'S INTERVENTION**

### **3.1 Digicel's off-net/on-net price discrimination lessens competition**

31. The markets within which the national mobile voice (prepaid and postpaid) services are supplied are not effectively competitive. One company, Digicel, has dominated those markets for nearly 15 years. Digicel's market share (by revenue) on the mobile national prepaid voice service is approximately 95.1%, while it is 95.2% in the postpaid market.
32. Such a high market concentration in a market with large barrier to entry and expansion, such as mobile communications, leads to higher prices relative to more competitive markets.
33. We can use the Herfindahl-Hirschman index (HHI),<sup>4</sup> a commonly used index of market concentration, to illustrate that higher market concentration leads to higher prices. Figure 1 uses data on prices of mobile voice and short messaging service ("SMS") from the International Telecommunications Union (ITU)<sup>5</sup> on a sample of countries in the Pacific region where Digicel operates. The HHI is computed based on market share data from Digicel.<sup>6</sup> Market share data is from 2015,<sup>7</sup> but market shares are generally quite stable unless there are major changes in the market structure. We did not find evidence of major changes in the market structure in these countries to lead us to believe that market shares had changed significantly. Figure 1 illustrates that where market concentration is higher, denoted by a higher HHI, prices tend to be higher, as in PNG.

---

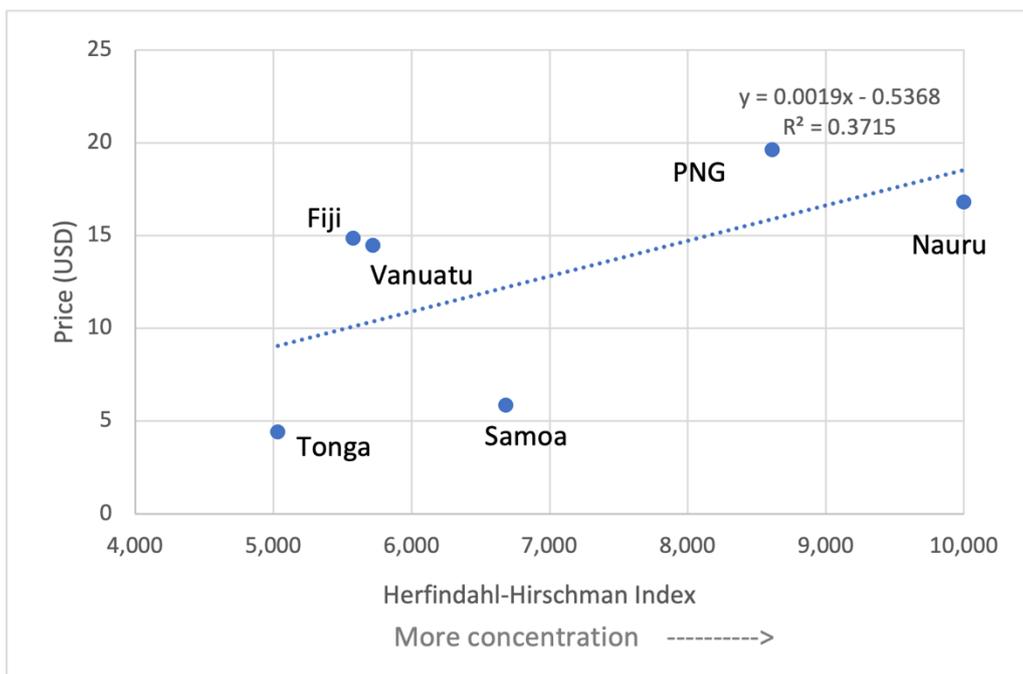
<sup>4</sup> The HHI is calculated by adding the square of the market share of each company in the market. So, if there are three companies with market shares,  $s_1$ ,  $s_2$  and  $s_3$ ; then the HHI is calculated as:  $(s_1)^2+(s_2)^2+(s_3)^2$ .

<sup>5</sup> International Telecommunications Union, ICT Price Baskets (IPB) for 2021. Price is for low consumption basket of 70 minutes and 20 SMS. Price is in USD. <https://www.itu.int/en/ITU-D/Statistics/Dashboards/Pages/IPB.aspx>

<sup>6</sup> *Securities and Exchange Commission. Form F-1 Registration Statement. Digicel Group Limited, 26 June 2015, page 11. Except for PNG which source is NICTA using latest data available.* [https://www.sec.gov/Archives/edgar/data/1645826/000119312515236163/d946689df1.htm#rom946689\\_5](https://www.sec.gov/Archives/edgar/data/1645826/000119312515236163/d946689df1.htm#rom946689_5)

<sup>7</sup> Except PNG which data is from 2019.

**Figure 1. Higher market concentration leads to higher prices of mobile voice/SMS**



Source: Data of prices is from ITU. ICT Price Baskets (IPB). Price is in US Dollars for basket of 70 minutes and 20 SMS in year 2021. <https://www.itu.int/en/ITU-D/Statistics/Dashboards/Pages/IPB.aspx> HHI calculated based on Digicel market share data from 2015, except for PNG which is based on 2019 data. Securities and Exchange Commission. Form F-1 Registration Statement. Digicel Group Limited, 26 June 2015, page 11. [https://www.sec.gov/Archives/edgar/data/1645826/000119312515236163/d946689df1.htm#rom946689\\_5](https://www.sec.gov/Archives/edgar/data/1645826/000119312515236163/d946689df1.htm#rom946689_5)

34. When mobile operators price their off-net calls significantly higher than on-net calls, they create the so-called “club effect”. That is the tendency of customers to subscribe to the same operator as their family, friends, and closed associates, to avoid paying higher priced off-net calls. The effect is negligible if the price difference is small, reflecting the extra cost of an off-net call.
35. The attempt to create a “club effect” is futile if an operator’s network is small relative to others. However, if an operator’s network is significantly larger than the rest, as is the case for Digicel, the effect could be powerful. By increasing the price difference between off-net and on-net calls beyond what would be reasonable to reflect differences in costs, a large operator like Digicel, could discourage potential customers from subscribing to smaller networks. That is because being in a smaller network implies that most mobile calls would be off-net, to Digicel. This changes the nature of competition. In theory, potential customers pondering which network to subscribe, would choose based on their prices, offers/promotions, quality of services, availability and reliability of services, and other characteristics that makes a network appealing. In practice, an operator such as Digicel, with substantial market power, could raise the price differential high enough to make those other potential benefits of subscribing to a rival network not worth the high price of off-net calls to Digicel. See Annex B for a numerical example.

36. This creates a vicious circle for smaller networks, where the demand for their services is artificially dampened, which in turn leads to low revenue growth, low profitability, and low investment on network expansion and upgrades. This lessens competition in the market, increases market concentration, reduces the smaller operators' incentive to invest on network expansion, and increases prices to all consumers compared to a situation where no such unjustified price differential exists. That is what the proposed determination seeks to address.

### **3.2 Digicel's price difference of off-net and on-net calls cannot be justified based on costs differences**

37. A reasonable argument can be made that the cost of Digicel's national mobile outgoing calls may be different depending on whether it is an on-net or an off-net call. Figure 2 is used to illustrate this plausible cost difference. The figure depicts two networks; one represents Digicel's with orange coloured cell sites and customers marked D1 and D2. The second network is represented in black coloured cell sites and customers, one of which is marked as O1.
38. There are two localities represented by oval shapes coloured blue and green. Digicel's customer D1 is in Blue Town, while D2 is in Green City. The Other network customer, O1 is in Green City as shown in the figure.
39. Figure 2 illustrates with dotted lines the signal paths of an on-net call from Digicel's customer D1 to D2, and an off-net call from Digicel's customer D1 to O1. Different segments of the signal path are marked as L1, L2, L3, etc., and each segment has an associated cost such as, Cost (L1) or Cost (L2), for example. Note that Cost (L1) plus Cost (L2) is equal to Cost (L1 + L2). Using that notation, we can show that an on-net call from D1 to D2 could have different costs than an off-net call from D1 to O1:

Cost of on-net call from D1 to D2 = Cost (L1+L2+L3+L4), and

Cost of off-net call from D1 to O1 = Cost (L1+L2) + MTAS.

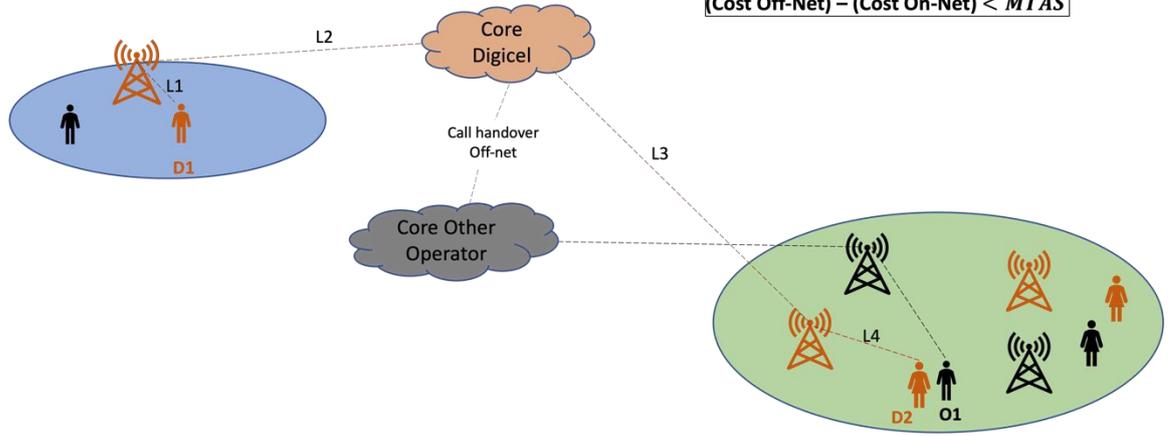
Where the MTAS is the per-minute rate for mobile termination access service (MTAS), also known as the mobile termination rate.

40. Therefore, the cost difference between an off-net call and an on-net call is:

$$(\text{Cost off-net}) - (\text{Cost on-net}) = \text{MTAS} - \text{Cost (L3+L4)}.$$

**Figure 2. Illustration of the cost difference between on-net and off-net calls**

Illustration: Digicel call from blue town to green city  
 On-net call from D1 to D2  
 Off-net call from D1 to O1  
 Digicel is Orange Network  
 Other operator is Black Network



41. Based on the expression above, we can infer the following. First, the cost of off-net and on-net calls would be equal only in case the MTAS rate were to be equal to the cost of segments L3 and L4. Second, if Cost (L3+L4) is very small, then the cost difference would be very close to the MTAS rate. Third, given that the cost of segments L3 and L4 is always positive, all we can conclude is that the difference in costs between off-net and on-net calls is lower than the MTAS rate, which leads us to the following expression:

$$(\text{Cost off-net}) - (\text{Cost on-net}) < \text{MTAS}.$$

42. Based on the foregoing analysis, we conclude that if Digicel were to price their off-net and on-net calls based on cost differences between these, the maximum price difference we would observe would not exceed the MTAS rate, which currently is 8 Toea per minute. In contrast we know that Digicel's off-net standard prices could exceed their on-net prices by 40 Toea per minute (off-peak) and 20 Toea per minute (peak) as shown in Table 1.

**Table 1. Difference in Digicel's off-net and on-net price per minute – Standard rates (Sep. 2022)**

	Off-net (PGK)	On-net (PGK)	Difference in price (off-net) – (on-net)
Peak	1.0	0.8	0.20
Off-peak	1.0	0.6	0.40

Source: NICTA, based on information provided by operators. Prices are standard rates for September 2022.

43. Based on the foregoing analysis, NICTA proposes to cap the maximum difference between Digicel's price per minute of on-net and off-net calls equivalent to the MTAS rate per minute. A similar analysis is applicable to off-net calls originated in Digicel's mobile network that terminate in a fixed network. Therefore, NICTA also proposes to cap the maximum price difference between Digicel on-net and off-net calls terminating in a fixed network to the rate charged for fixed termination access service (FTAS).

#### **4. THE RECOMMENDED TERMS OF THE PROPOSED RETAIL SERVICE DETERMINATION**

44. The recommended terms of the proposed retail service determination are specified below. A determination reflecting these terms is attached in Annex A.

##### **4.1 Proposed Licensee**

45. Pursuant to Section 161(1) of the Act, a retail service determination must specify the operator licensee to which it applies. Furthermore, in accordance with Section 158 (b)(i) it may only apply to licensees that have been found to have a substantial degree of power in the market (SMP) in which the retail service is supplied.
46. NICTA found that Digicel alone has SMP in the following prepaid and postpaid relevant markets within which the retail mobile service is supplied:<sup>8</sup>
- The market for prepaid national mobile voice only service,
  - The market for prepaid mobile bundled services, which include national voice, SMS, and data services sold as a bundle, and
  - The market for postpaid mobile bundled services which include national voice, SMS, and data services sold as a bundle.
47. NICTA recommends that the proposed retail service determination apply only to Digicel.

##### **4.2 The Retail Service**

48. The proposed determination seeks to regulate Digicel's national mobile voice call service which is sold as either a prepaid or a postpaid service.
49. The prepaid retail mobile voice service is sold typically in bundles. Bundles are sold as a single-service bundle or bundled with other services. Single-service mobile bundles refer to voice only service, or SMS only, or data (i.e., Internet) only service. Digicel provides a menu of options for consumers to pick different quantities of minutes, or SMS, or Gigabytes of data. Bundles have a term (time until expiration) and maximum quantities to be consumed. Consumption outside the bundle is charged at the standard rates, which are higher than the unit price charged for consumption within a bundle.

---

<sup>8</sup> See Annex C for the analysis on the definition of relevant markets and Annex D for the analysis of Digicel's substantial market power.

50. Multiple-service bundles typically combine voice, SMS, and data services. Bundles come with various combinations of minutes, SMS and Gigabytes with different prices and terms (1 day, 7 days, and 30 days). Again, bundles have a term and maximum quantities to be consumed. Consumption outside the bundle is charged at the standard rates, which are higher than the unit price charged for consumption within a bundle.
51. The national prepaid retail mobile voice service is typically purchased as either a single-service bundle (i.e., voice-only bundle), or bundled together with SMS and data.
52. The national post-paid retail mobile voice service is sold typically bundled with SMS and (mobile) data (Internet) service. The majority of users of the postpaid service are medium/large businesses and organizations including government, and the bundle of services can be customized to the clients' needs with various options of add-on services.
53. NICTA recommends that the proposed retail service determination apply to both mobile-to-mobile and mobile-to-fix network call services. For the avoidance of doubt, NICTA recommends that the retail service determination apply only to national calls (i.e., calls made within PNG).

#### **4.3 Proposed Period**

54. Pursuant to Section 159(1)(b)(iii) of the Act, a retail service determination must specify an expiry date that is not longer than five years from the commencement date. In addition, a determination may not apply retrospectively in accordance with Section 161(3) of the Act.
55. NICTA considered the possibility of a five-year term for the proposed determination. Out of the abundance of caution, given the added uncertainty on how the market would evolve due to the entry of Digitec-Vodafone in 2022, NICTA decided instead for a shorter three-year term. This will allow NICTA to reassess Digicel's position in the market after a shorter period of time, compared to a five-year term. In consequence, NICTA recommends that the proposed retail service determination remain in effect for a period of three years unless revoked earlier.
56. NICTA recommends also to initiate a review of this determination 24 months from the commencement date, to determine whether this determination should be renewed, amended, or revoked.

#### **Time For Implementation**

57. To allow Digicel ample time to make changes to its price schedules, billing systems, and inform its customers and the general public, NICTA recommends to give Digicel 30 days from the Commencement date to implement the retail service determination.

#### **4.4 Proposed Pricing Principles**

58. Pursuant to Section 161(2) (c) of the Act, a retail service determination may specify a pricing policy and/or principle that must be complied with by a licensee in its pricing of a retail service. A determination may also specify conditions relating to the pricing of a retail service that are to be determined by NICTA in accordance with Section 161(2)(d) of the Act and, may require a licensee to

supply specified information to NICTA on specified terms in accordance with Section 161(2)(e).

59. It is proposed that the retail service determination establishes a maximum price difference between Digicel's mobile off-net and on-net national calls equal to the MTAS (or FTAS when applicable) wholesale charge. That is, Digicel's price of off-net calls per minute minus the price of on-net calls per minute, must be lower or equal to the applicable charge per minute for the MTAS (or FTAS when applicable). In a formulaic way this is equivalent to:

$$(Price\ off - net) - (Price\ on - net) \leq MTAS\ charge, \text{ and}$$

$$(Price\ off - net) - (Price\ on - net) \leq FTAS\ charge$$

60. The MTAS (or FTAS) charge is the applicable per minute charge between Digicel and the corresponding interconnecting licensed operator in PNG.
61. NICTA also proposes that the proposed determination also requires Digicel to apply a consistent billing and charging (i.e., per minute or per second) between national mobile on-net and off-net calls, whether prepaid or postpaid.

#### **4.5 Monitoring Compliance**

62. Pursuant to Section 161(2)(g), NICTA may require Digicel to comply with any terms and conditions advised by NICTA that NICTA considers necessary or desirable to monitor compliance with the retail service determination.
63. NICTA intends to monitor Digicel's compliance with the proposed determination on a quarterly basis. NICTA shall monitor that Digicel standard per minute rates of off-net and on-net calls, are within the maximum difference allowed by this determination, during peak and off-peak times.
64. In addition, NICTA shall monitor that the difference between the average price per minute of off-net and on-net calls is within the allowed limits.

To that end, the average price per minute will be calculated based on the average revenue per minute. That is, the revenue accrued to Digicel from selling national mobile voice service divided by the total mobile outgoing minutes. The average revenue per minute will need to be calculated separately for on-net calls and for off-net calls, according to the following formulas:

$$Average\ on - net\ price = \frac{Revenue\ national\ on - net\ calls}{Minutes\ of\ national\ on - net\ calls}$$

$$Average\ off - net\ price = \frac{Revenue\ national\ off - net\ calls}{Minutes\ of\ national\ off - net\ calls}$$

65. Compliance monitoring will be performed separately for prepaid voice services and postpaid services, whether they are sold as voice only (single-service bundle) or charged outside a bundle (i.e., charged at standard rates), or as bundled services.

**5. THE PROPOSED RETAIL SERVICE REGULATION MEETS ALL THE RETAIL REGULATION CRITERIA UNDER SECTION 158 OF THE NICTA ACT 2009**

66. NICTA shows below that the proposed determination meets all the retail regulation criteria.

**5.1 The proposed determination meets the competition objective in accordance with Sections 158(a) and 158 (b) of the Act**

67. The proposed determination meets the retail regulation criteria in Sections 158(a) and 158(b) of the Act. In particular:

*“(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 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;”*

68. As explained earlier, by reducing Digicel’s price differential between off-net and on-net calls to a maximum value equal to the MTAS (or FTAS when applicable), the proposed determination will reduce the price of off-net calls and enable consumers to subscribe to smaller rival networks, encourage investment on the expansion of smaller networks, reduce market concentration, and promote effective competition in the relevant prepaid and postpaid mobile markets<sup>9</sup> in accordance with Section 158(a) of the Act.

69. The proposed determination also meets the retail regulation criteria in accordance with section 158(b) of the Act. In particular, with respect to Section 158(b) (i), NICTA found that Digicel alone has a substantial degree of market power in the following relevant markets within which the prepaid national mobile voice service is supplied (See Annex D for a full analysis):

- The prepaid mobile national voice only market, and
- The prepaid mobile bundle which includes, national voice call service, SMS, and data service.

---

<sup>9</sup> See Annex C for the relevant markets analysis.

Furthermore, NICTA also found that Digicel has a substantial degree of market power in the following relevant market within which the postpaid national mobile voice service is supplied (see Annex D):

- The postpaid mobile bundle which includes, national voice call service, SMS, and data service.
70. Having NICTA established that Digicel has a substantial degree of market power in the three abovementioned relevant markets, the criterion in Section 158(b)(i) is satisfied.
71. NICTA is also convinced that the proposed determination meets the criteria in Section 158(b)(ii) of the Act; in particular, that in the absence of the proposed determination and during the term of it, Digicel's substantial degree of market power is likely to:
- persist in the relevant markets, and
  - expose retail customers to a material risk of higher prices where they acquire the retail service from that operator licensee.

In the absence of the proposed determination, Digicel Substantial degree of market power is likely to persist in the relevant markets over the term of the proposed determination.

72. Digicel substantial degree of market power has persisted for over ten years. Its position in the mobile market is so entrenched that prior attempts to significantly erode its market power have been unsuccessful. Between 2014 and 2019, Bmobile in partnership with Vodafone from Fiji, mounted an attack on Digicel to try to erode its near monopoly position on mobile communications. After 100 million USD invested jointly by Telikom/Bmobile in network upgrades <sup>10</sup>and five years, the partnership only managed to reduce by 5.7 percentage points Digicel's market share (by subscribers). See Table 6 in Annex D.
73. Once again, the Vodafone brand is back in PNG, this time in partnership with Digitec Communications. Would this time be different? NICTA does not know. But what we know is that without the proposed determination Digicel would continue to magnify its already strong "club effect" so that potential customers will find it unappealing to join a much smaller rival network because most of the calls would be off-net to Digicel. This has the effect of dampening the demand for the smaller networks services, which leads to a vicious circle of low revenue, low profitability, and low investment for the smaller networks.
74. Digicel's price discrimination, unjustified by differences in costs between off-net and on-net calls, lessens competition and perpetuates Digicel's substantial market power.

In the absence of the proposed determination, Digicel substantial market power is likely to expose retail consumers to a material risk of higher prices and/or reduced service where they acquire the prepaid or postpaid mobile national voice service from Digicel during the term of the proposed determination.

---

<sup>10</sup> "Telikom PNG and bmobile rolling out joint 3G/4G network." CommsUpdate, Telegeography, 21 August 2014. <https://www.commsupdate.com/articles/2014/08/21/telikom-png-and-bmobile-rolling-out-joint-3g4g-network/>

75. In the absence of the proposed determination, Digicel will likely continue to price discriminate between off-net and on-net calls, to discourage consumers to join the smaller rival networks. This would perpetuate the very high concentration in the mobile market in PNG. As mentioned earlier, there is strong evidence that higher market concentration is associated with higher prices of mobile voice service as shown earlier in Figure 1.
76. In the absence of the proposed determination, Digicel will continue to hold a substantial degree of market power. This would translate into higher prices for all consumers, not only of the voice only service, but also of bundled services, both prepaid and postpaid.
77. The current higher prices of Digicel's mobile service relative to its rivals such as Digitec-Vodafone and Bmobile/Telikom (see Figure 6 in Annex D) would likely persist, leading consumers to pay Digicel higher prices or receive reduced services. As shown in Annex D, Digicel's mobile price of on-net calls (off-peak) is 100% higher than that of Digitec-Vodafone, while Digicel's price of on-net calls (peak) is 33% higher than that of Digitec-Vodafone.
78. Likewise, as shown in Table 8 in Annex D, Digicel's mobile bundles which include national voice, SMS, and data, provide a reduced service in terms of minutes, SMS and Megabytes of data than similarly priced bundles from Digitec-Vodafone. These service differences are likely to persist in the absence of the proposed determination. For the aforementioned reasons, the proposed determination meets the criteria in Section 158(b)(ii) of the Act.

## **5.2 The proposed determination meets the efficiency objective in accordance with Section 158 (c) of the Act**

79. The proposed determination meets the retail regulation criterion in Section 158(c) of the Act. In particular:
 

*“(c) specifically, in relation to the efficiency objective, that the operator licensee will not be prevented from achieving a return on assets during that period sufficient to sustain investment necessary to supply the retail service;”*
80. NICTA is convinced that the proposed determination would not prevent Digicel from achieving a return on assets during the period sufficient to sustain investment necessary to supply the mobile national voice call services for various reasons.
81. First, the proposed determination does not cap the price level of Digicel's on-net or off-net calls. It only caps the maximum difference between these prices. This gives ample flexibility to Digicel to adjust the level of these prices to fit its own commercial interests and maximize its return on assets.
82. Second, as we have shown earlier, Digicel prices are higher than its close competitors. That has allowed Digicel's subsidiary in PNG to achieve profit margins that are amongst the highest compared to other subsidiaries of Digicel Group and Digicel Pacific Limited. As an illustration, we present in Figure 3 the historical adjusted EBITDA margin of various subsidiaries of Digicel Group and

Digicel Pacific Limited around the world, including that in PNG.<sup>11</sup> It is clear that the subsidiary in PNG has been historically very profitable. Given that Digicel's substantial market power in PNG has been maintained for at least a decade,<sup>12</sup> the current adjusted EBITDA margin should be close to the historical margin shown in Figure 3.

83. The high historical EBITDA margin enjoyed by Digicel (PNG) as shown in Figure 3, of course implies that, Digicel (PNG) has enjoyed one of the highest return on assets<sup>13</sup> amongst subsidiaries of Digicel Group or Digicel Pacific Limited. Therefore, even in the hypothetical case that due to the proposed determination Digicel's market share were to decline to, say a level similar to that of Digicel Group's subsidiary in Jamaica, which at the time was 72%, all that would mean is that Digicel (PNG) would have a more normal level of profitability, and as a consequence, return on assets, than it had enjoyed historically. Moreover, in the context of a growing market such as that of PNG, Digicel's revenue and EBITDA, are growing. Given that the proposed determination will increase competition, that will boost the growth of the total market for mobile services, which in turn, would grow Digicel's revenue and EBITDA allowing Digicel to sustain the investment necessary to supply mobile national voice services.

---

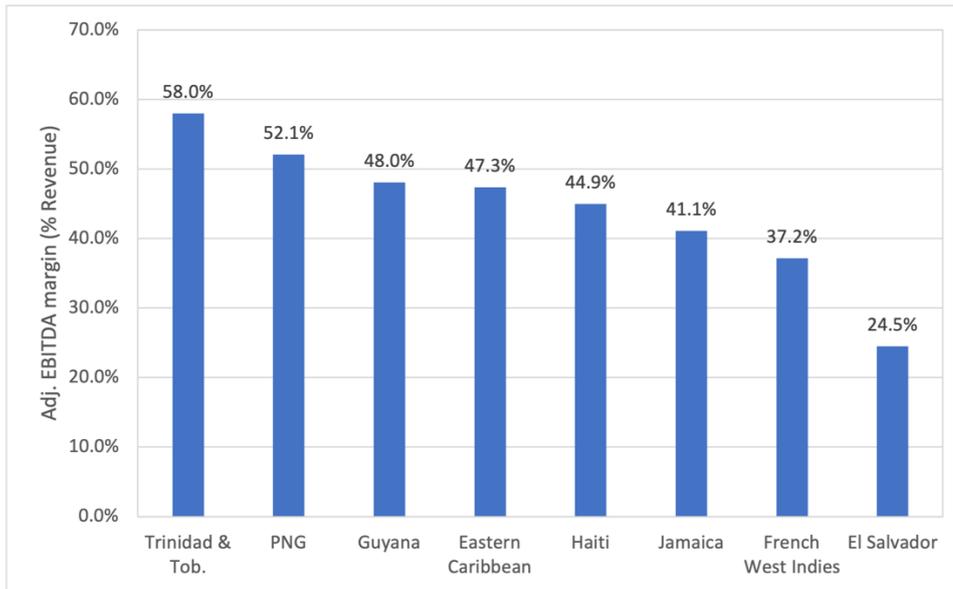
<sup>11</sup> Latest available data is from 2015. Securities and Exchange Commission. Form F-1 Registration Statement. Digicel Group Limited. 26 June 2015, page 108.

<https://www.sec.gov/Archives/edgar/data/1645826/000119312515236163/d946689df1.htm>

<sup>12</sup> See NICTA's Retail Service Determination of 2012.

<sup>13</sup> Return on Assets (ROA) is commonly defined as earnings before interest and taxes (EBIT) multiplied by (1 – tax rate) and then divided by total assets of a company. A pretax ROA is also common. In this case the earlier formula is not adjusted for taxes. Therefore, pretax ROA = EBIT/Total Assets. See Aswath Damodaran, *Investment Valuation*. Third Edition. John Wiley & Sons Inc. Hoboken, New Jersey: 2012. Pages 44-45. Given that EBITDA is correlated with EBIT, a change on EBITDA (holding all else constant) will affect the ROA.

**Figure 3. Digicel’s PNG subsidiary’s historical adjusted EBITDA margin compared to that of others subsidiaries**



*Source: Securities and Exchange Commission. Form F-1 Registration Statement. Digicel Group Limited. 26 June 2015. Note: adjusted EBITDA margin is weighted average of 2013 to 2015.*

84. Third, Section 158 (c ) does not require NICTA to guarantee Digicel’s historically high return on assets. Instead, it requires to show that Digicel’s return on assets would not be affected to such a degree as to prevent it from sustaining the investment necessary to supply the national mobile voice call services. Even ignoring the likely non-existent impact of the proposed determination on EBITDA, as explained above, one can infer from Figure 3, that other subsidiaries with much lower EBITDA margins, such as that in El Salvador, are nevertheless able to undertake significant investments to supply mobile national voice service. For example, in early 2017, Comms Update reported that Digicel Group’s subsidiary in El Salvador was going to invest USD 450 million in the rollout of its 4G network.<sup>14</sup> That clearly illustrates that even in the extremely improbable case that Digicel’s EBITDA margin in PNG were to fall to the level of the subsidiary in El Salvador, which of course, we do not expect, it would not prevent Digicel from achieving a return on assets sufficient to sustain the investment necessary to supply the national mobile voice call service.
85. Fourth, the industry trend toward increasing data traffic at a much higher growth rate than voice traffic will likely continue. This implies that an increasingly higher proportion of Digicel’s future investment will likely go towards upgrading the network to carry primarily data traffic (4G/LTE) while investment for carrying voice traffic will proportionally diminish. Therefore, compared to past years, over the period of the proposed determination, the capital investment necessary to supply mobile voice call service will diminish as a proportion of the total capital investment of Digicel.

<sup>14</sup> CommsUpdate. “Digicel to invest USD 450m in El Salvador 4G rollout.” 15 Feb. 2017. <https://www.commsupdate.com/articles/2017/02/15/digicel-to-invest-usd450m-in-el-salvador-4g-rollout/>

86. Due to the reasons provided above, NICTA is confident that the proposed determination will allow Digicel to achieve a return on assets enough to sustain the investment necessary to supply the national prepaid and postpaid mobile voice call services during the term of the proposed determination.

### **5.3 The proposed determination meets the criterion in Section 158 (d) of the Act**

87. The proposed determination meets the retail regulation criterion in Section 158(d) of the Act. In particular:

*“(d) the aggregate likely benefits of making that retail service determination outweigh any aggregate likely detriments.”*

### **5.4 The aggregate likely benefits of making the retail service determination outweighs any aggregate likely detriments in accordance with Section 158(d) of the Act**

#### *Likely benefits of the proposed determination*

88. NICTA is convinced that a reduction of the price difference between on-net and off-net calls to a level that can be reasonably justified by differences in costs, as described in the amended proposed retail service determination, will bring about important benefits to consumers in PNG.

#### *First Likely Benefit*

89. First, for a large majority of consumers who are in areas where Digicel's network overlap with that of its competitors, estimated to be 40% to 50% of PNG's population, will gain the freedom of choosing a network based on weighing the multiple benefits and costs associated with a given network, and not based primarily on the size of the network to avoid pricy off-net calls.

#### *Second Likely Benefit*

90. Second, the consumers' added freedom to choose between networks, will likely lead over time, to a reduction of the market concentration in the relevant markets. This reduction on the market concentration, will likely lead to a reduction on prices in the relevant prepaid and postpaid markets, all else equal.
91. The link between reduced market concentration and lower prices is a well-established economic fact in markets such as mobile communications, which exhibit high barriers to entry and expansion. The economic theory behind it, is the so-called Cournot model of oligopolistic competition.<sup>15</sup> This model shows that as the number of firms in the market increases (and the market concentration falls), the price falls towards the competitive level. The reason for the fall on

---

<sup>15</sup> W. Kip Viscusi; John M. Vernon; and Joseph E. Harrington, Jr. *Economics of Regulation and Antitrust*. Third Edition, 2000. Cambridge, MA: The MIT Press. Pages 107-108, 149.

prices is that as more firms enter the market, each individual firm faces a reduced demand, which forces the firms to reduce the markup above cost. Of course, the highest markup above cost is attained when there is only one firm (monopoly).

92. The Cournot model is often used in regulatory and competition cases not only because it makes intuitive sense, but also, because there is substantial empirical evidence that supports it when markets have barriers to entry and expansion, like mobile communications. It is worth quoting the New Zealand Commerce Commission regarding their use of the Cournot model of competition to assess the market consequences of a proposed merger of two airlines:

*“The Commission accepts that the Cournot model provides a useful framework in which to analyse the impact of the proposed Alliance ...(...)...An Important implication of this model is it cannot be assumed that the presence of two or more firms in a market would be sufficient to ensure that market outcomes are workably or effectively competitive.”<sup>16</sup>*

93. The general prediction of the Cournot model is that higher prices are found in markets that are more concentrated. As we have shown before in Figure 1, using data on prices of mobile voice/SMS service from the ITU<sup>17</sup> on a sample of countries in the Pacific region where Digicel operates, in countries where market concentration is higher, denoted by a higher HHI, prices tend to be higher.
94. Contrary to what Digicel says, the proposed determination will lead to a lower market concentration and lower prices for consumers. In the absence of the proposed determination, these benefits would not be attained.

### *Third Likely Benefit*

95. Third, increased consumer choice on which network to subscribe will increase competition between mobile operators and will likely induce an increase on aggregate investment on network upgrading and expansion in PNG. This will benefit consumers as new and improved services will become available. In addition, increased investment by Digicel’s rivals, implies that consumers in geographic areas where there is currently no other choice aside from Digicel, will suddenly have the opportunity to choose a competing network. As shown in Annex D, Digicel’s competitors offer lower prices (on-net and off-net) than Digicel, all of which will benefit consumers in remote locations.

### *Fourth Likely Benefit*

96. Fourth, due to a lower price differential, additional benefits will accrue to a large number of consumers in the form of cost savings, as they will not need to buy a second or third SIM card from different mobile operators to avoid off-net calls.

---

<sup>16</sup> New Zealand Commerce Commission. Final Determination on merger of Air New Zealand Limited and Qantas Airways Limited. 23 October 2003 (page 118).

<sup>17</sup> International Telecommunications Union, ICT Price Baskets (IPB) for 2021. Price is for low consumption basket of 70 minutes and 20 SMS. Price is in USD. <https://www.itu.int/en/ITU-D/Statistics/Dashboards/Pages/IPB.aspx>

Those consumers will also avoid the hassle of changing SIM cards in their phones, or the hassle of replacing lost or misplaced SIM cards, all of which is time consuming. Further cost savings will accrue to consumers that feel compelled to buy two handsets (one for each network), or more expensive phones with multiple SIM cards, to avoid pricy off-net calls.

#### *Fifth Likely Benefit*

97. Fifth, given that a lower market concentration leads to a reduction on prices not only for voice services, but also for bundled services, consumers will respond by increasing their consumption of various types of mobile voice and bundled services, an additional benefit to all consumers.

#### *Sixth Likely Benefit*

98. Sixth, given that the increased usage of mobile communications has a spill-over effect on the broader economy, it is likely that this will produce an increase on Gross Domestic Product (GDP), holding all else constant.<sup>18</sup> Moreover, there is a positive correlation between increased GDP and government tax revenue, therefore, it is likely that the increase in GDP will cause an increase in government tax revenue, benefiting the national government.
99. An important consideration regarding the likely benefits mentioned above is that some of these benefits will require some time to materialize. While benefits in areas where the coverage of mobile networks overlap will accrue immediately. Benefits in areas covered by Digicel's network only, or not covered at all, will take longer to materialize. Because of existing barriers to expansion, investment on network rollout takes time. In those areas, palpable changes on consumer choice due to increased competition will progressively materialize towards the end of the term of the proposed determination, and even after it.

#### *Likely detriments of the proposed determination*

100. On aggregate there seems to be few likely detriments that are far from outweighing the aggregate likely benefits described above. As indicated earlier, Section 158 (d) of the Act requires NICTA to focus on likely aggregate detriments (or benefits). Importantly, the few likely/possible detriments, are unlikely to materialize at all. Even in the unlikely event that they do, they would occur in the immediate term only, but then dissipate towards the end of the term of the proposed determination.

#### *First Likely/Possible Detriment*

101. The first likely/possible detriment depends on the short-term response from Digicel, especially with regards to its pricing strategy, so in that sense it could or

---

<sup>18</sup> See for example, Christine Zhen-Wei Qiang and Carlo M. Rossotto. 2009. "Economic Impacts of Broadband". In *Information and Communications for Development 2009: Extending Reach and Increasing Impact*, pages 35-50. Washington DC, World Bank.

could not be a detriment. On the one hand, it is possible that, as a result of the proposed determination, Digicel, as it suggested in its submission, may decide to increase slightly its price of on-net calls to counteract the effect of a reduced price of off-net calls. However, this is unlikely to last as the effect of increased competition arising from the proposed determination, will force prices down in the short-term (holding all else equal). Incidentally, it is worth mentioning that a 6-month review after a similar regulation was imposed on the dominant operator in Colombia, showed that the dominant operator did not raise its on-net prices.<sup>19</sup> If something similar occurs in PNG, which we expect it will, then there would be no detriment.

### *Second Likely/Possible Detriment*

102. The second likely/possible detriment also depends on the short-term response from Digicel; especially with regard to its pricing strategy in those areas where it does not face competition. It is possible that Digicel may decide to reduce the subsidy to its simple (2G) voice handsets in those areas, as it stated in its comments in this inquiry, effectively increasing the cost to new customers, but not to current customers as they were already subsidized. This again, may not materialize. However, if it does, it will not last long, as increased competition due to the proposed determination, will spur aggregate investment of rival networks, expanding gradually their coverage areas in remote locations. Again, this likely/possible detriment will dissipate in the medium term, and would affect a much smaller number of consumers (new subscribers to Digicel in remote locations) than those benefiting from the likely positive effect of the proposed determination.

### *Weighing the likely benefits against likely detriments*

103. In weighing the likely benefits and likely detriments, NICTA has considered how numerous the customers or potential customers of the services affected would be. Thus, more weight is placed when more customers would be affected. We have also weighed more the likely benefits or detriments that last longer as opposed to those that have only short-term effects. Based on these considerations, we developed the table below that qualifies each benefit and detriment identified, according to the two criteria mentioned. The table makes it clear that the likely benefits largely outweigh the likely detriments.

---

<sup>19</sup> In 2009, the Colombian regulator for telecommunications, CRC, imposed a cap on the maximum difference between the price of off-net and on-net calls of Comcel, the dominant operator in Colombia. The cap was set to the level of the mobile termination rates. The CRC undertook a 6-month review after the regulation became effective and found that Comcel lowered the price of off-net calls but did not rise the price of on-net calls. See CRC, "Diagnóstico del Mercado Voz Saliente Móvil" Regulación de Mercados, Agosto 2010. Page 33. [https://cocom.gov.co/system/files/Biblioteca%20Virtual/Diagnóstico%20del%20mercado%20voz%20saliente%20móvil"/86-documento diagnostico mercado voz saliente movil.pdf](https://cocom.gov.co/system/files/Biblioteca%20Virtual/Diagnóstico%20del%20mercado%20voz%20saliente%20móvil)

**Table 2. Weighing the likely benefits and detriments**

	No. of consumers or potential consumers affected	Duration of benefit or detriment
Likely benefits		
First likely benefit	Large	Long duration
Second likely benefit	Large	Long duration
Third likely benefit	Large	Long duration
Fourth likely benefit	Large	Long duration
Fifth likely benefit	Large	Long duration
Sixth likely benefit	Effect on government and general population	Long duration
Likely/possible detriments		
First likely/possible detriment	Large (uncertain; would depend on Digicel's response)	Short duration
Second likely/possible detriment	Medium (uncertain; would depend on Digicel's response)	Short duration

## 6. CONCLUSION

104. NICTA considers that regulatory intervention is necessary to address the anti-competitive effects of Digicel's large price difference between off-net and on-net calls. The retail service determination is the only practicable regulatory option in the circumstances. For the reasons summarised in this Report, and having considered all information and comments of interested parties, NICTA is satisfied that all of the retail regulation criteria would be met by the Minister's making of the proposed retail service determination provided in Annex A.

## ANNEX A. RETAIL SERVICE DETERMINATION

### RETAIL SERVICE DETERMINATION No. 1 of 2024

#### ***National Information and Communications Technology Act 2009***

I, **Timothy Masiu**, Minister for Information and Communication Technology, acting on the recommendation of the National Information and Communications Technology Authority and having had regard to the Retail Regulation Criteria, make the following Retail Service Determination under section 160 of the *National Information and Communications Technology Act 2009*.

---

### PART I – PRELIMINARY

#### **1 Name of the Determination**

This Determination may be cited as *Retail Service Determination No.1 of 2024*.

#### **2 Commencement and expiry**

- (1) This Determination shall come into effect 30 days after the date of publication of this notice on the National Gazette (***the Commencement Date***).
- (2) This Determination shall expire on the day before the third anniversary of the Commencement Date.
- (3) NICTA shall initiate a review of the Determination after 24 months from the commencement date to vary, revoke or renew this Determination.

#### **3 Definitions**

- (1) Subject to subsection (2), unless the context otherwise requires, terms used in this Determination have the same meaning as in the Act.
- (2) In this Determination, unless the context otherwise requires:
  - (a) **“Act”** means the *National Information and Communications Technology Act 2009*;
  - (b) **“Digicel”** means Digicel (PNG) Limited with company registration number 1-55909;
  - (c) **“Multiple-service bundle”** means any combination of voice calls, whether On-net Calls or Off-net Calls, and/or SMS and/or data services that is sold by Digicel for a pre-determined price regardless of usage up to certain pre-determined usage limits.

- (d) **“Single-service Voice bundle”** means any combination of voice calls, whether On-net Calls or Off-net Calls, that is sold by Digicel for a pre-determined price regardless of usage up to certain pre-determined usage limits.
- (e) **“MTAS”** means domestic mobile terminating access service.
- (f) **“on-net call”** means a national voice call or SMS that originates and terminates on Digicel’s mobile network;
- (g) **“off-net call”** means a national voice call or SMS that originates on Digicel’s mobile network and terminates on the mobile network of another licensee;
- (h) **“prepaid”** means payment of an amount before a service is used;
- (i) **“post-paid”** means being charged in such manner that payment is made after a service is used, normally by means of a monthly bill;
- (j) **“promotional offer”** means any special tariff offer of limited duration that is made by Digicel;
- (k) **“regulated mobile service”** means:
  - (i) a prepaid mobile originated retail national voice call service; and
  - (ii) a post-paid mobile originated retail national voice call service;
- (l) **“SMS”** means short message service;

NOTE: The following terms are defined in the Act:

- retail regulation criteria,
- network,
- NICTA, and
- retail service

#### **4 Application**

- (1) This Determination applies to Digicel’s supply of regulated mobile services whether supplied as voice only service or bundled with other services, including but not limited to, SMS, and data services.
- (2) The Determination applies to Digicel’s peak and off-peak services of its regulated mobile services.
- (3) The Determination applies to Digicel’s promotional offers of its regulated mobile services.

## PART II – PRICING PRINCIPLES

### 5 Limit on price discrimination between on-net and off-net calls and SMS

- (1) For Regulated Services, Digicel shall not price discriminate between its On-net and Off-net services.
- (2) Notwithstanding section 5(1) of this Rule, any price difference between Digicel's on-net and off-net shall be less than or equal to the wholesale termination rates that are set either by NICTA, or in its absence any commercially agreed to rate, after deduction of costs that would otherwise be incurred by Digicel in terminating calls or messages (SMS) on its own network.
- (3) These shall apply to;
  - (a) both regular (standard) and bundled offers, and
  - (b) both pre-paid and post-paid services
- (4) NICTA shall determine Digicel's compliance with the pricing principle in subsection 5(2) by using the following formula for voice services that are offered as a regular (i.e. standard) voice service:

$(Price\ off - net) - (Price\ on - net)$   
 $\leq MTAS\ charge\ less\ the\ reasonably\ assessed\ costs\ for\ termination\ that\ Digicel\ would$   
*otherwise incur if the services were terminated on its own network*

for calls made to other mobile networks, or,

$(Price\ off - net) - (Price\ on - net)$   
 $\leq FTAS\ charge\ less\ the\ reasonably\ assessed\ costs\ for\ termination\ that\ Digicel\ would$   
*otherwise incur if the services were terminated on its own network,*

for calls made to other fixed networks.

where:

- (a) **MTAS (or FTAS) Charge** is the effective wholesale termination rate charged to Digicel by other mobile (or fixed) network operators for carrying Digicel's traffic and terminating it on their network,
  - (b) each Regulated Mobile Service is considered separately.
- (5) For any bundled offerings, whether it is individual or multiple service bundles, Digicel shall charge, and offer the services that reflects the pricing principles set in this determination, including the pricing Principle of section 5(4).

## PART III – IMPLEMENTATION

### 6 Compliance data reporting

- (1) Within 7 calendar days of the end of each calendar quarter, Digicel shall provide NICTA with the following information, for both prepaid and post-paid services:
  - (a) the number of On-Net call minutes and SMS for which a charge could have been imposed on a retail customer, whether or not such a charge was actually imposed;
  - (b) the number of Off-Net call minutes and SMS for which a charge could have been imposed on a retail customer, whether or not such a charge was actually imposed;
  - (c) the number of data (gigabytes) for which a charge could have been imposed on a retail customer, whether or not such a charge was actually imposed;
  - (d) the amount of retail revenue earned from the supply of On-Net calls and SMS separately; and
  - (e) the amount of retail revenue earned from the supply of Off-Net calls and SMS separately
  - (f) the amount of retail revenue earned from the supply of data services separately;
  - (g) information on the costs of terminating call minutes and SMS on Digicel's own network during the quarter, together with detailed calculations supporting the unit costs so reported, and
- (2) Within 7 calendar days of the end of each calendar quarter, Digicel shall provide NICTA with the following information, for both prepaid and post-paid services:
  - (a) Regular (or Standard) Price plans for all individual services,
  - (b) Price plans for all single-bundled services and multiple-bundled services including information about the bundled services and composition.
- (3) Digicel shall provide the information specified in subsection 6 (1) and (2):
  - (a) in a manner that disaggregates the data by calendar month;
  - (b) in a manner that disaggregates prepaid services and revenues from post-paid services and revenues;
  - (c) price schedules for regular (standard) and bundle services in both prepaid and post-paid, and
  - (d) in the format specified in Schedule 1.

Made at Port Moresby this \_\_\_\_\_ day of \_\_\_\_\_ 2024.

**Honourable Timothy Masiu, MP**  
**Minister for Information and Communication**  
**Technology**

## SCHEDULE 1: FORMAT FOR COMPLIANCE DATA REPORTS

### 1A. Revenue and Traffic Data

SERVICE		NETWORK OPERATOR		MONTH	
				<b>Total Minutes</b>	<b>Total service revenue</b>
On-net call minutes	Prepaid	Digicel - Digicel			
	Post-paid	Digicel - Digicel			
Off-net call minutes	Prepaid	Digicel – Vodafone			
		Digicel – Telkom Mobile			
		Digicel - Telkom Fixed Line			
	-paid	Digicel - Vodafone			
		Digicel – Telkom Mobile			
		Digicel – Telkom Fixed			
				<b>Total SMS</b>	<b>Total service revenue</b>
On-net SMS	Prepaid	Digicel - Digicel			
	Post-paid	Digicel - Digicel			
Off-net SMS	Prepaid	Digicel – Vodafone			
		Digicel – Telkom Mobile			
	-paid	Digicel - Vodafone			
		Digicel – Telkom Mobile			
				<b>Total Gigabytes</b>	<b>Total service revenue</b>
Data	Prepaid	Digicel			
	Post-paid	Digicel			

## 1B. Price Data

### i. Regular (standard) Rates

<b>PRE-PAID SERVICES</b>			
<b>STANDARD RATES</b>	<b>SERVICE</b>	<b>PEAK/OFF-PEAK</b>	<b>PRICE</b>
<b>MOBILE VOICE CALL PRICE per MINUTE</b>	On-net	Peak	
		Off-Peak	
	Off-Net Mobile	Peak	
		Off-Peak	
	Off-Net Fixed	Peak	
		Off-Peak	
<b>TEXT MESSAGE PRICE per SMS</b>	On-Net	Peak	
		Off-Peak	
	Off-Net	Peak	
		Off-Peak	
<b>MOBILE INTERNATIONAL VOICE CALLS</b>	Country [names]	Peak	
		Off-Peak	
<b>MOBILE BROADBAND PRICE</b>	Per 1 MB		

<b>POST-PAID SERVICES</b>			
<b>STANDARD RATES</b>	<b>SERVICE</b>	<b>PEAK/OFF-PEAK</b>	<b>PRICE</b>
<b>MOBILE VOICE CALL PRICE per MINUTE</b>	On-net	Peak	
		Off-Peak	
	Off-Net Mobile	Peak	
		Off-Peak	
	Off-Net Fixed	Peak	
		Off-Peak	
<b>TEXT MESSAGE PRICE per SMS</b>	On-Net	Peak	
		Off-Peak	
	Off-Net	Peak	
		Off-Peak	
<b>MOBILE INTERNATIONAL VOICE CALLS</b>	Country [names]	Peak	
		Off-Peak	
<b>MOBILE BROADBAND PRICE</b>	Per 1 MB		

**ii. Single-Bundle and Multiple-Bundle Service Rates**

<b>PREPAID SERVICES</b>			
<b>SERVICE TYPE</b>		<b>DURATION</b>	<b>PRICE (PGK) per MONTH</b>
Single-Bundle Service Plan	Voice	1,3,7,14, 15, or 30 days	All Price plans
Multiple-Bundle Service Plan	Voice	1,3,7,14, 15, or 30 days	All Price plans

<b>POST-PAID</b>			
<b>SERVICE TYPE</b>		<b>DURATION</b>	<b>PRICE (PGK) per MONTH</b>
Single-Bundle Service Plan	Voice	1,3,7,14, 15, or 30 days	All Price plans
Multiple-Bundle Service Plan	Voice	1,3,7,14, 15, or 30 days	All Price plans

**ANNEX B. AN ILLUSTRATION OF HOW A DOMINANT OPERATOR'S OFF-NET/ON-NET PRICE DISCRIMINATION RAISES THE PRICE PAID BY CUSTOMERS OF SMALLER NETWORKS AND HOW THE PROPOSED DETERMINATION WOULD REDUCES PRICES FOR ALL**

1. A simple numerical example can serve to illustrate how a large difference between the price of off-net and on-net mobile calls by an operator with substantial degree of market power, such as Digicel, can be used to cripple the demand for services of the smaller networks.
2. To simplify the example, let us assume that there are two mobile operators only. Let us also assume that there is only one price for on-net calls and one price for off-net calls (i.e., no off-peak or peak pricing). Let us assume that the dominant operator's smaller rival set prices to mimic the dominant's prices. Let's further assume that the dominant operator has 90% market share based on national outgoing minutes.
3. Let's assume the following for the dominant operator:
  - Pon= 0.7 (Kinas per minute),
  - Poff=1.0 (Kinas per minute),
  - Ton = 90% of Td,
  - Toff =10% of Td, and
  - Td=Ton+Toff.Where,
  - Pon: Price per minute of on-net call,
  - Poff: Price per minute of off-net call,
  - Ton: Mobile outgoing national minutes on-net (% of total outgoing national minutes),
  - Toff: Mobile outgoing national minutes off-net (% of total outgoing national minutes),
  - Td: Total mobile outgoing national minutes for dominant operator.
4. The smaller rival observes the dominant operator's prices and mimics them. However, due to its smaller size network, most calls would be off-net. We assume that 90% of outgoing calls are of-net and 10% on-net. The reverse of the dominant operator. Then, for the smaller rival we would have:
  - Pon= 0.7,
  - Poff=1.0,
  - Ton = 10% of To,
  - Toff =90% of To, and
  - To: Total mobile outgoing national minutes for small operator (To=Ton+Toff).

### Average Price of the dominant operator and the smaller network when price differential is unjustifiably large

5. Now we can calculate the average price for a customer of the dominant operator as:

$$P_D = \frac{\text{Revenue}_{\text{on-net calls}} + \text{Revenue}_{\text{off-net calls}}}{\text{Outgoing minutes}_{\text{on-net}} + \text{Outgoing minutes}_{\text{off-net}}}$$

Which is equivalent to:

$$P_D = \frac{P_{\text{on}} \times T_{\text{on}} + P_{\text{off}} \times T_{\text{off}}}{T_{\text{on}} + T_{\text{off}}}$$

Substituting values in the prior equation and simplifying we get:

$$P_D = \frac{0.7 \times 0.9T_d + 1.0 \times 0.1T_d}{T_d} = 0.73 \text{ kinas per minute}$$

6. We can use the same formula to calculate the average price for a customer of the small rival:

$$P_o = \frac{0.7 \times 0.1T_o + 1.0 \times 0.9T_o}{T_o} = 0.97 \text{ kinas per minute}$$

7. From the above calculation we can conclude the following:
- The smaller network ends up with a much higher average price than the dominant's, despite charging the same prices for on-net and off-net calls.
  - The main driver for that result is the large imbalance between on-net and off-net outgoing minutes. For a customer of the smaller network, most calls would be off-net.
  - A smaller network would not be able to compete against the dominant operator by setting similar prices.
8. Now let's see what happens when a limit is set to the maximum difference between the price of off-net and on-net calls equivalent to the MTAS charge. We assume the MTAS charge is 8 Toeas per minute.

### Average Price of the dominant operator and the smaller network when price differential is capped to the MTAS charge

9. We assume the same price for on-net calls as before, however, due to the restriction on the maximum price differential, we assume the price of the

dominant operator's off-net calls falls to 0.78 kinas per minute. We keep the assumption that the small network mimics the price of the dominant. We change the assumption of the outgoing minutes of the dominant operator to 80% (on-net) and 20% (off-net) due to the lower price of off-net calls. That implies a 20% - 80% outgoing minutes of on-net/off-net for the small network.

10. The new value of the average price for a customer of the dominant operator falls to:

$$P_D = \frac{0.7 \times 0.8T_d + 0.78 \times 0.2T_d}{T_d} = 0.716 \text{ kinas per minute}$$

11. While the new value of the average price for a small network's customer falls to:

$$P_o = \frac{0.7 \times 0.2T_o + 0.78 \times 0.8T_o}{T_o} = 0.764 \text{ kinas per minute}$$

12. From the above calculation we can conclude the following:

- a) The average price for a customer of the dominant operator would decline with a limitation on the price differential between off-net and on-net calls.
- b) The average price for a customer of the small network would decline significantly, approaching the dominant operator's price.
- c) The limitation on the price differential would produce a win-win scenario for consumers of both the dominant operator and the smaller network as both prices would decline.

## **ANNEX C. RELEVANT MARKET DEFINITION**

### **Introduction: The prepaid and postpaid national retail mobile voice services**

1. As stated in NICTA's Second Discussion Paper and the accompanying draft Retail Services Determination, the proposed determination seeks to regulate two of Digicel's retail services: (a) the prepaid national mobile voice service, and (b) the postpaid national mobile voice service.
2. Prepaid retail mobile services are sold typically in bundles. Bundles are sold as a single-service bundle or bundled with other services. Single-service mobile bundles refer to voice only service, Short Messaging Services (SMS) only, or data (i.e., Internet) only service. Operators provide a menu of options for consumers to pick different quantities of minutes, or SMS, or Gigabytes of data. Bundles have a term (time until expiration) and maximum quantities to be consumed. Consumption outside the bundle is charged at the standard rates, which are higher than the unit price charged for consumption within a bundle.
3. Multiple-service bundles typically combine voice, SMS, data services. Bundles come with various combinations of minutes, SMS and Gigabytes with different prices and terms (1 day, 7 days, and 30 days). Again, bundles have a term and maximum quantities to be consumed. Consumption outside the bundle is charged at the standard rates, which are higher than the unit price charged for consumption within a bundle.
4. The national prepaid retail mobile voice service is typically purchased as either a single-service bundle (i.e., voice-only bundle),<sup>20</sup> or bundled together with SMS and data.
5. The national post-paid retail mobile voice service is sold typically bundled with SMS and (mobile) data (Internet) service. The majority of users of the postpaid service are medium/large businesses and organizations including government, and the bundle of services can be customized to the clients' needs with various options of add-on services.

### **Market Definition**

6. To define the relevant markets, NICTA followed the widely accepted methodology known as the Hypothetical Monopolist Test (HMT), also known as the SSNIP test, after its acronym that stands for small but significant non-transitory increase on price.<sup>21</sup>

---

<sup>20</sup> In general, the voice only service also includes emergency call number, voicemail, and customer services.

<sup>21</sup> See for example, European Commission. Commission guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic communications networks and services. (2002)C 165|03. Official Journal of the European Commission. 11.7.2002. Paragraphs 40-43. OECD, Defining the Relevant Market in Telecommunications (2014), pages 10-11. U.S. Department of Justice and the Federal Trade Commission. Horizontal Merger Guidelines. Revised, April 8, 1997, pages 4-7.

7. The methodology is based on the notion that a relevant market for a good or service includes all services that are considered to be close substitutes. The focus of the delineation of relevant markets is therefore based on those services that are possible close substitutes from the point of view of the consumer (i.e., demand-side substitution), and those suppliers who produce, or could quickly produce, those services (i.e., supply-side substitution).
8. To implement this methodology, NICTA starts with a focal service or group of services and assess the demand-side substitution with alternative services outside the group that could be perceived by consumers as substitutes of the focal services. This is done by applying the SSNIP test to the focal group of services and asking whether an hypothetical monopolist supplying the focal services would be able to sustain a small but significant non-transitory increase on price (usually 5% to 10%)<sup>22</sup> over the foreseeable future (usually one year) and remain profitable. If the price increase is such that it will lose sales to make the SSNIP unprofitable, it means that a nontrivial number of consumers would switch to buying the alternative services. Thus, the alternative services and the focal services would be close substitutes, and therefore, must belong to the same relevant market.
9. The group of services is then expanded to include the alternative services, and the thought experiment is repeated until a SSNIP on the group of services becomes profitable. At that point a tentative relevant market containing all the services in the group has been identified.
10. The assessment of demand-side substitution involves doing the assessment without regard for the technology used to supply the services.<sup>23</sup> The focus of the attention is on how consumers use the focal services, and how easy or costly would be for consumers to switch to buying the alternative services. The analysis is performed holding all other factors constant.
11. The next step is to assess supply-side substitution; that is, how quickly suppliers of other services would be able to supply the focal services or a close substitute in response to a SSNIP on the focal services.
12. Once the relevant service market has been defined, one must assess the relevant geographic market. To that end, one must consider the geographic area where the services in the relevant market are demanded and supplied, and assess whether the conditions of competition in a geographic area, are sufficiently similar relative to those in contiguous geographic areas.<sup>24</sup> In practice, regulatory authorities have often defined the relevant geographic market based on the area covered by a network or the area covered by an operator's license.<sup>25</sup>

---

<sup>22</sup> *Id.*, paragraph 40.

<sup>23</sup> *Id.*, paragraph 45.

<sup>24</sup> *Id.* Paragraphs 55-56.

<sup>25</sup> *Id.*, paragraph 59.

## Relevant Markets – Prepaid Services

1. NICTA used the foregoing methodology to define the relevant market or markets within which the prepaid national mobile voice service is supplied. As mentioned before, the national mobile voice service is typically purchased as either a voice only service (single-service bundle), or as a multiple-service bundle together with SMS, and data service. Importantly, a non-trivial proportion of consumers use simple button phones (also called one-bang) for their voice service needs. Moreover, NICTA estimates that between 70% and 80% of PNG’s population is covered only with 2G mobile technology, permitting just voice and SMS services. This has important implications for the definition of market(s) as we explain below.
2. First, NICTA used the prepaid voice only service as the focal service to analyse demand-side substitution with alternative services. As indicated in the Second Discussion Paper, one of the alternative services considered was fixed voice service.<sup>26</sup> However, the inclusion of the fixed voice service in the same market as the mobile service was rejected because not enough customers would switch from a mobile service to a fixed service after a SSNIP on the mobile service.
3. Another alternative tested was the prepaid mobile bundled services, which includes voice, SMS, and data. NICTA considers the buyers of the voice only service to have typically a lower budget than buyers of the bundled services. A nontrivial proportion of the buyers of the voice only service access that service using low-cost simple button phones (2G/3G phones). In a recent survey conducted by NICTA among 309 phone users in Port Moresby and Mt. Hagen, we found that 45% still use the simple button phones (2G/3G). See Table below.

**Table 3. Smartphone users v. simple 2G/3G phone users**

	No. users	% users
No. smartphone users	170	55%
No. of simple (2G/3G) phone users	139	45%
Total	309	100%

*Source: NICTA’s 2022 survey in Port Moresby and Mt. Hagen.*

4. Users of the voice only service typically live in rural or remote areas, have a lower budget or lower income, are generally older, and do not value as much having mobile Internet access. In NICTA’s assessment a SSNIP on the voice only service by an hypothetical monopolist would likely be maintained over a period of time, as not enough consumers of the voice only service would switch to buying the bundled services. There are three main reasons for this. First, not enough consumers of the voice only service value mobile Internet service as much as the consumers of the bundled services. Second, switching to buying the bundled services would likely require an increase in expenses due to the bundle

---

<sup>26</sup> Second Discussion Paper, Section 4.2.

containing additional services and access to applications. Third, to take advantage of those additional services and applications, a voice only consumer would need to upgrade his or her phone to a 4G enabled smartphone, which is costly. For those reasons, NICTA's view is that the voice only service is a relevant service market separate from the bundled services which include SMS and data.

5. NICTA notes that over the past few years, increasingly consumers have opted to purchase the bundled services instead of the voice only service. However, this trend does not negate NICTA's view that, holding all else constant, a SSNIP on the voice only service would not prompt enough consumers to switch to buying the bundled services. Buyers of the voice only service have a much lower willingness to pay for the bundled services than buyers of those services. They would find costly to switch to mobile over-the-top (OTT) applications as a substitute, because they would need to upgrade to a more expensive smartphone and a more costly bundle.<sup>27</sup> Moreover, their family and friends with whom they often call would need also a more expensive 4G phone, which makes OTT applications not a close substitute for the voice only service customer.
6. Assessing supply-side substitution doesn't change our view of the relevant market as the existing mobile network operators would be the only suppliers able to supply the voice only service or the bundled services. Other licensed operators do not have the required radio spectrum assignments nor the network to rapidly switch to supply those service. Therefore, the relevant service market shall be the market for mobile prepaid national voice only service.
7. NICTA considers the geographic market to be the national territory, which is the same geographic area covered by each mobile operator's license. Moreover, the national territory is also the geographic area covered by each operator's radio spectrum assignments which are used to supply the voice only service and the bundled services.

#### *A second relevant market - prepaid*

8. While NICTA is satisfied with its view that the voice only service is a market on itself, NICTA considers that the bundled services comprising prepaid mobile voice, SMS and data service shall be considered a second relevant market for the following reasons. As mentioned before, consumers are increasingly purchasing the bundled services, rather than the voice only service. This has led to a noticeable segmentation between the consumers of the voice only service and those of the bundled services.
9. In addition to voice and SMS, consumers of the bundled services use the mobile data services to access the Internet, e-mail, OTT applications and social media. These consumers value data services to a much higher degree than the consumers of the voice only service, holding all other factors constant.

---

<sup>27</sup> Bundled services may provide a lower per minute price than voice only (single-service bundle) service. However, because the bundled services come with other services in addition to voice, the total expenditure of buying bundled services would be higher than buying the voice only service.

10. NICTA used again, the hypothetical monopolist test to assess the degree of demand-side substitution between the bundled services and the voice only service. The focal service is the bundled services, and the alternative is the voice only service. In NICTA's view, an hypothetical monopolist would be able to maintain a SSNIP on the bundled services in the near term without prompting a significant number of consumers to switch to the voice only service. As mentioned before, consumers of the bundled services value having access to all the services in the bundle, plus access to the applications that come with access to the Internet. If they were to consider switching to the voice only service, they would need to purchase each component of the bundle separately, which will be more costly for them.
11. An analysis of the supply-side substitution between the bundled services and the voice only service does not alter our findings for the same reasons explained earlier. The bundled services constitute a separate relevant market.
12. Similar to our earlier analysis of the geographic market, and for the same reasons, NICTA is of the view that the relevant geographic market shall be the national territory of Papua New Guinea.
13. Therefore, a second relevant market has been identified where the prepaid mobile national voice service is supplied. It consists of the prepaid mobile bundled services which includes national mobile voice service, SMS, and data service.

#### **Relevant Market – Postpaid Services**

14. Digicel's postpaid mobile voice service is typically supplied bundled with SMS, and data service. The consumers are primarily medium/large businesses and organizations, including government. Depending on each customer's needs, the mobile bundle can also be supplied together with other customized business solutions. This sets the postpaid mobile voice service apart from the prepaid mass market voice service just analysed.
15. A postpaid voice only service is practically not used by customers because they generally value access to mobile SMS and data services. Hence, NICTA used the postpaid mobile bundled services (voice, SMS, and data) as the focal service for the purpose of defining the relevant market.
16. As possible alternative services, one could say that a bundle of fixed voice and fixed (wireless or wired) Internet could provide services not too different from the services in the mobile bundle. However, the lack of mobile functionality in the fixed voice or fixed wireless Internet services, makes them poor substitutes for the mobile bundled services. In NICTA's view, an hypothetical monopolist supplying the postpaid mobile bundled services would be able to maintain a SSNIP on the bundle without prompting its customers to switch to the alternative. NICTA's view is that the postpaid mobile bundled services is a relevant market on its own, and that there are no other relevant markets within which the postpaid voice service is supplied.
17. An analysis of the supply-side substitution between the bundled services and alternative services does not alter our findings. The postpaid mobile bundled services constitute a relevant market.

18. Again, NICTA considers the geographic market to be the national territory, which is the same geographic area covered by each mobile operator's license. Likewise, it is also the geographic area covered by each operator's radio spectrum assignments.

## ANNEX D. DIGICEL'S SUBSTANTIAL MARKET POWER ANALYSIS

1. Section 158(b)(i) of the Act requires that an operator subject to a retail service determination shall have *“a substantial degree of power in the market within which the retail service is supplied.”* The Act does not define what is meant by *“a substantial degree of power”*. Therefore, NICTA has used the meaning often used in competition law guidelines, legislation, regulations, and case-law. For example, Article 14 of the framework directive for electronics communications networks and services of the European Union states that:

*“An undertaking shall be deemed to have significant market power if, either individually or jointly with others, it enjoys a position equivalent to dominance, that is to say a position of economic strength affording it the power to behave to an appreciable extent independently of competitors, customers and ultimately consumers.”<sup>28</sup>*

2. Assessing whether an operator has significant market power, or a substantial degree of market power as it's referred to in the Act, is not as straightforward as it may seem. Significant market power is often associated with the ability to raise prices above the competitive level without losing a significant number of customers. It is also associated with the ability to exclude rivals by owning an essential facility or resource.
3. Conceptually, those seem to be sound criteria to determine whether an operator has significant market power. However, in practice, it is not easy to quantify the markup above the competitive price, or to ascertain whether a facility or resource is essential. Instead, what is done in practice, is to use a number of criteria that taken together would indicate a firm has significant market power. It is common to start by calculating the market share of the operator concerned, but a high market share is not by itself equivalent to having significant market power. For example, the European Commission guidelines state that, *“the existence of large market shares simply means that the operator concerned might be in a dominant position.”<sup>29</sup>*
4. The Commission goes on to provide a list that could be used to infer the existence of significant market power:

*“the following criteria can also be used to measure the power of an undertaking to behave to an appreciable extent independently of its competitors, customers and consumers. These criteria include amongst others:*

- *overall size of the undertaking,*
- *control of infrastructure not easily duplicated,*
- *technological advantage or superiority,*

---

<sup>28</sup> DIRECTIVE 2002/21/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL (7 March 2002), on a common regulatory framework for electronic communications networks and services (Framework Directive). As amended by Directive 2009/140/EC and Regulation 544/2009. Article 14.

<sup>29</sup> European Commission. Commission guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic communications networks and services. (2002)C 165[03]. Official Journal of the European Commission. 11.7.2002. Paragraph 78.

- *absence of or low countervailing buyer power,*
- *easy or privileged access to capital markets/financial resources,*
- *product/services diversification (e.g. bundled products or services),*
- *economies of scale,*
- *economies of scope,*
- *vertical integration,*
- *a highly developed distribution and sales network,*
- *absence of potential competitors,*
- *barriers to expansion.*

*A dominant position can derive from a combination of the above criteria, which taken separately may not necessarily be determinative.”<sup>30</sup>*

5. A careful analysis of the markets within which the prepaid and postpaid mobile national voice services are supplied, has led NICTA to conclude that Digicel alone has a substantial degree of market power in the following relevant markets:
  - Prepaid national mobile voice only service,
  - Prepaid mobile bundled services, which include national mobile voice service, SMS, and data service, and
  - Postpaid mobile bundled services, which include national mobile voice service, SMS, and data service.
6. The reasons for NICTA’s conclusion are several, which taken individually, may not be determinative but, when taken as a whole, provides conclusive evidence of Digicel’s substantial degree of market power. Below we explain these reasons.

**Digicel has a very high market share exceeding common thresholds used to presume the existence of a substantial degree of market power**

7. The latest available data indicates that Digicel’s market share based on revenue of prepaid national mobile voice service stand at approximately 95.1%. Once revenue from SMS and data services are added, Digicel’s market share is calculated at 92%. See Table 4. However, given Digicel long-term stable market share in the mobile markets,<sup>31</sup> it is safe to presume that its current market share is within a reasonable margin of error from those numbers notwithstanding the entry of Digitec Communications (trading as Vodafone) in April of 2022.

---

<sup>30</sup> *Id.* Paragraphs 78-79.

<sup>31</sup> For example, Digicel market share on the national (prepaid and postpaid) mobile voice market by revenue was estimated to be above 95% in 2016. It is important to cite what NICTA observed at the time: “Digicel’s market shares have remained very high over the last five years despite renewed efforts by bmobile and Telikom to improve their competitiveness.” See “Public Inquiry into a potential Retail Service Determination regarding certain mobile telephony services supplied by Digicel. Discussion Paper.” 20th November 2017, paragraph 3.2.7 and Figure 4.

**Table 4. Market share by revenue - Prepaid mobile services<sup>32</sup>**

<b>Market Share by Revenue - National Prepaid Mobile Voice</b>			
	<b>2018</b>	<b>2019</b>	<b>2022</b>
Digicel	93.2%	92.1%	95.1%
Digitec-Vodafone	n.a.	n.a.	0.2%
Telikom-Bmobile	n.a.	n.a.	4.7%
Bmobile	6.0%	7.4%	n.a.
Telikom	0.8%	0.4%	n.a.
<b>Market Share by Revenue - National Prepaid Mobile Voice/SMS</b>			
	<b>2018</b>	<b>2019</b>	<b>2022</b>
Digicel	93.9%	92.5%	95.6%
Digitec-Vodafone	n.a.	n.a.	0.2%
Telikom-Bmobile	n.a.	n.a.	4.2%
Bmobile	5.4%	7.1%	n.a.
Telikom	0.7%	0.4%	n.a.
<b>Market Share by Revenue - National Prepaid Mobile Voice/SMS and data service</b>			
	<b>2018</b>	<b>2019</b>	<b>2022</b>
Digicel	95.8%	93.7%	92%
Digitec-Vodafone	n.a.	n.a.	2%
Telikom-Bmobile	n.a.	n.a.	6%
Bmobile	3.2%	5.6%	n.a.
Telikom	1.0%	0.7%	n.a.

*Source: NICTA, based on data provided by each operator.*

8. Prepaid voice revenue data provided by the mobile operators was not disaggregated between the voice only service and the voice portion of the

---

<sup>32</sup> Telikom figures are estimated.

bundled services. Nevertheless, any reasonable allocation of revenue between the voice only service and the bundled services<sup>33</sup> for Digicel and Bmobile/Telikom would end with an estimated market share of Digicel similar to the values in Table 4.

9. Similarly, the latest available data of revenue from postpaid mobile national voice, SMS and data services, indicate that Digicel's market share is very high. Considering revenue from postpaid national voice service, SMS and data services, as revenue from the relevant postpaid market, Digicel's market share is 95.2%. See Table 5.

**Table 5. Market share by revenue for postpaid mobile voice/SMS and data services**

	2018	2019	2022
Digicel	97.0%	95.1%	95.2%
Digitec-Vodafone	n.a.	n.a.	2.8%
Telikom-Bmobile	n.a.	n.a.	2.0%
Bmobile	2.4%	2.5%	n.a.
Telikom	0.6%	2.4%	n.a.

Source: NICTA, based on data provided by each operator.

10. Digicel market share estimates for the two prepaid relevant markets and the postpaid market largely exceed common thresholds for the presumption of significant market power in electronic communications markets.
11. For example, in the Republic of Vanuatu the Telecommunications and Radiocommunications Regulation Act No. 30 of 2009 establishes a 40% market share threshold for designating an operator dominant without requiring additional evidence of significant market power.<sup>34</sup> Similarly, Section 26(1) of the Telecommunications Act 2005 in Samoa states that:
 

*“Every service provider whose gross revenue in a specific telecommunications market constitutes forty per cent (40%) or more of the total gross revenue of all service providers in that market, shall be designated a dominant service provider in that market, unless and until the Regulator specifies otherwise in an order.”*
12. The European Commission guidelines on electronic communications considers market shares in excess of 50%, as “very large”, and evidence of a substantial degree of market power (dominance) except in rare cases:

---

<sup>33</sup> One approach for apportioning revenue would be based on the network coverage by mobile technology: 2G, 3G and 4G, and use that in conjunction with reasonable assumptions about apportioning revenue to the voice only service and the portion of voice in the bundled services.

<sup>34</sup> Section 21(1)(a). Republic of Vanuatu. Telecommunications and Radiocommunications Regulation Act No. 30 of 2009.

*“In the Commission’s decision-making practice, single dominance concerns normally arise in the case of undertakings with market shares of over 40%, although the Commission may in some cases have concerns about dominance even with lower market shares, as dominance may occur without the existence of a large market share. According to established case-law, very large market shares --in excess of 50% -- are in themselves, save in exceptional circumstances, evidence of the existence of a dominant position.”<sup>35</sup>*

13. It is important to stress that Digicel’s very high market share has been maintained for many years. This is a strong sign of an entrenched position of economic strength in the relevant markets, even after its main competitor, Bmobile partnered with Vodafone to challenge Digicel in 2014.
14. Bmobile was supposed to benefit from Vodafone’s know how in terms of products, product packaging, and procurement due to Vodafone’s buying power.<sup>36</sup> In addition, Bmobile together with Telikom, the two only competitors of Digicel at the time, undertook an aggressive expansion of their 3G/4G networks.<sup>37</sup> Despite these efforts, Digicel’s market share had barely declined by the end of Bmobile’s partnership with Vodafone in May of 2019. As Table 6 shows, between 2014 and 2019, Digicel’s market share (by number of subscribers) only declined from 93% to 87.3%. This is a clear sign of how entrenched is Digicel’s dominant position in the market. Position that has maintained over at least the past decade and that still has. The fact that Digicel’s market share fell slightly over the period of Bmobile’s partnership with Vodafone, does not negate Digicel’s substantial market power.

**Table 6. Change on Digicel’s market share (by number of subscribers) during Bmobile’s partnership with Vodafone**

	2014	2015	2016	2017	2018	2019
Digicel	93%	93%	89%	89.8%	91.3%	87.3%
Bmobile	3%	5%	8%	8.8%	7.6%	8.1%
Telikom	0.2%	2%	3%	1.5%	1.2%	4.6%

*Note: based on total subscriber numbers (prepaid and postpaid). Sources: For 2014-2016, data is from NICTA, Public Inquiry into potential Retail Service Determination regarding certain mobile telephony services supplied by Digicel. Discussion Paper. 20 November 2017, Figure 4. Data for 2017-2019 is from NICTA based on information provided by operators.*

---

<sup>35</sup> European Commission. Commission guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic communications networks and services. (2002)C 165|03). Official Journal of the European Commission. 11.7.2002. Paragraph 75.

<sup>36</sup> See, “Telikom PNG and bmobile rolling out joint 3G/4G network”. COMMS UPDATE, TeleGeography, 21 August 2014. <https://www.commsupdate.com/articles/2014/08/21/telikom-png-and-bmobile-rolling-out-joint-3g4g-network/>

<sup>37</sup> *Id.*

15. Digitec-Vodafone's entry in the PNG market in April of 2022 will likely cause the market share of its competitors, including Digicel, to decline. However, this does not mean, that Digicel has not a substantial degree of market power. It is worth citing what the European Commission guidelines for electronic communications says about a possible loss of market share:

*"The fact that an undertaking with a significant position on the market is gradually losing market share may well indicate that the market is becoming more competitive, but it does not preclude a finding of significant market power."*<sup>38</sup>

### **The large scale of Digicel's network is a source of economic strength in the prepaid and postpaid relevant markets**

16. The table below shows concluding evidence of the large disparity in the scale of Digicel's mobile network and those of its competitors. Using the number of prepaid subscribers as a proxy for scale or capacity of a network, NICTA found that Digicel's network is more than eight times larger than that of Telikom-Bmobile and more than 3.6 times that of Digitec-Vodafone. Using another indicator such as the percentage of the national population covered by each network, we found that Digicel's network coverage is twice as large as its second closest competitor.<sup>39</sup>
17. The large disparity in the scale of Digicel's mobile network compared to its closest competitor confers Digicel a position of great economic strength in the prepaid and postpaid relevant markets for two reasons. First, given that Digicel's network is by far the largest in the country, it allows Digicel to achieve economies of scale to a much larger degree than its competitors.<sup>40</sup> This translates into a lower cost of service per subscriber for Digicel, which provides an important cost advantage over its smaller competitors, holding all else constant.

---

<sup>38</sup> European Commission. Commission guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic communications networks and services. (2002)C 165|03). Official Journal of the European Commission. 11.7.2002. Paragraph 75.

<sup>39</sup> Data from 2019, the latest data available indicates that Digicel has a network coverage of 88% of the population, while Bmobile has 46% and Telikom 40%.

<sup>40</sup> Economies of scale are present when the costs of supplying a service have a large component of fixed costs. As the scale increases, these fixed costs are spread over a larger number of customers. See for example, William Baumol and Alan Blinder. Economics: Principles and Policy. Tenth Edition. 2006. Thomson South-Western, pp. 138-139.

**Table 7. Number of prepaid mobile subscribers by operator (voice/SMS and data)**

	<b>Dec. 2019</b>	<b>Dec. 2022</b>
Digicel	2,063,097	2,467,869
Digitec-Vodafone	n.a.	690,684
Telikom-Bmobile	n.a.	315,017
Bmobile	196,595	n.a.
Telikom	113,315	n.a.
<b>Total prepaid</b>	<b>2,373,007</b>	<b>3,473,570</b>

*Note. 2019 Value of Bmobile is estimated. Source: NICTA, based on data provided by each operator.*

18. Second, Digicel's large network coverage means that in remote locations, Digicel is the only network available. Therefore, consumers living in those areas, are a captive (monopoly) market for Digicel. This along with Digicel's relative cost advantage arising from its economies of scale, confers Digicel a position of great economic strength in the prepaid and postpaid relevant markets.
19. Digicel's cost advantage due to its large economies of scale, is unlikely to be matched by the new entrant, Digitec-Vodafone, during the term of the proposed determination. The reason is that there are important barriers to expansion for mobile networks. The rollout of an extensive network such as Digicel's, is a massive endeavour that requires billions in capital investment and many years to complete. More on this next.

**Digicel controls infrastructure not easily duplicated which is a source of economic strength in the prepaid and postpaid relevant markets**

20. Digicel's extensive access and backbone network infrastructure is a source of significant economic strength in the prepaid and postpaid relevant markets. It takes a considerable number of years and billions in capital expenses to roll out such a network. Aside from that, it is costly and time consuming to secure land permits and land leases for cell sites, towers, and masts, plus associated rights of way, when necessary. All of these constitute barriers to expansion of an operator's network. Barriers that Telikom/Bmobile and the new entrant, Digitec-Vodafone are facing. The fact that Digicel has overcome those large barriers to expansion to roll out its vast network in PNG is commendable, but at the same time, confers to Digicel a significant source of economic strength relative to its smaller competitors.
21. The fact that there is considerable geographic overlap between Digicel's network and those of its closest competitors in urban areas does not negate the significant source of economic strength that Digicel's extensive network confers to it. This is especially the case in rural and remote locations, where the availability of network infrastructure from other operators is sparse or non-existent. This is

compounded by the fact that in PNG, there is no mandatory sharing of passive network infrastructure, or mandatory national roaming, as in other jurisdictions.

### **Easy or privileged access to capital markets**

22. The acquisition of Digicel by Telstra during 2022 compounded Digicel's ability to access international capital markets compared to the situation before the acquisition. Digicel (PNG) Limited is in effect 100% owned by Telstra Group Limited ("Telstra").<sup>41</sup> Telstra is a large publicly traded company. Its shares trade in the Australian Stock Exchange, and its American Depositary Receipts (ADRs) are tradable in U.S. stock exchanges. Thus, Telstra can raise capital on a global scale. Telstra market capitalization is 31.7 billion US Dollars (47.6 billion AUD).<sup>42</sup> This gives Digicel (PNG) Limited a significant advantage over its smaller competitors, as its parent company can raise long-term debt and equity capital at a much lower cost than its rivals in PNG.
23. For example, Telikom is unable to issue debt or shares in the domestic market, let alone in the international markets. NICTA understands that these companies are only able to access debt financing either indirectly via the government of PNG, or directly with an explicit government guarantee.
24. Meanwhile, Digitec Communications, through its parent company, Amalgamated Telecom Holdings (ATH) from Fiji,<sup>43</sup> could raise capital (debt or equity) at a much smaller scale than Telstra. ATH shares trade in the South Pacific Stock Exchange (SPX) in Fiji. According to the latest information available, ATH's market capitalization is USD 409.6 million.<sup>44</sup> Therefore, Telstra market capitalization, a proxy for the ability to raise capital for long-term financing, is approximately 80 times that of ATH.
25. Telstra's advantaged position is further compounded if we consider the difference in depth between the capital markets in Australia and the South Pacific. Deeper (higher market capitalization) capital markets make it easier for firms to raise capital than shallower markets. The Australian Stock exchange is a much deeper market than the South Pacific Stock Exchange. The total market capitalization of

---

<sup>41</sup> Telstra acquired 100% ownership in Digicel Pacific Limited. Digicel (PNG) Limited is a wholly owned subsidiary of Digicel Pacific Limited, which is now fully owned by Telstra Group Limited. See, Telstra Group Limited – Financial results for the half-year ended 31 December 2022.

<https://www.telstra.com.au/content/dam/tcom/about-us/investors/pdf-Financial%20results%20for%20the%20half%20year%20ended%2031%20Dec%202022.pdf>

<sup>42</sup> Schwab Equity Ratings International Report. Telstra Group Ltd. 17 March 2023.

<https://www.schwab.com/resource/equity-ratings-international>

<sup>43</sup> ATH has 70% ownership in Digitec Communications (PNG) through its wholly owned subsidiary ATH International Venture Pte Limited. ATH 2022 Annual Report, pp. 10.

<http://www.ath.com.fj/images/ath2022annualreport.pdf>

<sup>44</sup> Value as of 31 March 2022 was FJD 856.68 million. South Pacific Stock Exchange. Amalgamated Telecom Holdings Limited (ATH) Financial Analysis for the Years ending 31 March 2018-2021.

<https://www.spx.com.fj/getattachment/Investing/Already-a-Shareholder/Historical-Financial-Analysis/ATH.pdf?lang=en-US> Value converted to USD based on the exchange on 31 March 2022 from the Reserve Bank of Fiji.

the Australian Stock Exchange is approximately USD 1.67 trillion,<sup>45</sup> while that of the South Pacific Stock Exchange is only USD 1.48 billion.<sup>46</sup> A difference of more than *one-thousand times*.

26. Digicel's privileged access to capital markets means that it has yet another source of cost advantage over its competitors, including Digitec-Vodafone, which is that it can finance its long-term capital investments at a much lower cost.

**Digicel position of economic strength affords it the power to behave to an appreciable extent independent of competitors, customers, and consumers in the relevant prepaid and postpaid markets**

27. As mentioned earlier, the Act does not define what a "substantial degree of market power" means. As guidance, NICTA used the definition from the European Union's Directive on a common regulatory framework for electronic communications networks and services:

*"An undertaking shall be deemed to have a significant market power if, either individually or jointly with others, it enjoys a position equivalent to dominance, that is to say a position of economic strength affording it the power to behave to an appreciable extent independently of competitors, customers and ultimately consumers."*<sup>47</sup>

28. Earlier, NICTA had used signs of Digicel's position of economic strength, together with market characteristics, both structural and regulatory, to infer that it has a substantial degree of market power. Now, NICTA will proceed to show further evidence that indicates that Digicel has considerable pricing power, affording it the ability to behave to an appreciable extent independently of competitors and consumers.
29. Much has been said in the news media and in Digicel's own submission, about the entry of Digitec-Vodafone and its possible threat to Digicel's position of substantial market power. Even in Digicel's submission, it implies that such entry is already eroding its significant market power.<sup>48</sup> That purported threat is however, not reflected in Digicel's pricing. If such a threat were real, one would expect Digicel to have lowered its prices in anticipation of Digitec-Vodafone's entry or immediately after it. We found no evidence of that.
30. Figure 4 shows the Standard price per minute of Digicel's on-net and off-net calls, at peak and off-peak times, going back to January of 2018. It also shows two important events related to Digitec-Vodafone's entry in PNG. One is when

---

<sup>45</sup> Statista. Largest stock exchange operators worldwide as of October 2022, by market capitalization of listed companies. <https://www.statista.com/statistics/270126/largest-stock-exchange-operators-by-market-capitalization-of-listed-companies/>

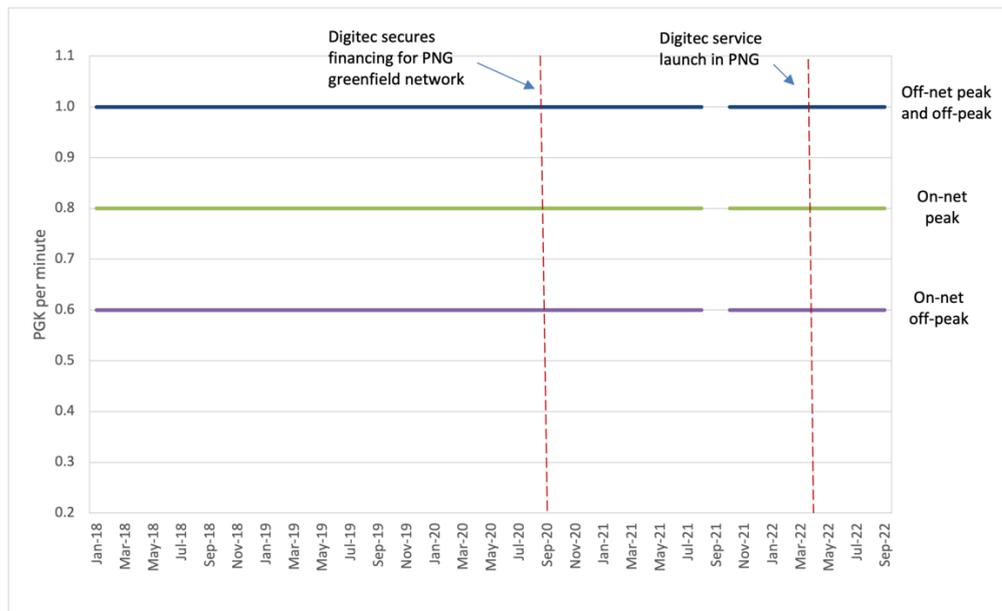
<sup>46</sup> Latest data available is from the South Pacific Stock Exchange Annual Report 2021. Page 9.

<sup>47</sup> DIRECTIVE 2002/21/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL (7 March 2002), on a common regulatory framework for electronic communications networks and services (Framework Directive). As amended by Directive 2009/140/EC and Regulation 544/2009. Article 14.

<sup>48</sup> See for example, paragraphs 43-44. Digicel (PNG) Limited. Submission to NICTA. Discussion Paper: To facilitate public consultation on potential Retail Service Determination in relation to On-net and Offnet Calls, issued on 21 October 2022. 30 November 2022.

Digitec-Vodafone secured financing for its greenfield network in PNG, and the second is the actual launch of service. These two events were widely reported in the industry and news.<sup>49</sup> Nevertheless, we observe no change on Digicel’s on-net or off-net prices; a strong sign of Digicel’s ability to behave to an appreciable extent independent of its competitors or customers.

**Figure 4. Digicel’s Standard price per minute of on-net and off-net calls (Jan. 2018 – Sep. 2022)**



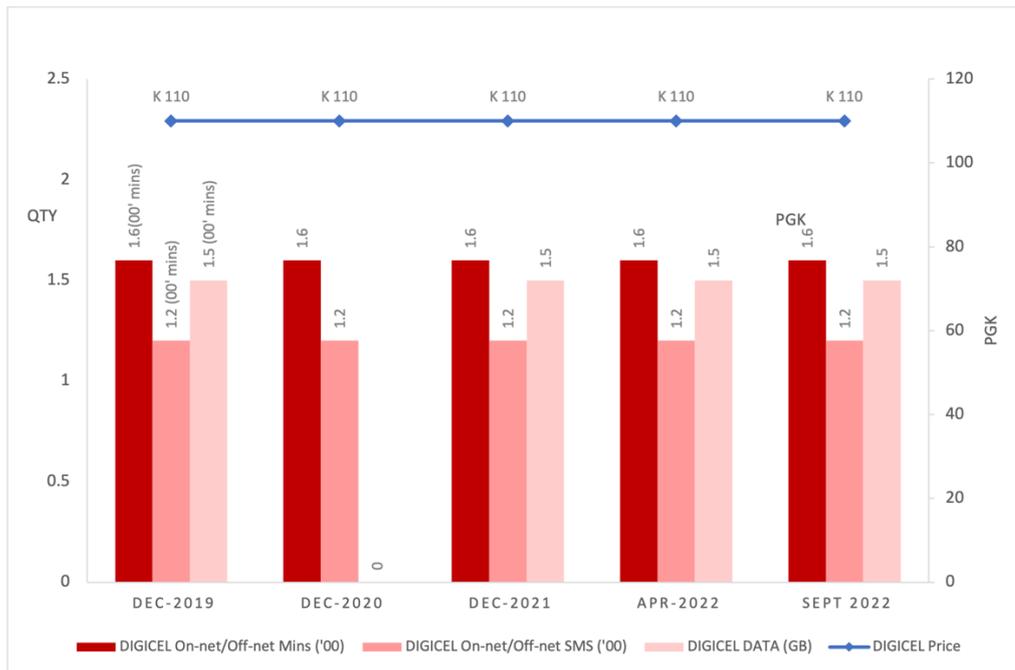
Source: NICTA based on information provided by operators. Prices are standard prices reported by Digicel.

31. Similarly, the prices and quantities of minutes, SMS and Gigabytes, of monthly bundled services prior to, and immediately after the entry of Digitec-Vodafone have no observable reaction or response to the entry of a Digitec-Vodafone. As shown in Figure 5, Digicel has maintained the value of its monthly bundled services at the same rate since December 2019. As an example, Figure 5 shows the price, and quantities of minutes (on-net or off-net), SMS and Gigabytes included in a monthly bundle. As shown the price of K110 has been unchanged. Similarly, the 160 on-net or off-net call minutes remained unchanged, as the 120 on-net or off-net SMS and the 1.5GB of data. Again, it shows Digicel’s ability to behave independently of its competitors or consumers, a clear evidence of substantial market power.

---

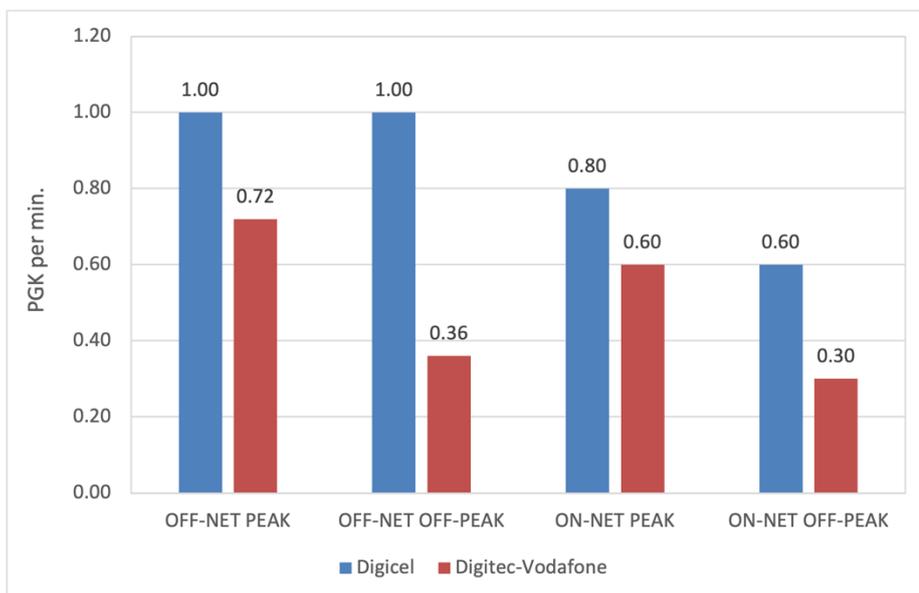
<sup>49</sup> CommsUpdate, “ATH unit Digitec to benefit from USD25m investment for greenfield 4G network.” 7 Sep. 2020. <https://www.commsupdate.com/articles/2020/09/07/ath-unit-digitec-to-benefit-from-usd25m-investment-for-greenfield-4g-network/> See also, CommsUpdate, “Vodafone brand relaunched in PNG as Digitec enters mobile sector”. 7 April 2022. <https://www.commsupdate.com/articles/2022/04/07/vodafone-brand-relaunched-in-png-as-digitec-enters-mobile-sector/>

**Figure 5. Digicel’s price and quantities of minutes, SMS, and GB in a monthly prepaid bundle (Dec. 2019 through Sep. 2022)**



Source: NICTA. Based on information from Digicel.

**Figure 6. Digicel and Digitec-Vodafone Standard prices per minute of on-net and off-net national voice calls**



Source: NICTA based on information provided by operators. Prices are standard rates for September 2022.

32. The ability to behave to an appreciable extent independent of its competitors or customers, is what in economics is referred as the ability to exercise market power. A firm with market power can raise or maintain prices above the

competitive level for a sustained period of time without incurring a significant loss of sales or revenue. As Figure 6 shows, Digicel is able to price national voice call services significantly above Digitec-Vodafone. For example, Digicel's off-net price (off-peak) is 178% higher than Digitec-Vodafone's. Even Digicel's on-net prices are substantially above Digitec-Vodafone's, with off-peak prices being 100% higher and peak prices 33% higher.<sup>50</sup> Yet, another clear sign of Digicel's ability to exercise market power.

33. NICTA also found noticeable price differences on a per minute or per megabyte basis between comparable bundles (voice, SMS and data) offered by Digicel and Digitec-Vodafone. As an illustration, Table 8 shows a sample of comparable prepaid bundles with various terms (1-day, 7-days and 30-days) to illustrate Digicel's ability to price higher than its competitors without fearing a significant loss of sales or revenue.
34. It is important to highlight that price competition between firms can take the form of offering more minutes, or Gigabytes than a rival, while charging the same price for a bundle. For example, a PGK 5 bundle that provides 100 minutes has a lower unit price (price per minute) than another PGK 5 bundle with only 50 minutes. In fact, the price per minute of the first bundle is half of that of the second bundle, holding all else constant.
35. As Table 8 shows, four similarly priced bundles from Digicel and Digitec-Vodafone. The two daily bundles offered by Digitec-Vodafone, provide the customer with considerably more on-net minutes, on-net SMS, and megabytes of data than similarly priced Digicel bundles. As we explained before, this translates into significantly higher unit prices for the bundles offered by Digicel. Similar conclusion can be gleaned from comparing the 7-day bundle from Digitec-Vodafone and Digicel. The unit price of Digicel's bundle is considerably above that of its new competitor, illustrating Digicel's ability to exercise its market power.
36. The 30-day bundle shown in Table 8 for which Digicel's price is slightly higher, offers under certain items more minutes (off-net and international calls) than that of Digitec-Vodafone. However, Digitec-Vodafone's bundle offers substantially more on-net minutes, on-net SMS and data than Digicel's. Weighing the differences between one and the other, in particular the significant difference between what Digitec-Vodafone offers compared to Digicel (1,500 on-net minutes v. 160 minutes of Digicel), and the 50GB of data offered by Digitec-Vodafone compared to only 1.5GB offered by Digicel, it becomes evident that Digicel's unit prices are significantly higher than its competitor. Again, it shows Digicel's ability to exercise its market power by pricing above the competitive level.<sup>51</sup>

---

<sup>50</sup> A similar comparison between Digicel and Bmobile prices indicate that Digicel's price per minute of off-net calls (off-peak) are 14.9% higher than Bmobile's, while the price of on-net calls (off-peak) are 53.8% higher than Bmobile's.

<sup>51</sup> It seems reasonable to assume that Digitec-Vodafone is pricing at or close to the competitive level given that it's a new entrant and is seeking to capture market share from Digicel and Bmobile/Telikom.

**Table 8. Sample of similar-priced bundles from Digicel and Digitec-Vodafone**

	Digitec-Vodafone	Relationship	Digicel
1 Day (PGK)	3	=	3
ON-NET MINS	50	>	10
OFF-NET MINS	0	=	0
ON-NET SMS	250	>	20
OFF-NET SMS	0	=	0
DATA (MB)	600	>	50
1 Day (PGK)	5	=	5
ON-NET MINS	100	>	15
OFF-NET MINS	0	=	0
ON-NET SMS	500	>	25
OFF-NET SMS	0	=	0
DATA (MB)	800	>	125
7 Day (PGK)	15	=	15
ON-NET MINS	200	>	65
OFF-NET MINS	0	=	0
ON-NET SMS	1000	>	65
OFF-NET SMS	0	=	0
DATA (MB)	3000	>	0
30 Day (PGK)	100	≈	110
ON-NET MINS	1500	>	160
OFF-NET MINS	0	<	160
INTERNATIONAL MINUTES	0	<	20
ON-NET SMS	5000	>	120
OFF-NET SMS	0	=	0
DATA (MB)	50000	>	1500

Source: NICTA based on information provided by operators. Prices are for September 2022.

37. In conclusion, taken all these factors together, NICTA is convinced that Digicel alone holds and will continue to hold, for the period of the proposed retail services determination, a substantial degree of market power in the relevant prepaid and postpaid markets.
38. In NICTA's view, the implementation of the proposed determination may cause Digicel to experience a moderate decline on its market share (by revenue) in the relevant markets during the term of the proposed determination. However, this does not negate the finding of Digicel's substantial market power on a forward looking-basis. All it would mean is that competition would have increased to some degree. Needless to say, absent the proposed determination, a decline on Digicel's market share by revenue would be modest, precluding consumers from the benefits of competition and lower prices.