



# **MOBILE NUMBER PORTABILITY INQUIRY & RECOMMENDATIONS REPORT**

July 2025

# **A REPORT TO THE MINISTER OF ICT ON THE POTENTIAL IMPLEMENTATION OF MOBILE NUMBER PORTABILITY (MNP) IN PAPUA NEW GUINEA**

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## EXECUTIVE SUMMARY

This report, issued by the National Information and Communications Technology Authority (NICTA), presents the findings and recommendations of a public inquiry into the feasibility and implementation of Mobile Number Portability (MNP) in Papua New Guinea. Pursuant to Sections 189 and 235 of the National ICT Act 2009, the inquiry evaluates the economic, consumer, and regulatory implications of enabling mobile subscribers to retain their numbers when switching service providers.

The investigation was conducted in two public consultation phases between October 2023 and May 2024. Submissions from major stakeholders, including Digicel, Vodafone, Telikom PNG, and the Independent Consumer and Competition Commission (ICCC), were thoroughly reviewed. Stakeholders generally supported the introduction of MNP, with concerns primarily focused on cost, implementation strategy, and regulatory safeguards.

A comprehensive cost-benefit analysis (CBA) was undertaken by NICTA and Cenerva Limited, focusing on Type 2 benefits—those driven by increased competition and consumer value. The analysis demonstrated that the potential market benefits from MNP could range between USD 80 million and USD 150 million over five years, outweighing the projected total implementation and operational costs of USD 14 million to USD 17 million over the same period. Benchmarking showed that mobile prices in PNG are significantly higher than in comparable markets with MNP, indicating strong potential for competitive gains.

NICTA assessed PNG against international MNP pre-conditions, concluding that the mobile market's scale, competition level, regulatory maturity, and consumer interest sufficiently support the introduction of MNP. Accordingly, NICTA recommends the amendment of the National Numbering Plan and the formulation of formal rules to operationalize MNP in PNG.

### Key implementation recommendations include:

- Establishment of a centralized porting database.
- Recipient-led porting processes with face-to-face validation.
- One-day porting timeframes.
- Consumer protection measures including win-back restrictions.
- Formation of an MNP Coordination Committee to oversee implementation.
- No porting charges to consumers.

Subject to Ministerial approval and subsequent public consultation, NICTA proposes that MNP be launched within 24 months. Fixed number portability (FNP) may be reconsidered at a later stage.

This initiative is expected to enhance consumer choice, lower mobile service costs, and strengthen market competition, contributing to a more efficient and inclusive ICT sector in Papua New Guinea.

## 1. PURPOSE OF THIS REPORT

This report is a final report from NICTA to the Minister of ICT (the Minister) pursuant to Section 235 of the National ICT Act (the Act), being the report of a public inquiry into the costs and benefits of the implementation of mobile number portability (MNP) in Papua New Guinea as required by Section 189 of the same Act. The report includes NICTA's recommendations to the Minister on the implementation of MNP in PNG and takes account of the comments and information received in submissions during a two-stage public inquiry during the period from 20<sup>th</sup> October 2023 to 27<sup>th</sup> May 2024.

The purpose of this report is to enable the Minister to consider NICTA's recommendations and seek submissions from the public on whether he should accept them, pursuant to Section 189(5) of the Act.

For the avoidance of doubt, this report is the **final report** identified in Section 189(4) of the Act, as well as being the public inquiry report required pursuant to Section 235(1) of the Act.

## 2. BACKGROUND

### 2.1. What is Number Portability?

There are different types of number portability. All of them involve retention of service (or calling) number notwithstanding changes in other aspects of service provision.

The three basic types of number portability are:

- **Service provider number portability** – which enables users of telecommunications services to change service provider but retain their service number.
- **Service portability** – which enables a service number issued for one type of service to be used for another type of service, without changing service provider. An example would be where a service number issued for a fixed service could be used for a mobile service.
- **Location portability** – which enables a service number that has been issued for use for a service provided within one location (such as a fixed location service where the number may have a prefix which identifies the local telephone exchange area) to be used in another location.

### 2.2. Scope of Number Portability for the purposes of this Report

In this report NICTA is only concerned with service provider number portability and is primarily concerned with the porting of numbers relating to cellular mobile services.

NICTA considers that the extent of fixed narrowband services in PNG is very limited. Consequently, competition in fixed services will likely not be materially improved nor will other social or economic objectives be advanced by introducing fixed number portability at this time. The key number portability issues need to be considered in the context of the overwhelming bulk of services – that is, for mobile services. Phase 2 of the 2023-24 Public Inquiry (see Section 2.6 below) included a new question on FNP, as triggered by Digicel, and whilst there was some interest the general view was that MNP should be prioritised and FNP considered at a later date.

This decision to restrict the scope of number portability to MNP does not preclude reconsidering the matter at a future time. NICTA considers that there will be benefits in terms of improved prospects for success if initially number portability is limited to MNP. If competition in the fixed sector develops to support the feasibility of fixed number portability (FNP) in the future, then the MNP service could be designed and implemented to enable an aligned FNP service to be added on to the PNG MNP platform at that time.

### 2.3. Mobile Number Portability – Objective

The main benefit of number portability is to reduce the costs of changing operator for subscribers. This benefits the subscriber directly and increases competition in the provision of telecommunications services – in this case in the market for retail mobile services. The attachment to service numbers and inability to retain numbers when switching service provider acts as a barrier for some subscribers to switch and therefore prevents competing service providers from attracting those subscribers. The reverse is also true. In the absence of MNP, service providers do not have to compete as hard to retain their existing subscribers, knowing that in the case of some of them, attachment to their existing service number locks them in.

Since the introduction of number portability services in Singapore in 1997, customers across more than half of the world's countries are able to change service providers whilst retaining their number. It is the number that is retained or ported. MNP services are available across both developed and emerging markets in North and South America, Europe, Africa, Asia and the Caribbean.

### 2.4. Mobile Number Portability in the NICT Act 2009

Potential implementation of MNP in PNG is considered in Section 189 of the Act.

Section 189(1) requires NICTA to hold a public inquiry under Section 230 of the Act and to publish a **discussion paper** identifying the costs and benefits of the implementation of MNP in PNG. Section 189(2) leaves the timing of any such public inquiry to NICTA to determine having regard to the objectives of the Act and the regulatory principles. MNP is therefore a matter for NICTA to initiate.

Section 189(3) permits NICTA to consult with any person in the preparation of the discussion paper with a view to determining the form of MNP that would be most appropriate in PNG and the costs and benefits of implementing that form of MNP. NICTA has employed consultants, Cenerva Limited, to provide expert advice, to draft the discussion paper and conduct the cost benefit analysis.

Section 189(4) requires that following receipt of submissions on the discussion paper, NICTA shall prepare a **final report** for the Minister under Section 235 identifying NICTA's recommendation whether the national numbering plan should be amended to implement MNP in any form; the basis of NICTA's recommendation; the proposed form of rules and/or recommendations to the national numbering plan required for MNP implementation, if any; and the costs and benefits from implementing the recommended form of MNP.

Section 189(5) requires, in the event of NICTA recommending MNP, that the Minister shall seek submissions from the public on whether he should accept NICTA's recommendation.

Section 189(6) provides that, following receipt of submissions, the Minister shall release a **public report** identifying the extent to which the Minister accepts NICTA's recommendations, and the reasons why any of those recommendations are not accepted in whole or in part.

Section 189(7) requires NICTA, in consultation with the Minister, to implement those recommendations that the Minister has accepted.

For the avoidance of doubt, this report is the **final report** identified in Section 189(4) of the Act, as well as being the public inquiry report required pursuant to Section 235(1) of the Act.

## 2.5. Initial 2016-17 MNP Consultation

NICTA consulted the PNG market stakeholders in 2016-17 on the proposed introduction of MNP into the PNG telecommunications market, including undertaking a cost benefit analysis, but decided not to proceed since NICTA and the Minister for ICT concluded that MNP should be implemented in PNG but not before a ‘triggering event’ has occurred. A triggering event could be either:

- A. The issue of a licence to a new entrant mobile operator with resources that enable that operator to compete effectively with current market operators; or
- B. The financial strengthening of Kumul (Telikom/bmobile) to enable it to compete effectively and sustainably in the PNG mobile services market.

The criteria for a triggering event relating to a new entrant being licensed to provide mobile network services in the PNG market were specified in NICTA's 2017 report to the Minister as:

- i. That an operator licence has been issued by NICTA to the proposed new entrant pursuant to Section 47 of the Act which shall be an individual licence including facilities rights to enable the licensee to build and operate network facilities and infrastructure for the provision of mobile services in PNG;
- ii. That a radiocommunications licence has been issued to the proposed new entrant pursuant to Section 171 of the Act; and
- iii. That the new entrant shall have in place either a commercial mobile service operations in PNG or clear contractual commitments with one or more vendor organisations to install mobile service networks on behalf of the new entrant.

NICTA is of the view that the issue of a mobile licence to Digitec Communications Ltd in 2018 and the subsequent network build and service launch in April 2022 (trading as Vodafone PNG) has resulted in a new operator effectively competing with the existing market operators which meets all three criteria for triggering event a). NICTA therefore believes that the PNG telecommunications market could benefit from the introduction of MNP since the freedom provided to PNG consumers to move their service to the service provider which best meets their needs could act as a positive catalyst to change competitive dynamics and enhance value to PNG consumers.

In addition, since the 2016-17 consultation, Telikom's Citifon CDMA operation has migrated to 4G LTE and merged with bmobile so there is now a single Telikom bmobile mobile network within the Kumul Consolidated Holdings Limited.

## 2.6. NICTA's 2023-24 Public Inquiry and Public Consultation

On 20 October 2023, NICTA commenced a second public consultation seeking submissions on the matter of Mobile Number Portability (MNP) and a Discussion Paper entitled “Mobile Number Portability Business Rule – Consultation Paper” which included nineteen questions related to aspects of MNP operations.

The deadline for submissions was extended to 29 December 2023, enabling a greater period for stakeholders to consider the matter and to prepare submissions if they wished.

Written submissions, in alphabetical order of organisation, were received from:

- Digicel (PNG) Limited (“Digicel”)
- South Pacific International Academy (“SPIA”)
- Telikom PNG Limited (“Telikom”)
- Vodafone PNG Limited (“Vodafone”)

The consultation document and written submissions can be found on NICTAs website at <https://www.nicta.gov.pg/cp-0-32/>

NICTA prepared a response report in which the key points raised in submissions were assessed and responded to by NICTA. The response report included three additional questions and areas for feedback by respondents and this was published on 29 April 2024 as the second stage of the public consultation entitled “Public Consultation on the Proposed Business Rules for Mobile Number Portability – Phase 2”. Respondents were given until 27 May 2024 to submit their written responses.

Written submissions, in alphabetical order of organisation, were received from:

- Digicel (PNG) Limited (“Digicel”)
- Independent Consumer and Competition Commission (“ICCC”)
- Telikom PNG Limited (“Telikom”)
- Vodafone PNG Limited (“Vodafone”)

The consultation document and written submissions can be found on NICTAs website at <https://www.nicta.gov.pg/cp-0-35/>

Overall, Vodafone and the ICCC favoured the introduction of MNP. Digicel did not object to MNP in principle but was concerned about procedural issues and whether a case had been made based on a cost benefit analysis. Telikom also favoured MNP but had some concerns about costs and the funding needed to implement it. All submissions were useful and NICTA appreciates them.

### **3. ASSESSING THE FEASIBILITY OF MNP**

#### **3.1. Pre-conditions for MNP**

The introduction of MNP does not dramatically change the competitive market dynamics in isolation; the market should already be competitive. MNP acts merely as a catalyst to enhance and progress competition.

Based on MNP implementations in other countries, the successful introduction of MNP requires that all of the following criteria need to be met:

- a. Adequate Market Scale and Size – in very small markets the cost of implementation and continued operation of a system to support MNP may be too much for the market, or the individual operators, to bear. It should be noted however that MNP has been successfully introduced into some very small markets in recent years, helped by much lower MNP clearinghouse set-up and operating costs since the initial PNG consultation in 2016-17.

- b. Competition – if the market is uncompetitive at the outset, then MNP will not make it so. The aim of MNP is to enhance competition by removing one obstacle, namely the barriers that exist when subscribers seek to switch from one service provider to another and, at the same time, retain the value of, or investment in, their current service number.
- c. Sufficient consumer Interest in MNP – if there is little consumer awareness of or interest in MNP the facility will tend not to be used and the investment in MNP by operators will be largely wasted. However, consumer interest can be sparked by appropriate publicity and market awareness at the time of implementation and after.
- d. Established interconnection between operators – subscribers switch service providers to gain improved value (either through improved service performance and/or lower prices) and expect to be able to retain the ability to call other subscribers on their current or other networks. This can only be achieved through effective interconnection arrangements between operator networks.
- e. Adequate Regulatory Requirements – experience strongly suggests that if regulatory arrangements and specifications for MNP are not comprehensive or lack rigor then the implementation will likely be unsuccessful. In particular, donor operators (those losing a subscriber who has ported out or intends to do so) may well game the system and delay or undermine porting if allowed to do so.

### 3.2. Methodology for assessing feasibility

The earlier MNP consultation in 2016-17 undertook a detailed economic analysis using the 3 types of benefits approach which was common a decade ago, as follows:

**Type 1 Benefits:** those which accrue to subscribers who retain their number when changing operator.

**Type 2 Benefits:** efficiency improvements and any associated price reductions which result from increased competitive pressure.

**Type 3 Benefits:** other resource savings that arise from fewer number changes and include fewer misdialled calls and changes to information stored in customer equipment.

Most cost benefit studies undertaken globally recognise that the greatest benefits provided by the introduction of number portability are driven by Type 2 market wide price and value enhancements. With this in mind, NICTA has chosen to focus this new cost benefit analysis only on Type 2 benefits; this approach has already been successfully adopted in similar number portability evaluations in numerous other countries in recent years.

Where the value of the benefits exceeds the value of the costs then MNP may be considered feasible. However, some margin must be allowed to reflect the uncertainty about the range of costs and benefits, and also the uncertainty of the porting rates that will follow. The analysis has been based on the experience of number portability in a range of other countries, some of which have similarities to PNG. As a result, NICTA is seeking to base its conclusions and recommendations for implementation on a conservative view of the matter and therefore is looking for a clear difference between the value of the benefits and the costs that are required to achieve those benefits.

### 3.3. MNP Benefits

The CBA analysis exercise used the following methodology:

- Identify suitable benchmark markets, some with and some without MNP
- Identify the benchmark products / bundles
- Research the product pricing for the identified benchmark markets
- Analyse the benchmark pricing data:
  - Identify MNP pricing factors – by sector
  - Compare benchmark markets without MNP against Papua New Guinea
  - Compare benchmark markets with MNP against Papua New Guinea
- Identify MNP pricing factors – by sector
- Estimate current value of Papua New Guinea mobile sector
- Identify potential MNP impact scenarios on Papua New Guinea market
- Calculate minimum and maximum MNP impact value (MNP benefits over 5 years)

### 3.4. MNP Costs

The costs of MNP are incurred by operators and vary depending on the implementation chosen and the functionality of their current systems. MNP costs can be subdivided as follows:

(1) One-time costs. These are the initial investments and expenses incurred for installing and commissioning MNP. One-time or set-up costs can be further categorized as follows :-

- a. Common/ Shared Costs - which include central number portability administration set-up costs; regulator MNP programme management costs; and regulator MNP public awareness and education costs.
- b. Individual Operator Costs - which include core network upgrade costs to support MNP related traffic routing changes; business systems upgrade costs to support processing and administration of porting transactions and supporting MNP related billing changes; MNP programme management costs; engineering and testing costs; business process impact assessment and change costs; staff training and awareness costs; and legal and commercial costs.

(2) Recurring costs. These are the additional costs incurred that are required for ongoing operations and maintenance of the MNP system. Two categories of recurring costs that are relevant for cost recovery purposes are:

- a. Additional costs for handling calls. These are internal/ inter-operator specific traffic-sensitive costs.
- b. Administrative costs incurred with every request to port a number. These are the administrative costs incurred to transfer or port a user from a donor network to a recipient network. The costs are associated with procedures undertaken when a user orders number portability. These administrative costs are incurred no matter what technical approach is used to implement number portability and include allocation and

sharing of central porting administration system/ service operating costs; internal operator incremental operational resourcing costs required to process porting transactions; and regulator MNP service monitoring and management resourcing costs.

### 3.5. Types of MNP clearinghouse system

The NP clearinghouse (NPC) vendor ecosystem has evolved significantly since the initial MNP consultation in 2016-17. Nowadays it is possible to contract for a 'lite' cloud-based software solution which allows MNP systems to be profitably installed in ever smaller markets. The following table summarises the pros and cons of the traditional in-country dedicated solution with the new cloud-based systems.

|                                    | Advantages   | Disadvantages  |
|------------------------------------|--|--|
| <b>In-country dedicated system</b> | <p>Aligns to national data protection requirements.</p> <p>Increase local content in the NPC service delivery.</p> <p>Enables NPC specific functionality to be developed and provided.</p>   | <p>Very expensive, requiring dedicated local hosting, support and helpdesk facilities.</p> <p>Single point of failure if subject to a catastrophic disaster.</p> <p>Additional support costs for PNG specific functions.</p> <p>Does not benefit from shared enhancements.</p> |
| <b>Cloud-based system</b>          | <p>Operation of the NPC service is securely shared alongside other markets.</p> <p>Significantly reduced NPC set-up and ongoing operating costs.</p> <p>Significantly reduced NPC support and helpdesk costs since support is provided for multiple markets.</p> <p>Benefit from shared NPC development &amp; enhancement.</p> | <p>May not align to national data protection or sovereignty rules; however, smart MNP process design can mitigate some risks.</p> <p>Potential disruption to porting service operations if the connectivity links to the NPC are disrupted (unlikely).</p>                     |

## 4. COST BENEFIT ANALYSIS

### 4.1. PNG Mobile Market

The estimated size and composition of the PNG mobile market, as shown in Figure 4.1 below, have been based on information available to NICTA and its consultants:

**Figure 4.1 – Estimated Mobile Market Size**

|                    | Data from PNG MNP Workshop (2023) <u>Low Case</u> | Data from ITU submission (2021) <u>High Case</u> |
|--------------------|---|--|
| Mobile Subscribers | 3.85 million                                      | 4.82 million                                     |
| Annual Revenues    | USD 400 million                                   | USD 500 million                                  |
| Mobile Penetration | 33%   | 41%  |

The above estimates are based on the following NICTA assumptions:

PNG population is 11.8 million

Subscriber Split = 97% prepaid and 3% post-paid

ARPU = USD 8.42 (PGK 35) prepaid and USD 16.84 post-paid (PGK 70)

### 4.2. MNP Costs

The different cost categories were outlined in Section 3.4 of this report. Based on interviews with the mobile operators in PNG and benchmark costing data provided by NICTAs consultants, based on MNP implementations in other countries, the following sub-sections provide estimates for the MNP costs for PNG.

#### Operator readiness costs

| (Figures in USD)          | Minimum          | Maximum           |
|---------------------------|------------------|-------------------|
| Core network              | 1,450,000        | 1,650,000         |
| MNP gateway               | 650,000          | 950,000           |
| VAS systems               | 650,000          | 950,000           |
| Billing system            | 1,800,000        | 2,275,000         |
| CRM / Provisioning system | 3,100,000        | 3,450,000         |
| Testing                   | 380,000          | 480,000           |
| Business processes        | 250,000          | 330,000           |
| MNP programme management  | 120,000          | 200,000           |
| Training                  | 713,000          | 780,000           |
| <b>TOTAL</b>              | <b>9,113,000</b> | <b>11,065,000</b> |

## NPC system costs

Based on the pros and cons of traditional in-country systems versus new cloud-based NPC solutions, as outlined in Section 3.5, it is assumed for the purposes of this cost benefit analysis that a cloud-based solution is chosen for PNG. The estimated costs for this are as follows:

| (Figures in USD)          | Minimum   | Maximum   |
|---------------------------|-----------|-----------|
| Initial set-up costs      | 100,000   | 200,000   |
| Annual operating costs    | 200,000   | 300,000   |
| Total 5-year service cost | 1,100,000 | 1,700,000 |

## Total MNP costs

NICTA has estimated the total costs of setting up and running the MNP service in Papua New Guinea for a 5-year period, as follows:

| (Figures in USD)                    | Minimum           | Maximum           |
|-------------------------------------|-------------------|-------------------|
| <b>Set-up Costs</b>                 |                   |                   |
| - 3 MNO readiness costs             | 9,113,000         | 11,065,000        |
| - NPC costs                         | 100,000           | 200,000           |
| <b>Total set-up costs</b>           | <b>9,213,000</b>  | <b>11,265,000</b> |
|                                     |                   |                   |
| <b>5-year operating costs</b>       |                   |                   |
| - 3 MNO system support costs        | 2,275,000         | 2,912,500         |
| - 3 MNO MNP man. costs              | 1,440,000         | 1,440,000         |
| - NPC management costs              | 1,000,000         | 1,500,000         |
| <b>Total 5-year operating costs</b> | <b>4,715,000</b>  | <b>5,852,500</b>  |
|                                     |                   |                   |
| <b>TOTAL MNP Costs</b>              | <b>13,928,000</b> | <b>17,115,500</b> |

In summary, based on the analysis undertaken, NICTA estimates that the total 5-year cost of setting up and running the MNP service in Papua New Guinea is between USD 14 million and 17 million.

## 4.3. MNP Benefits

### Benchmarking approach

NICTA, with support from its consultants, has undertaken a study to assess the competitive dynamics influencing current market pricing of mobile telecommunications services in Papua New Guinea by benchmarking with similar countries in the Asia-Pacific region and globally. When identifying the benchmark markets, NICTA was looking for:

- Balance between markets that already have MNP and those that do not
- Regional comparison where possible (difficult as no MNP in the Pacific Islands yet)
- Markets with similar size population and/or
- Markets with similar size GDP per Capita and/or
- Markets with similar size GDP

ICTA used 44 markets in the benchmarking exercise; 22 were from the Asia Pacific region and 22 from the rest of the world (ROW). Half the markets have launched MNP and half have not. The markets are shown below.

| Region         | Country                        | Multi Island | Population (m) | GDP/Cap (USD)  | Total GDP (USD 'm) | MNOs     | MNP       |
|----------------|--------------------------------|--------------|----------------|----------------|--------------------|----------|-----------|
| <b>Pacific</b> |                                |              |                |                |                    |          |           |
|                | Australia                      | Yes          | 26.92          | \$64,821       | \$1,745,221        | 3        | Yes       |
|                | Brunei                         | Yes          | 0.46           | \$32,963       | \$15,128           | 2        | Yes       |
|                | Cook Islands                   | Yes          | 0.01           | \$18,806       | \$278              | 1        | No        |
|                | Federated States of Micronesia | Yes          | 0.11           | \$4,084        | \$460              | 1        | No        |
|                | Fiji                           | Yes          | 0.92           | \$5,889        | \$5,442            | 2        | No        |
|                | French Polynesia               | Yes          | 0.28           | \$20,739       | \$5,830            | 2        | No        |
|                | Indonesia                      | Yes          | 283.31         | \$4,876        | \$1,381,421        | 3        | No        |
|                | Kiribati                       | Yes          | 0.13           | \$2,107        | \$279              | 2        | No        |
|                | Malaysia                       | Yes          | 35.90          | \$11,379       | \$408,543          | 6        | Yes       |
|                | Marshall Islands               | Yes          | 0.04           | \$6,678        | \$259              | 1        | No        |
|                | New Zealand                    | Yes          | 5.25           | \$42,400       | \$222,681          | 3        | Yes       |
|                | Palau                          | Yes          | 0.02           | \$15,899       | \$282              | 2        | No        |
|                | <b>Papua New Guinea</b>        | <b>Yes</b>   | <b>10.76</b>   | <b>\$2,958</b> | <b>\$31,833</b>    | <b>3</b> | <b>No</b> |
|                | Philippines                    | Yes          | 116.62         | \$3,746        | \$436,872          | 4        | Yes       |
|                | Samoa                          | Yes          | 0.22           | \$4,330        | \$950              | 2        | No        |
|                | Singapore                      | No           | 5.86           | \$84,734       | \$496,882          | 4        | Yes       |
|                | Sri Lanka                      | No           | 22.20          | \$12,260       | \$272,225          | 3        | No        |
|                | Solomon Is                     | Yes          | 0.84           | \$2,042        | \$1,712            | 2        | No        |
|                | Thailand                       | Yes          | 71.63          | \$6,394        | \$457,991          | 3        | Yes       |
|                | Tonga                          | Yes          | 0.10           | \$4,933        | \$516              | 3        | No        |
|                | Vanuatu                        | Yes          | 0.34           | \$3,515        | \$1,178            | 2        | No        |
|                | Vietnam                        | No           | 101.49         | \$4,282        | \$434,594          | 4        | Yes       |

| Region        | Country            | Multi Island | Population (m) | GDP/Cap (USD) | Total GDP (USD 'm) | MNOs | MNP |
|---------------|--------------------|--------------|----------------|---------------|--------------------|------|-----|
| Rest of World |                    |              |                |               |                    |      |     |
|               | Azerbaijan         | No           | 10.40          | \$7,126       | \$74,093           | 3    | Yes |
|               | Bahamas            | Yes          | 0.40           | \$35,897      | \$14,467           | 2    | Yes |
|               | Barbados           | No           | 0.28           | \$23,804      | \$6,728            | 2    | Yes |
|               | Benin              | No           | 14.81          | \$1,394       | \$20,657           | 4    | Yes |
|               | Burundi            | No           | 14.39          | \$193         | \$2,777            | 3    | No  |
|               | Congo DRC          | No           | 6.58           | \$2,478       | \$16,316           | 4    | No  |
|               | Dominican Republic | No           | 11.52          | \$10,718      | \$123,472          | 3    | Yes |
|               | El Salvador        | No           | 6.37           | \$5,391       | \$34,317           | 4    | Yes |
|               | Haiti              | No           | 11.91          | \$1,706       | \$20,309           | 2    | No  |
|               | Ireland            | No           | 5.31           | \$103,888     | \$551,440          | 3    | Yes |
|               | Jamaica            | No           | 2.84           | \$6,840       | \$19,405           | 2    | Yes |
|               | Madagascar         | No           | 32.74          | \$506         | \$16,573           | 3    | No  |
|               | Maldives           | Yes          | 0.53           | \$12,530      | \$6,637            | 2    | Yes |
|               | Malta              | Yes          | 0.55           | \$40,396      | \$22,032           | 3    | Yes |
|               | Mauritius          | No           | 1.27           | \$11,613      | \$14,729           | 3    | No  |
|               | Senegal            | No           | 18.93          | \$1,706       | \$32,306           | 4    | Yes |
|               | Seychelles         | Yes          | 0.13           | \$17,879      | \$2,374            | 3    | No  |
|               | Sierra Leone       | No           | 8.82           | \$758         | \$6,685            | 2    | Yes |
|               | Sri Lanka          | No           | 23.23          | \$3,828       | \$88,922           | 3    | No  |
|               | Tajikistan         | No           | 10.79          | \$1,160       | \$12,517           | 4    | No  |
|               | Togo               | No           | 9.72           | \$986         | \$9,583            | 2    | Yes |
|               | Trinidad & Tobago  | Yes          | 1.51           | \$20,016      | \$30,248           | 2    | Yes |

To undertake the mobile pricing benchmark across these 44 countries, it was important to find a consistent data source so countries could be compared on a like for like basis. NICTA chose to use the ITUs 2024 ICT Price Basket (see: <https://www.itu.int/en/ITU-D/Statistics/Dashboards/Pages/IPB.aspx>) for the analysis because the data was reasonably up to date and all 44 countries have provided the data to ITU. The ITU Price Basket comprises two elements:

- Low Basket = 70 voice minutes + 20 SMS + 500 MB data
- High Basket = 140 voice minutes + 70 SMS + 2 GB data

Whilst the pricing provided by each country to the ITU will not be the cheapest in each market, because they have been gathered using the same methodology, the relative price levels between markets is relevant for this cost benefit analysis.

### Benchmarking findings

The following table summarises the analysis undertaken using the ITU benchmark pricing data:

| (USD)        | Low Basket |         |            | High Basket |         |            |
|--------------|------------|---------|------------|-------------|---------|------------|
|              | No MNP     | MNP     | Difference | No MNP      | MNP     | Difference |
| Asia Pacific | \$18.83    | \$9.48  | 199%       | \$25.27     | \$12.98 | 195%       |
| RoW          | \$6.96     | \$16.35 | 43%        | \$10.24     | \$20.22 | 51%        |
| PNG          | \$23.78    |         |            | \$39.64     |         |            |
| PNG vs AP    | 126%       | 251%    |            | 157%        | 305%    |            |
| PNG vs RoW   | 342%       | 145%    |            | 387%        | 196%    |            |

The results clearly show that the level of retail mobile prices in Papua New Guinea are materially higher than all four of the benchmark areas (Asia Pacific MNP markets, Asia Pacific non-MNP

markets, Rest of the World MNP markets and Rest of the World non MNP markets) for both the Low and High Baskets. More specifically:

- In the Asia Pacific region averaged across both baskets, PNG pricing is between 41% and 178% higher than markets without and with MNP.
- In the ROW averaged across both baskets, PNG pricing is between 265% and 70% higher than markets without and with MNP.

The benchmarking analysis also suggests that the average pricing premium between markets with number portability and those without across the Asia Pacific region is roughly 100%.

NICTA believes the MNP cost benefit analysis should be based on conservative price reduction / value enhancements of between 20% and 30% over a five-year period following the launch of the MNP service in Papua New Guinea. This would lead to the following benefits:

| (Figures in USD)            | Low Case           | High Case          |
|-----------------------------|--------------------|--------------------|
| <b>PNG Mobile Market</b>    | <b>400 million</b> | <b>500 million</b> |
| <b>20% benefit from MNP</b> | <b>80 million</b>  | <b>100 million</b> |
| <b>25% benefit from MNP</b> | <b>100 million</b> | <b>125 million</b> |
| <b>30% benefit from MNP</b> | <b>120 million</b> | <b>150 million</b> |

NICTA's analysis suggests using conservative price reduction assumptions that introducing MNP could generate market price reductions of between USD 80 million and USD 150 million over five years, driving the alignment of Papua New Guinea market pricing with the Asia Pacific regional benchmark markets.

#### 4.4. MNP Cost Benefit Analysis

Under section 189 of the Act, NICTA is required to demonstrate that the market, economic, consumer benefits derived from introducing MNP are expected to be greater than the identified market and stakeholder costs.

NICTA's conservative evaluation of the likely benefits of introducing mobile number portability indicate the benefits to the PNG economy and consumers range between **USD 80 million** and **USD 150 million** over five years post the launch of the MNP service.

Similarly, NICTA's evaluation of the likely cross industry costs of introducing mobile number portability range between **USD 14 million** and **USD 17 million** over five years post the launch of the MNP service.

NICTA therefore concludes that the cost benefit analysis of just Type 2 benefits from the potential introduction of a mobile number portability service into PNG could generate net positive benefits of between **USD 63 million** and **USD 136 million** to the PNG economy and consumers over five years post the launch of the MNP service.

On this basis, NICTA concludes that the cost benefit assessment obligations required under Section 189 of the Act have been fulfilled and support NICTA's recommendation to the Minister to progress with the implementation and launch of the PNG mobile number portability service.

## 5. MNP IMPLEMENTATION IN PNG

### 5.1. MNP Pre-conditions in PNG

The pre-conditions are set out in Section 3.1 of this report. Outlined below is an assessment of the circumstances in PNG against each of the pre-conditions.

- a. Adequate market scale and size: PNG has significant existing mobile market scale with between 3.8 and 4.8 million subscribers (revenues of USD 400 to 500 million per year), with significant potential for organic market growth based on the relatively low market penetration of between 33 and 41%. MNP has been introduced successfully into much smaller markets.
- b. Competition: Competition in the PNG market has improved significantly since the initial MNP consultation in 2016-17. Whilst Digicel is still the market leader in the retail mobile market, Vodafone is now a serious competitor and has taken significant market share since its launch in late 2022. In addition, Kumul has consolidated its multiple mobile networks into a single mobile network operator under Telikom PNG; though the Group still lacks financing to replace outdated network components and support systems.
- c. Consumer awareness of and interest in MNP: A limited consumer survey conducted by NICTA during the initial consultation strongly suggests that there would be a significant level of consumer interest in MNP. This should not be left to chance. If MNP is approved NICTA will ensure that consumers are made aware of the benefits of portability – through media and other publicity and advertising. In addition, it can be anticipated that the operators would respond with appropriate marketing campaigns and attractive new price/package offers.
- d. Established interconnection between operators: Interconnection arrangements have been agreed and working since 2008.
- e. Adequate regulatory requirements: This paper and the detailed arrangements to be put in place should MNP be required, will provide a detailed and comprehensive set of regulatory requirements to address all situations. NICTA is proposing that the detailed arrangements should take the form of Rules under Section 218 of the Act and be made in accordance with the procedures set out in Section 219 of the Act. The proposed content, but not the final form of such rules, is set out later in this report in the recommendations at Section 6.2.
- f.

### SUMMARY

Figure 5.1 below summarises NICTA's assessment of PNG against the MNP pre-conditions.

**Figure 5.1: PNG assessed against MNP pre-conditions**

| Criterion                           | Assessment   |
|-------------------------------------|--|
| Adequate Market Scale and Size      | Pass   |
| Effective Competition               | Pass   |
| Sufficient consumer Interest in MNP | There is evidence of consumer interest, but public education is yet to occur |

|                                  |                 |                         |
|----------------------------------|-----------------|-------------------------|
| Established<br>between Operators | Interconnection | Pass                    |
| Adequate<br>Requirements.        | Regulatory      | Proposed in this report |

## 6. RECOMMENDATIONS

### 6.1. Recommendations and Rules

The purpose of this Section is to draw together in a summary the specific recommendations that NICTA is making to the Minister and which have been discussed earlier in this report. As specified in Section 198(4) of the Act:

- a) NICTA recommends that the national numbering plan be amended to implement mobile number portability in Papua New Guinea.
- b) The basis for NICTAs recommendation is a positive cost benefit analysis and support for the service from licensees.
- c) the proposed form of rules for MNP will be a new MNP Regulation; the amendment to the national numbering plan will be the allocation of a new routing number to each of the mobile network operators.
- d) the estimated costs and benefits of implementing mobile number portability in Papua New Guinea are outlined in Section 4 of this report.

It is proposed, following consultation pursuant to Section 189(5) of the Act, to develop Rules (pursuant to Sections 218 of the Act) as the appropriate means for giving formal effect to the content of the specific recommendations set out below.

### 6.2. Specific Recommendations

NICTA recommends that:

#### MNP implementation

- 1) MNP should be implemented in PNG once the Minister approves it.

#### Date of Effect of Rules

- 2) The Rules that govern the implementation and provision of MNP in PNG should come into effect when they are made and published in the Gazette.

#### MNP Coordination Committee

- 3) NICTA shall establish an MNP Coordination Committee comprising NICTA as chair and representatives of all licensed operators impacted or potentially impacted in operational terms by the provision of MNP in PNG. The purpose of the Committee shall be to ensure that all parties are able to coordinate and plan for the expeditious

and effective implementation and operation of MNP and to provide industry advice on detailed aspects of MNP administration and process that need attention. The procedures and agenda for Committee meetings shall be matters for NICTA to determine after discussions with operator representatives. The MNP Coordination Committee under the agreed procedures will make recommendations to NICTA on specific technical, operational and commercial matters relating to the implementation and operation of the PNG MNP service but NICTA will be the final decision making authority.

### **Recipient-led MNP**

- 4) MNP shall be Recipient-led in PNG – that is, the porting customer shall agree a limited power authorising the recipient operator to close the customer's account with the donor operator and to arrange the porting of the customer's number to the recipient operator's network. Porting initiation should be limited to a face-to-face interaction between the customer requesting porting and a sales representative of the recipient operator. Thus, porting initiation should not be permitted by a remote channel, such as online or via a call centre.

### **Centralised Porting Solution**

- 5) A centralised number database solution (NPC) is the most appropriate for PNG.

### **Routing of Calls and SMS**

- 6) All licensed operators that originate or receive mobile traffic in PNG shall be responsible for routing such calls to the correct network, whether the number called has been ported or not, using the All-Call Query (ACQ) direct routing methodology.
- 7) NICTA shall refer the routing of international inbound voice and SMS message traffic to the proposed MNP Coordination Committee to consider the best approach to be taken.

### **Cost Recovery**

- 8) Each operator should be responsible for its own MNP establishment/setup costs and such costs should not be recovered from other operators or consumers, including the costs associated with establishing and maintaining its own database of numbers.
- 9) The MNP Coordination Committee will be requested by NICTA to consider how the MNP clearinghouse establishment costs might be recovered and how ongoing usage costs might be set.
- 10) No charges may be imposed on customers who port their mobile number.

### **Porting Times**

- 11) Mobile numbers shall be ported within one (1) working day measured from the time when the donor operator is made aware of the porting of the customer's number, via a porting request from the recipient operator.

### **Validation of Porting Requests**

- 12) The information transferred during the porting process between the recipient and donor operators should be limited to:

- (a) Mobile Station Integrated Services Digital Network (MSISDN) identification or number to be ported;
- (b) Confirmation by the recipient operator, that the validation process has been completed correctly;
- (c) Current service type with the donor operator, i.e. pre-pay or postpaid; and
- (d) Name of the donor operator.

### **Porting customer debts**

- 13)The porting process should not be considered to be part of debt management by the donor operator. Outstanding debt at the time of porting should not be reason for a donor operator to reject a porting request, as long as the customer's number/account was not barred or suspended from making calls/ sending SMS, at the time porting request was initiated.
- 14)Customers need to be made aware of their absolute obligation to settle outstanding debts and charges to the donor operator, and that such charges may also include any early termination fees applicable to their service or contract.

### **Winback protection**

- 15)Donor operators may not seek to win-back or otherwise dissuade porting customers from porting through direct contact with those customers for 60 days after a porting transaction has been advised by the recipient operator to the donor operator via the NPC. This prohibition does not apply to debt recovery.

### **Customer Porting Restrictions**

- 16)A customer who has ported a mobile number to a recipient operator may not port that number again to another operator within a period of 60 days from the initial port.

### **Target for the commencement of MNP**

- 17)NICTA and the MNP Coordinating Committee shall seek to enable all preparations to be completed to enable MNP to commence within 24 calendar months.

### **FNP implementation**

- 18)FNP will be formally considered at a future date, after the MNP service has been launched in PNG, in line with Section 198(8) of the Act.

