



**Public Inquiry
into potential declaration of
certain wholesale services**

**PUBLIC INQUIRY REPORT AND RESPONSE TO
COMMENTS REPORT**

18 December 2018

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1 Background

NICTA has held a public inquiry under section 230 of the *National Information and Communications Technology Act 2009 (the Act)* into the potential declaration of a number of wholesale services as required in such circumstances by Section 127 of the Act.

The public inquiry has been held by NICTA on its own initiative, as provided for by section 127(2)(a) of the Act.

NICTA published a notice, pursuant to section 231 of the Act on 28 May 2018 setting out that fact that it was holding a public inquiry, the period during which the inquiry was to be held, the terms of reference of the inquiry and when the discussion paper (required by section 232) would likely be available.

The terms of reference of the inquiry required NICTA to:

- (a) analyse the extent of competition in domestic telecommunications markets with a particular focus on the geographical areas outside the provincial capitals where practicable and appropriate; and
- (b) form a view as to whether or not those markets are effectively competitive; and, if any is not,
- (c) consider whether the declaration by the Minister of any particular wholesale service or services in that market would satisfy the declaration criteria specified in section 128 of the Act; and
- (d) determine whether or not NICTA should recommend to the Minister that one or more wholesale services in that market be declared under section 130 of the Act; and, if such a recommendation should be made, and
- (e) specify the recommended terms of the declaration(s) and the recommended expiry date(s) for any such declaration(s).

This report has been prepared for the purposes of section 235 of the Act, and sets out its findings as a result of the public inquiry.

2 Discussion Paper

NICTA prepared a Discussion Paper in which it analysed the level of competition in markets in PNG and the potential benefits that might be had as a result of declaration of a number of wholesale services in accordance with the criteria in the Act.

The Discussion Paper was published on 28 May 2018.

In the Discussion Paper NICTA considered services in the following wholesale markets:

- A. the market for wholesale capacity on, and access to, international fibre optic submarine cables;
- B. the markets for wholesale voice call termination on individual fixed and mobile networks;
- C. the market for wholesale mobile access and call origination services;
- D. the market for wholesale fixed access and call origination services;
- E. the market for wholesale broadband capacity; and
- F. the market for wholesale leased lines services

Based on its analysis and consideration of the criteria in the Act which apply for a service to be declared, NICTA proposed in the Discussion Paper that certain wholesale services be declared, as follows (using the alphabetical references above):

In relation to Market A:

- international submarine cable transmission capacity service
- international submarine cable gateway access service
- international submarine cable duct access service

In relation to Market B:

- mobile terminating access service
- fixed terminating access service

In relation to Market C:

- mobile tower sharing service

In relation to Market D:

- that no service be declared at this time

In relation to Market E:

- wholesale broadband capacity service

In relation to Market F:

- that no service be declared at this time

3 Public consultation

Stakeholders were invited to make comments in written submission to NICTA on or before the deadline of 29 June 2018.

Digicel (PNG) Limited sought an extension to the deadline for submissions in early June 2018, based on the wide-ranging scope of the Discussion Paper, the range of wholesale services under consideration and the issues involved.

NICTA agreed to this request and the deadline for submissions was extended to 31 July 2018.

Written submissions were received from:

- Kumul Telikom Holdings Limited (**KTH**);
- PNG DataCo Limited (**DataCo**);
- Digicel (PNG) Limited (**Digicel**);
- The Independent Consumer and Competition Commission (**ICCC**).

The submission from KTH is signed off by the Acting CEO of KTH, the Managing Director of DataCo and the CEO of Bmobile, all member companies of the KTH group. The detailed KTH submission has been received under cover of a letter from DataCo. In the light of these arrangements NICTA has treated the combined submissions of KTH and DataCo as constituting the KTH submission.

NICTA has received the submissions with thanks and examined them carefully. In the result the submissions have not caused NICTA to amend or withdraw any of the proposals set out in the Discussion Paper with the exception of the proposal to declare the wholesale access to telecommunications towers. In relation to that proposal NICTA considers that the balance of argument in the submissions suggests that a declaration not be recommended to the Minister at this time. However there is good reason for NICTA to more actively monitor the demand for tower sharing over the next one to two years, and to require, as part of a new record keeping rule under Section 251 of the Act, all licensed operators to keep records and to share them with NICTA in relation to applications made or received for tower access.

The responses in each of submissions in relation to the proposals in the Discussion Paper are summarised in the follow table:

Proposal in Discussion Paper	KTH	Digicel	ICCC
Declare international submarine cable transmission capacity service	Agree	Agree	Agree
Declare international submarine cable gateway service	Agree	Agree	Agree
Declare international cable duct access service	Disagree	Agree	Agree
Declare mobile terminating access service	Agree	Disagree (Note 1)	Agree
Declare fixed terminating access service	Agree	Disagree (Note 1)	Agree

Proposal in Discussion Paper	KTH	Digicel	ICCC
Declare wholesale broadband capacity service	Disagree	Agree	Agree
Declare tower access service	Agree	Disagree	Agree
Not to declare wholesaled leased line service	Agree	No comment	Disagree

Notes:

(1) Digicel disagrees with the inclusion of calls that may originate outside PNG in the definition of the service, but otherwise would accept the definition of a service of this kind

A summary of the main points in each of the submissions, together with NICTA's responses in each case, are shown in Annex A to this report.

Given the diversity of views and the range of wholesale services covered by the review NICTA invited all interested parties, if they wished, to provide further comments on the issues, and particularly cross-comments on other submissions. Initially the deadline for second round comments was set at 31 August 2018, but the deadline was subsequently extended to 28 September 2018 following requests for more time from the industry.

In the event second round submissions were received from:

- KTH, signed by each of the three operating companies;
- Digicel; and
- the ICCC.

Each of the stakeholders maintained in their second round comments the views that were expressed in their earlier submissions. A summary of the main points in each of the second round submissions, together with NICTA's responses in each case, are shown in the second part of Annex A to this report.

NICTA has considered the comments received in both first and second round submissions very carefully in arriving at its findings as a result of the public inquiry.

A separate Recommendation Report or separate Recommendation Reports will be prepared for the Minister pursuant to section 129 of the Act setting out the findings and recommendations, together with proposed declaration instruments, for the Minister's decision under section 130 of the Act.

4 Requirements for Declaration of a Wholesale Service in the Act

4.1 The legislative regime

Operator licensees may, at any time, supply wholesale services to other operator licensees under terms and conditions that are commercially agreed. In addition a regulated wholesale access regime is provided for in Part VI of the Act. Under that regime:

(a) NICTA may, following an inquiry, recommend to the Minister that certain wholesale services should be made declared services;

(b) The supply of declared services is subject to the general pricing principles specified in the Act and also to service-specific pricing principles that are determined by NICTA;

(c) Access providers (i.e. operator licensees) that supply declared services are required to comply with certain non-discrimination obligations under section 136 of the Act in relation to their supply of declared services (unless exempted). This means that an access provider must:

- supply the declared service to, and interconnect relevant facilities with, any access seeker that requests such;
- supply the declared service and associated interconnection services to access seekers with a technical and operational quality of service equivalent to that which the access provider supplies to itself;
- supply the access seeker with ordering and provisioning and fault handling services that are equivalent to that which the access provider supplies to itself; and
- supply the access seeker, if requested, with billing information necessary to enable the access seeker to supply retail services using the declared service.

(d) The terms and conditions on which an access provider fulfils its non-discrimination obligations are to be commercially agreed between the access provider and the access seeker. An access provider may also set out terms and conditions in a reference interconnection offer (*RIO*). A RIO must be approved by NICTA;

(e) NICTA may specify model non-price terms and conditions relating to the supply of a declared service (section 133);

(f) In the event that an agreement on the terms and conditions relating to an access provider's fulfilment of its non-discrimination obligations cannot be reached, the terms and conditions of access will be as set out in any relevant RIO that the access provider has submitted to NICTA and which NICTA has accepted (section 138). In the absence of both an agreement and a RIO, the terms and conditions of access are those determined by NICTA through arbitration (section 138). In making such a determination, NICTA must have regard to any relevant model non-price terms and conditions it has previously specified (section 133) among other factors (section 149).

4.2 The inquiry and declaration process

NICTA may only recommend that the Minister declare a particular wholesale service if NICTA is satisfied that such a declaration would satisfy all of the declaration criteria set out in section 128 of the Act. The “declaration criteria” are as follows –

“(a) that declaration of the wholesale service will further the achievement of the objective of this Part as set out in Section 124; and

(b) specifically, in relation to the competition objective, that –

(i) access or increased access to the wholesale service (as a consequence of declaration) is necessary for the promotion of effective competition in at least one market other than the market for the wholesale service; and

(ii) the wholesale service is supplied in whole or in part via a facility that cannot feasibly be substituted, as a matter of commercial reality, via another facility in order to supply that wholesale service; and

(c) specifically, in relation to the efficiency objective, that –

(i) declaration would not materially compromise the incentives for efficient investment in any facility over which the wholesale service may be supplied; and

(ii) access or increased access to the wholesale service (as a consequence of declaration) is technically feasible having regard to the specific factors identified in Section 124(2)(a); and

(iii) in the case of wholesale services that are facilities access services, increased access to the wholesale service would avoid inefficient replication of underlying facilities that may be efficiently shared.”

The objective of Part VI of the Act, as set out in section 124, is as follows:

“(1) The objective of this Part and Part VII of this Act is to –

(a) promote effective competition in markets for ICT services in Papua New Guinea, to be known as the “competition objective”, subject to –

(b) promoting the economically efficient use of, and the economically efficient investment in, the facilities by which ICT services may be supplied, to be known as the “efficiency objective”.

(2) In determining the extent to which a particular thing is likely to further the achievement of the efficiency objective, regard shall be had (without limitation) to all of the following matters –

(a) whether it is technically feasible for the relevant ICT services to be supplied, having regard to –

(i) the technology available or likely to become available; and

(ii) the reasonableness of the costs involved; and

(iii) the effect of supplying the ICT services on the integrity, operation or performance of other ICT services or facilities; and

(b) the legitimate commercial interests of the access provider in supplying the ICT services, including the ability of the access provider to exploit economies of scale and scope; and

(c) the incentives for investment in the facilities by which the ICT services may be supplied, including the risks involved in making the investment.

Before NICTA may consider whether or not the declaration of a particular service would satisfy the declaration criteria it must first identify suitable candidate services for consideration. Although some potential wholesale services are envisaged in the Act itself, NICTA used the market analysis process to identify suitable candidate wholesale services.

5 Findings in relation to the market for wholesale capacity on, and access to, international fibre optic submarine cables

5.1 Discussion Paper coverage

5.1.1 Relevant Market

The relevant market is the wholesale market for the provision of capacity on international fibre optic submarine cables and services that enable use of such capacity via cable landing stations.

NICTA considered the potential for wholesale demand-side substitution in favour of satellite-based services. Although some degree of such substitution is probable, NICTA found that satellite-based services are practicable only for applications and products that have relatively low international capacity requirements. International experience, including in other Pacific nations, shows that such substitutability is limited and that high speed and high capacity applications and products require services based on fibre-optic cable technologies. NICTA concluded that satellite-based services are thus unlikely to provide a material constraint on a hypothetical monopolist supplier of the submarine cable services.

NICTA found that the market is national in its scope. Although physical access to the PPC-1 cable has to occur at the cable landing station in Madang, and physical access to the APNG-2 cable has to occur at the landing station at Ela Beach, and physical access to the planned Coral Sea Cable will occur at Kila Road, Port Moresby, the factors of competition governing the supply of the submarine cable services via those particular cables are nationally consistent and apply regardless where the wholesale customer is located in PNG.

5.1.2 Competition assessment

Kumul Telikom (*KTH*) is the only supplier in this market for wholesale capacity on, and access to, international fibre optic submarine cables. It controls the only two cable landing stations in PNG and, through those facilities, controls access to the two international submarine cable systems to which PNG is presently connected. KTH thus has a market share of 100%. These conditions are likely to persist for the immediate future, and appear to be the arrangements that will apply when the planned Coral Sea Cable commences operation in 2019.

The absence of any potential competition or significant countervailing buying power means KTH has an incentive and the ability to set its prices for the submarine cable services at levels that maximise KTH's profits at a given level of demand. A consequence of such pricing behaviour would be that the quantity of capacity/access demanded, consumer surplus, and total welfare would all be less than their potential values under competitive conditions.

As KTH is a vertically integrated operating group, with a presence in both the wholesale and downstream retail markets, it also has an incentive and the ability to discriminate in its supply of the submarine cable services in ways that unfairly advantage its own retail operations relative to competing retail services providers such as Digicel. For example, KTH could (in the absence of a declaration under Part VI of the Act) charge a higher price to downstream competitors than the price that KTH implicitly charges to its own retail arm (i.e. price discrimination between external and internal supply) or supply its downstream competitors

with services of a lesser quality than those KTH supplies to its own retail arm. Such behaviour would unfairly raise its rivals' costs relative to KTH's own retail operations.

Given these circumstances NICTA concluded that it is appropriate to consider the potential (re)declaration of the submarine cable services.

5.1.3 Wholesale services for potential declaration

NICTA considered the renewal of the declaration of the two submarine cable services that were declared in March 2013, namely:

- the international submarine cable transmission capacity service; and
- the international submarine cable gateway access service.

In addition, in anticipation of the construction of any new or replacement cable, NICTA also considered the declaration of a third service in this market, namely a beach manhole and associated duct access service. The cable duct access service enables an Access Seeker to provide its own network transmission capability to interconnect directly with the submarine cable system facilities and not be reliant at all on transmission services from the cable landing point or the cable landing station provided by the Access Provider if the Access Seeker chooses not to be so reliant.

The transmission capacity service and the gateway access service are separate wholesale services, meaning that although they may be offered as a bundle they must also be offered and made available separately (i.e. unbundled).

5.1.4 Competition objective

NICTA was of the preliminary view that the draft declaration would promote the competition objective, considering the following matters:

- (1) The proposed declaration will ensure that the access terms will be non-discriminatory and the access prices will be cost-based. This in turn should increase access to and utilisation of the submarine cable services in question. Increased and improved access to international connectivity via these services is necessary to promote competition in many downstream retail markets, in particular the national retail markets for mobile telecommunications services and broadband internet access. This is because international connectivity is a key input in the supply of internet access and international telecommunications services.
- (2) The well-recognised importance of access to submarine cable facilities for the development of competition in broadband markets.
- (3) Increased access would foster competition in the downstream markets in a number of important ways. Most significantly, it would remove the potential for KTH to:
 - (a) deny its competitors in the downstream markets access to or capacity on international submarine cables (including denial of reasonable terms);
 - (b) set excessively high prices for access to, or capacity on, international submarine cables;
 - (c) discriminate in terms of price or quality between its internal and external supply of access to, and capacity on, international submarine cables (i.e. to the advantage of its

own downstream business operations and to the disadvantage of its competitors in those same downstream markets).

- (4) declaration of the three submarine cable wholesale services described above will provide access seekers with greater flexibility and choice to determine how they might develop their businesses and adjust their business models. This in turn will leave open for commercial consideration how best to compete in the relevant downstream markets.
- (5) The services in question are supplied principally over facilities that constitute a cable landing station and enable access to, and use of, an international submarine cable system. It is not possible to supply the services without access to the facilities that constitute a landing station and it is not considered economically feasible to replicate such facilities for the purpose of accessing either of the existing submarine cable systems.

5.1.5 Efficiency objective

NICTA was of the preliminary view that the draft declaration would also promote the efficiency objective, considering the following matters:

- (1) The declaration of the international submarine cable transmission capacity service and the international submarine cable gateway access service would promote the efficiency objective by encouraging greater utilisation of the existing capacity in the submarine cables market.
- (2) The services in question are supplied principally over facilities that constitute a cable landing station and enable access to, and use of, an international submarine cable system. Following declaration, the pricing of access to and use of these services would be in accordance with the General Pricing Principles and thus set so as to generate expected revenue that is sufficient to meet the efficient costs of providing access to the services. That includes a reasonable return on investment over the economic life of the assets employed that is commensurate with the regulatory and commercial risks involved, and sufficient to encourage continued investment in the relevant facilities, particularly given the availability of subsidised funding from international development banks for investments in improved international connectivity.
- (3) The experiences of other countries that have taken similar regulatory actions in relation to access to submarine cable transmission capacities and facilities in landing stations shows that such regulation actually encourages increased investment by the landing station operators as a result of increased demand and regulatory and pricing certainty.
- (4) Access to the services in question has been demonstrated to be technically feasible in PNG as a consequence of the March 2013 declaration and also in many other countries.

5.1.6 Proposal

NICTA's preliminary findings were that:

(a) there is a national market for wholesale capacity on, and access to, international fibre-optic submarine cables and that KTH has a position of substantial market power in that market; and

(b) the declaration of three services within that market, namely:

- the international submarine cable transmission capacity service;
- the international submarine cable gateway access service; and
- the international submarine cable duct access service;

would satisfy the declaration criteria.

5.2 Consideration of matters raised in Submissions

All respondents agreed with the proposal to declare the first two of the three services listed above. KTH queried the need to declare the international submarine cable duct service on the basis that there was no current or prospective need for a separate service of this kind and that access seekers typically used the cable gateway service provided at the cable landing station.

NICTA considered that the duct access service was required as a safeguard, bearing in mind at least one situation in the recent past in which access was denied.

5.3 Public Inquiry Report Findings

NICTA finds that the situation described in the Discussion Paper and the proposals in relation to declaration of wholesale services in this market have been sustained and that the circumstances underpinning the proposal remain as described. NICTA affirms the proposals for declaration in the Discussion Paper.

6 Findings in relation to the markets for wholesale voice call termination on individual fixed and mobile networks

6.1 Discussion Paper coverage

6.1.1 Related declarations

The domestic mobile terminating access service (*DMTAS*) and the domestic fixed terminating access service (*DFTAS*) were deemed to be declared services upon the commencement of the Act in accordance with section 131. As per the terms of those deemed declarations, which are set out in Schedule 1 to the Act, the deemed declarations expired on 31st December 2014.

NICTA reviewed the markets for DMTAS and DFTAS in 2014, concluding that the requirements for declaration continued to apply in respect of these services. Hence the deemed declarations were extended until 31st December 2019.¹

Even though that Declaration still has almost two years before expiration, NICTA considered that it is now time for a further review to confirm the ongoing requirement for declaration of these services. As indicated in the Digicel submission, the outcome of the 2014 declaration is the subject of ongoing legal proceedings.

6.1.2 Relevant market

In the 2014 declaration the service definitions were focused—although not exclusively—on calls originating within PNG – hence the declarations of *Domestic Mobile Terminating Access Service* and *Domestic Mobile Terminating Access Service*.

NICTA considers that it is now necessary to examine the case for the inclusion of *International Mobile Terminating Access Service* and *International Fixed Terminating Access Service* within the same declarations. In effect this would mean defining the relevant markets more generically, namely *Mobile Terminating Access Service (MTAS)* and *Fixed Terminating Access Service (FTAS)*, with each market being defined to include the termination of both domestic and international calls. This is a different approach to that adopted in 2014. In 2014 there was a preference for retaining the description of the service that was originally deemed to have been declared on commencement of the Act. On reconsideration there is no strong reason for such a preference and no reason to preserve a particular definition of a wholesale service simply because it was deemed to have been declared in 2009.

A key justification for the wider definition of the relevant market and service now in contemplation is that the service being supplied by the operator in PNG is essentially the same for both domestic and international calls:

- (a) voice call and SMS/MMS termination on individual mobile networks in PNG; and
- (b) voice call termination on individual fixed networks in PNG.

¹ Section 2(2) of Wholesale Service Declaration No 1 of 2015, published in National Gazette of 27 March 2015

The wholesale services provided for the termination of international inbound calls differ from the equivalent domestic services only in that:

(a) the service includes routing through an international gateway as well as domestic switches and transmission facilities; and

(b) the service is provided to another telecommunications service provider that is outside of PNG rather than a domestic service provider.

It may also be noted that domestic and international termination services are sometimes direct substitutes for one another. Thus a caller from outside PNG may make a standard PSTN call to PNG that uses the wholesale international terminating access service, or the caller may use an “over the top” (**OTT**) service that brings the call into the country over the Internet and then uses a wholesale domestic terminating access service.

Other forms of substitution are possible, and recent technology developments and changes in the patterns of telecommunications usage have increased the scope of substitute services.

This substitution takes two main forms:

(a) Substitution between FTAS and MTAS. Most users of fixed telephone services also have access to a mobile telephone, thus giving callers the opportunity to substitute a call to a fixed line with a call to a mobile. Potentially, therefore, FTAS and MTAS could be considered as services within the same market. However, this substitution works only one way since most calls to mobiles are not substitutable by calls to fixed lines, and, given the substantial reliance in PNG on mobile services for voice calling, substitution in this sense is not possible most of the time.

(b) Substitution of both FTAS and MTAS by OTT services such as Skype, Viber, Facetime and WhatsApp. Increasingly these apps are installed on computers and mobile devices and offer users the chance of end-to-end OTT services, thus bypassing the need for FTAS or MTAS. These services undoubtedly provide an alternative means for making *some* calls, but the scale of the substitution effect is limited because both parties have to have access to the OTT service and, in some cases, the caller has to know the called party’s user name. This tends to limit OTT services to closed user groups such as families, friends or business acquaintances. However, it should be noted that there are significant incentives for using these alternative approaches for international calls in particular given the high-price of inbound international PSTN calls.

While substitution by alternative services is undoubtedly increasing, and will increase further as the use of 3G and 4G services proliferates, NICTA notes that the phenomenon is less developed in PNG than in many other countries. Even in countries where it is more developed, it has not stopped regulators continuing with regulation of FTAS and MTAS (or equivalent) services. The reason is simple: should a calling party wish to contact a particular user on a particular fixed or mobile number, then the originating network operator still has no choice but to use the wholesale FTAS or MTAS service. And this applies whether the call originates in PNG or overseas.

6.1.3 Competition assessment

Call termination markets are susceptible to ex ante regulation because they have high non-transitory barriers to entry and they are not trending towards being effectively competitive.

Further, ex post control by the *Independent Consumer and Competition Act 2002* would likely be insufficient to address the market failures concerned.

Each network operator has a substantial degree of market power (**SMP**) in the market for termination of calls/messages on its own network. SMP is problematic as it poses a material risk of harm to the development of effective competition in the downstream retail services markets and to consumer's long-term interests.

A prime example of the risks of competitive harm (absent regulation) may be found in the pricing of inbound international calls following the exclusion (in practice) of the wholesale international terminating access service from the DMTAS and DFTAS Declarations of 2014. Analysis conducted by NICTA in December 2016 found that inbound international calls to Australia, Singapore, New Zealand and USA were around 40% more expensive than the equivalent outbound international calls from PNG. Whereas the domestic termination rates for inbound international calls to Australia, Singapore, New Zealand and USA use the same cost-based approach as termination of domestic calls, this does not happen in PNG. The result is that prices for inbound international calls to PNG are set well above cost levels.

The simplest and most direct way to address the problem of high prices for inbound international calls is for NICTA to include both domestic and international calls in the declaration of FTAS and MTAS, and then to require all termination rates, both national and international, to be cost-based. Such an approach is widely adopted internationally and in many countries this effectively means the same termination rates apply for national and for inbound international calls.

The ICT Appeals Panel, which reviewed the 2014 Declaration following an appeal by Digicel, did not rule out such an approach, but it ruled that NICTA could not include such an approach as a variation to the terms of the existing declarations of DMTAS and DFTAS without explicit justification. Furthermore, the ICT Appeals Panel was discussing the approach adopted by NICTA in 2014 and not considering the redefinition of termination services altogether as is proposed in the Discussion Paper.

6.1.4 Wholesale services for potential declaration

All of the circumstances described above warrant the potential declaration of two relevant wholesale services, namely:

- (a) the mobile terminating access service (**MTAS**); and
- (b) the fixed terminating access service (**FTAS**).

6.1.5 Competition objective

One reason for persistent high prices for inbound international calls is the lack of competition in this market. Should a calling party in another country wish to contact a particular user on a particular fixed or mobile number in PNG, then the originating network operator currently has no choice but to use the wholesale international terminating access service provided by that operator in PNG.

Creating more competition in international operations, so as to lower prices for inbound calls requires two things:

- (a) licensing of multiple international gateway providers so that telcos in other countries have a choice of potential interconnection partners in PNG with whom to negotiate; and

(b) ensuring that cost-based transit between network operators in PNG, so that any international gateway operator is able to terminate any inbound international call on all networks and not just its own.

Explicitly including international calls in the declaration of MTAS and FTAS will help address both of these requirements by removing the artificial constraint that only domestically-originated calls may be terminated at regulated cost-based rates. This will have two effects:

(a) it will allow the existing international gateway providers (and any others that may be licensed in the future) to offer inbound international call termination services to all customers in PNG (not just those on its own network). This will create a market within PNG for international MTAS and FTAS: if the operator of the called party attempts to set excessive inbound international termination rates, the international correspondent may instead choose the international call termination service of another licensee which will in turn purchase (domestic) MTAS or FTAS from the operator of the called party.

(b) It will encourage more OTT providers to provide services within PNG. One of the main sources of competition and constraints on inbound international call prices is usually provided by OTT players such as Skype. Typically Skype carries traffic into the destination country on the Internet and then presents it for local call termination at local rates. This has not happened to date in PNG in part because cost-based termination rates have been reserved for domestically generated traffic.

6.1.6 Efficiency objective

The declaration of FTAS and MTAS will achieve the efficiency objective because declaration will better enable access seekers and, if necessary, NICTA to address circumstances in which an access provider seeks to impose excessive prices or other terms which reflect its market power. For example, if the terms for terminating access seek to require the access seeker to take more services or a greater service than it requires, that would result in inefficient investment. This would not compromise incentives for efficient investment and would actually enable inefficient investment outcomes that might otherwise arise to be negated through regulatory intervention.

International calls should be seen not so much for the money they directly generate, but for the opportunities for commerce and social welfare that they create. Put simply, if call prices are high then fewer calls will be made and less of the spin-off economic benefit will be generated. High prices for inbound international calls therefore raise the overall costs for residents and businesses in PNG, reduce overall economic activity and reduce overall national economic efficiency.

It may even be the case that high prices for inbound international calls bring less revenue into the country, thus reducing the efficiency of the operators themselves. Studies have shown that international calls are highly price elastic – people simply refuse to make calls if they perceive the price as being too high, with the result that revenues can actually fall when prices are increased or maintained at excessively high levels. This is especially so in the Internet age where alternative, cheaper means of communication abound (e.g. Skype and WhatsApp).

6.1.7 Proposal

NICTA's preliminary findings were that the declaration of the proposed MTAS and the FTAS would satisfy the declaration criteria in the Act.

6.2 Consideration of matters raised in Submissions

The submissions from KTH and ICCC supported the proposed declarations. The submission from Digicel did not. NICTA has carefully considered the matters raised by Digicel in its submission and has addressed each of them in the response to comments included in Annex A to this report.

In broad terms Digicel has put three main lines of argument for its views:

- (1) that the inclusion of the termination of calls originating outside PNG may not be legally included in the services as now defined;
- (2) that the declaration will benefit international carriers and not access-seekers or retail customers and users in PNG; and
- (3) that, as a result of (2), Digicel (and likely other PNG licensed operators) will have less money available to invest in infrastructure in PNG, especially in rural and regional locations.

In relation to (1), NICTA is of a different view based on the legal advice that it has obtained.

In relation to (2), NICTA disagrees, because it is clear that the same international carriers have lower rates and prices in relation to other Pacific and Asian nations where the termination rates are lower. Lower costs are passed on over time in lower prices and this operates in both directions. PNG customers have an interest in receiving calls as well as making them, and lower termination costs will result in higher volumes of inbound calls.

In relation to (3), NICTA considers that the commercial viability of any infrastructure investment reflects the returns that will result. NICTA does not accept that international calling charges to and from PNG have to be maintained at excessively high levels to subsidise commercially viable infrastructure investment within PNG.

6.3 Public Inquiry Report Findings

NICTA finds that the situation described in the Discussion Paper and the proposals in relation to declaration of wholesale services in the call termination market have been sustained and that the circumstances underpinning the proposal remain as described. NICTA affirms the proposals for declaration in the Discussion Paper.

7 Findings in relation to the market for wholesale mobile access and call origination services

7.1 Discussion Paper coverage

7.1.1 Relevant Market

The market for wholesale mobile access and call origination services includes all services that allow Mobile Virtual Network Operators (**MVNOs**) to provide retail mobile services over another operator's mobile network, including voice and data services. It includes access to passive infrastructure (e.g. towers), carrier selection and national roaming.

Put another way, the market for wholesale mobile access and call origination (**MACO**) services comprises various services that are typically considered to be components of the market, or separate sub-markets, which enable an access seeker to have access to the subscriber base of a mobile network operator.

MACO services include the sharing of and access to passive network elements in the mobile operator's network. Passive elements in this context are non-electronically active elements such as sites, buildings, towers, masts, poles and ducts. In the case of mobile networks the most commonly accessed passive network elements are towers as these are the supporting structures for radio base stations (in 2G networks, or equivalently NodeB in 3G networks and eNodeB in 4G networks). Furthermore it is often the case that a mobile network operator (**MNO**), having constructed a tower for its own purposes, has spare capacity on that tower that could be leased to another MNO.

The MACO service could also involve the sharing of and access to active network elements in the mobile operator's network. Active elements in this context are network elements other than passive elements and include mobile switching, transmission and access to network systems and services. Access to these elements (as well as passive infrastructure) enables an MVNO to supply retail mobile services without investing in its own active infrastructure. For example:

- (a) mobile access bundled with wholesale mobile call origination enables an MVNO to supply retail mobile services; and/or
- (b) mobile access bundled with wholesale airtime enables the resale of retail mobile services.

Call origination from mobile networks is generally regarded as an indirect access service because it is conditional on selection or pre-selection by the subscribers in question. The services involved are known generally as call selection and carrier pre-selection. In each case the relevant mobile network subscriber must make a choice before the service can be activated. From the perspective of the access seeker the service is, therefore, an indirect access service.

A direct form of call origination can be made available to MNO through domestic roaming services. This is a network service that enables a retail customer of one MNO to use the retail mobile services of another MNO when the customer is within the latter's network coverage area and beyond the network coverage area of the first MNO. The customer will,

however, not normally be aware that the retail service is being provided by another MNO, the technical and commercial arrangements being sorted by way of a wholesale service agreement.

NICTA considers that the relevant wholesale market includes all of those alternative means for supplying MACO services (together with any other alternatives not mentioned but which are technically feasible). This is because from a supply-side perspective, a supplier of any one of those services could commence supply of any of the other listed services with relative ease (assuming sufficient capacity). Further, from a demand-side perspective, each of the listed services is a means of supplying retail customers with an equivalent retail service.

Indeed from the perspective of a retail customer, mobile telephony is fundamentally the same service whether it is supplied by a vertically integrated MNO or by a service provider that is utilising one of the alternative means of obtaining wholesale MACO services identified.

7.1.2 Competition assessment

At the time of preparing the Discussion Paper, NICTA was not aware of any MACO services being offered or supplied in PNG. The MNOs are free to offer MACO services on a commercial basis, but, with the exception of the case raised by KTH in its submission, have not done so. That case involves the sharing of telecommunications tower capacity between Bmobile and Telikom, who are separate operator licensees but within the same group of companies.

The level of competition in the mobile sector was assessed when the prospect of declarations for relevant wholesale services was last considered by NICTA in 2014. Little has changed since then other than the market power (based on market share) possessed by Digicel has increased even further. In the Discussion Paper NICTA noted that Bmobile and Telikom had embarked on a substantial tower building operation which could be the basis of a more competitive presence in the market in future. As well, the Government has determined to restructure its telecommunications businesses and to rationalise the provision of retail mobile services through Bmobile. This move is intended to have positive outcomes for competitiveness and commercial results of the KTH group.

7.1.3 Wholesale services for potential declaration

The lack of change in market structure and market shares in the absence of an earlier (2014) declaration is ambiguous. NICTA cannot conclude that the outcome would have been different if MACO services had been declared in 2014 or if they will be different in the future if there is a declaration now.

On balance, NICTA proposed in the Discussion Paper to consider the potential declaration of facilities access services associated with passive mobile network facilities; i.e. mobile tower sharing services. NICTA is aware of unmet demand for such wholesale services. In contrast, NICTA is not aware of any demand for any of the other MACO services. The Discussion Paper proceeded on the basis of considering whether tower access services met the declaration criteria in the Act.

7.1.4 Competition objective

The competition objective in section 128 (b) of the Act involves the following criteria for the declaration of a service:

“(i) access or increased access to the wholesale service (as a consequence of declaration) is necessary for the promotion of effective competition in at least one market other than the market for the wholesale service; and

“(ii) the wholesale service is supplied in whole or in part via a facility that cannot feasibly be substituted, as a matter of commercial reality, via another facility in order to supply that wholesale service...”

In relation to (i) above NICTA argued in the Discussion Paper that although competition in the obvious related market, the retail market for mobile services, might be assisted in ways other than declaring tower access services, those other ways have not had that effect so far. One such alternative would be the development of more sites by network operators. This has occurred, but competition remains ineffective and Digicel remains very dominant in the retail mobile services market. That raises the question whether any one change to the market situation, such as declaration of tower access services could be regarded as necessary. The matter is not without doubt, but in the Discussion Paper NICTA concluded, on balance, that the criterion was met.

In relation to (ii) above, the viability of other facilities (or “another facility”, to use the term in the Act) being used to supply the wholesale service – that is tower access – varies between urban areas of high demand and rural and remote areas of low demand. In the former replication of towers by different MNOs is viable; in the latter it is often not. On balance NICTA concluded in the Discussion Paper that the criterion was met.

7.1.5 Efficiency objective

NICTA recorded its satisfaction in the Discussion Paper that the declaration of tower sharing would be feasible and avoid duplication of investment.

Access or increased access to the wholesale service is technically feasible having regard to the technology available, the costs involved, and the effect of supply on the integrity, operation and performance of other ICT services and facilities. Tower sharing is undoubtedly feasible as has been demonstrated in many countries over many years. The technologies for tower construction and mounting of equipment that are employed in PNG are the same as elsewhere in the world.

Increased access to the wholesale service would avoid inefficient replication of underlying facilities that may be efficiently shared. There are many remote areas of low population density in which replication of investment in towers would be inefficient, and where service providers could potentially share tower facilities, as has been practised in many other countries.

NICTA concluded that declaration of tower access services would not materially compromise the incentives for efficient investment in competitive mobile network infrastructure. If duplicate mobile infrastructure is commercially feasible then this will provide the deepest and most sustainable form of competition in the industry. NICTA considers that the commercial terms for tower sharing should give the access provider an adequate risk-adjusted return on its investment, so that the possibility of tower sharing could act as an incentive for operators to deploy new towers in previously unserved areas.

7.1.6 Proposal

NICTA concluded in the Discussion Paper that:

- (a) there is a national MACO market and that Digicel has a position of substantial market power in that market; and
- (b) on the balance of the available evidence, the declaration of mobile tower sharing services in that MACO market would, on balance, satisfy the declaration criteria.

7.2 Consideration of matters raised in Submissions

The submissions from KTH and ICCC supported the proposed declaration of tower access service. The submission from Digicel did not. NICTA has carefully considered the matters raised by Digicel in its submission and has addressed each of them in the response to comments included in Annex A to this report.

In broad terms Digicel has put three main lines of argument for its views in its first round submission:

- (1) that information basis on which NICTA is operating, especially in relation to demand, is insufficient for NICTA to recommend a declaration;
- (2) that the Discussion Paper suggests a level of uncertainty by NICTA, and that should preclude a recommendation by NICTA for a declaration; and
- (3) that a range of issues need to be determined before a declaration could or should be made, such as whether access providers would need to design and build towers with additional capacity for wholesale access that might be sought, and whether the current needs of access seekers for tower capacity should prevail over the future needs of access providers.

In relation to (1), NICTA considers that there is a level of demand but there are no arrangements in place to systematically record applications for tower sharing. Nevertheless there is evidence of demand as confirmed in the submission from KTH.

In relation to (2), NICTA disagrees that there has to be a level of complete certainty as suggested by Digicel. The Act does not require that level of certainty for a declaration, whether expressly or implicitly. In matters of economic assessment evidence might be ambiguous or might need to be weighed against evidence that points towards an opposite conclusion. The Act, at section 129(1) requires only that NICTA should be satisfied that all of the declaration criteria would be met by the declaration.

In relation to (3), NICTA notes the point being made, but does not regard these issues as novel or without solutions. They are matters to be considered when developing the service specific pricing principles required for a declared service under section 135 of the Act. Many other jurisdictions have addressed these issues with various solutions and levels of success. Those approaches are available for guidance to PNG should the service be declared.

Digicel has also made the point that the Act proceeds on the basis that commercial and market forces should be given an opportunity of fulfilling the objectives for the sector in the Act if they are capable of doing so, and should be fully considered before regulatory intervention is pursued. Indeed this is the underlying policy preference expressed throughout the Act. Precisely how it might be taken into account in relation to any specific issue is a matter that needs to be considered in the context and the circumstances in which each issue arises. In the case of access to towers, there is some evidence that sharing arrangements that have been arrived at by commercial negotiation are more robust and effective than some

attempts to impose mandatory access in a range of diverse circumstances. This consideration does not directly impact on whether the criteria for declaration of tower sharing services are met or not. It does, however, encourage NICTA to ensure that there has been every opportunity for good faith negotiation on a commercial basis between intending access seekers and potential access providers.

The first round response from KTH and the second round response from Digicel suggests that different views are held on the course of recent attempts at commercial negotiation.

7.3 Public Inquiry Report Findings

The issues raised by Digicel are arguable and do not compel the conclusion that Digicel advocates. However, NICTA has reconsidered its findings and now concludes that the case for declaration of tower access services is not compelling at this time. It would be better to establish a basis for effectively monitoring the market and reconsidering the matter of potential declaration again in future. This approach would include establishing a record-keeping obligation to ensure that information on applications made and received is recorded by the relevant network operators, and is available to inform a future review.

NICTA now plans to monitor and, if required, facilitate further negotiation for a further period of 12 months, after which NICTA will make a further decision to review the circumstances that might warrant declaration of tower sharing services at that time. A new Public Inquiry will be initiated then if considered to be warranted.

8 Findings in relation to the market for wholesale fixed access and call origination services

8.1 Discussion Paper coverage

8.1.1 Relevant Market

The market for wholesale fixed access and call origination (**FACO**) services is analogous in its scope to the MACO market (the wholesale mobile access and call origination market considered in the previous section of this report). The various services that are typically considered to be components of the market, or separate sub-markets, generally comprise services that enable an access seeker to have access to the subscriber base of a fixed network operator, whether directly or indirectly.

Direct access services include the sharing of and access to ducts and dark fibre in the access provider's network, unbundled local loops (**ULL**), and wholesale line rental (**WLR**). In the case of access to the broadband capacity of fibre systems in the trunk or backbone networks, this is usually regarded as part of the market for wholesale broadband capacity (considered in the next section of this report) and not part of the fixed access and call origination market.

Call origination from fixed networks is generally regarded as an indirect access service because it is conditional on selection or pre-selection by the calling subscribers involved. The services involved are known generally as call selection and carrier pre-selection (**CS/CPS**). In each case the relevant fixed network subscriber must make a choice before the service can be activated. From the perspective of the access seeker the service is, therefore, an indirect access service.

The various services that are typically considered to be part of the FACO market are not substitutes for each other from a demand-side perspective, even though they often serve the same general purpose, namely, to enable the access seeker to have access to the subscriber base of a fixed network operator. For example, while there may be some level of substitution between ULL service and WLR, neither can be considered an adequate substitute for carrier preselection or call selection or access to ducts. There are levels of overlap between the various services falling short of the full or substantial substitutability that would enable them to be considered to be in the same market. Therefore NICTA's analysis in the Discussion Paper proceeded on the basis that each of the services mentioned constitutes a sub-market of the FACO market, and the latter is best considered to be a collection of such sub-markets, all serving a common purpose.

8.1.2 Competition assessment

KTH owns and operates the fixed wireline network in PNG. Local loops are part of its fixed network, the coverage of which is limited to Port Moresby and a limited number of other urban areas within PNG. Consequently KTH is the only operator currently able to offer ULL and WLR services. KTH has some dark fibre, and is likely to be the sole operator of dark fibre on routes that it serves. DataCo has two fibre pairs on the LNG Pipeline route of approximately 700 km from the Southern Highlands to near Port Moresby, and access to fibres on the OPGW system of PNG Power Limited. In addition DataCo has ambitious plans

to construct additional fibre systems, but has not been able to proceed with these plans because of funding constraints to date.

KTH has access to duct systems that it has installed on legacy and other easements and rights of way. It is open to other licensed operators to purchase easements and to establish their own duct systems should they wish to do so. Other duct system needs, should they exist, may not necessarily be in locations served by the KTH duct systems.

From the information available to it, NICTA understands that there is no sharing of or access to the passive fixed network infrastructure controlled by KTH and DataCo. Digicel utilises microwave and satellite links for core transmission within its network. Independent ISPs use wireless technologies or leased service capacity to link the sites that they use for service provision.

Therefore NICTA has concluded that KTH and its group operating companies have substantial power in the market under consideration.

8.1.3 Wholesale services for potential declaration

There are many potential wholesale services in the FACO market that could be considered for declaration. Those considered by NICTA in the Discussion Paper were:

- (a) Access to ducts
- (b) Access to dark fibre
- (c) ULL
- (d) WLR
- (e) CS/CPS

8.1.4 Competition objective and efficiency objective – assessment of each service against the declaration criteria

(a) Access to ducts

It is technically feasible for access to ducts to be provided via a wholesale service declaration. There are too many instances of duct sharing in other jurisdictions to doubt that similar arrangements might not be equally feasible, technically, in PNG. The legitimate commercial interests of the duct provider may be reasonably safeguarded by establishing regulated wholesale pricing that appropriately reflects the risk-adjusted costs associated with operating a duct system in various locations and of being the first-in provider. In many locations it would not be economically efficient for multiple duct systems to be established on the same or very similar routes and therefore the economies of scale and scope through improved utilisation of a single system are considered to be substantial in such circumstances. The prospect of recouping some of the cost of a duct system through wholesale sales is not considered to pose risks to or disincentives for necessary investment.

However the opportunity for wholesale sharing of ducts is available at present and licensed operators may make their own commercial arrangements for sharing where it is perceived to be in their mutual interest to do so. NICTA is not aware of any such arrangements to date, nor has any advice been received of requests for sharing having been denied.

The duct system controlled by Telikom is limited to particular areas within Port Moresby and other urban centres. The fixed network extends to only approximately 150,000 subscribers

for the whole of the country and it is likely that the duct system serving these limited local access networks are sub-scale for the purposes of sharing by other licensed operators.

All licensed operators may make direct arrangements with landowners and operators of other public infrastructure and utilities, such as road authorities, power authorities, and so on, to create easements on a commercial basis for the purpose of installing ducting systems. In some locations such a self-service approach may be the most feasible option.

Given the manner in which competition is playing out across the telecommunications sector generally in PNG, with emphasis on mobile and broadband services, and the non-reliance on access to other operator' duct systems to date, in a practical sense it is inappropriate that access to ducts should be regarded as "necessary for the promotion of effective competition in at least one other market than the market for the wholesale service" (section 128(b)(i) of the Act)

(b) Access to dark fibre

Access to dark fibre involves access to fibres or fibre pairs that have not been activated electronically – hence 'dark fibre'. This is to be contrasted with access to broadband capacity provided by the use of fibre transmission. Access to dark fibre and is a form of facility access.

The policy of the PNG Government has been to establish DataCo as a State Owned Enterprise to accumulate and make available for sale at a wholesale level the on-shore fibre assets of government, including the LNP Pipeline fibre communications. This approach does not prevent private investment by other operators in fibre links or fibre systems.

Until recently DataCo listed access to dark fibre amongst its service offerings. However, while it may be open for DataCo to agree to provide access to dark fibre there is currently no basis on which it must do so.

In terms of the criteria in section 124(2) of the Act, it is technically feasible to enable access to dark fibres. DataCo's past offering was and is evidence that it considered the service to be technically feasible. This approach has been permitted and operating in many other countries for years, without interference to the operation or performance of other ICT services provided by the fibre systems involved.

Thus in terms of the criteria relating to the efficiency objective in section 128(c) of the Act:

- (a) it is unclear whether or not a declaration of dark fibre access would materially compromise the incentives for efficient investment in any facility over which the service might be supplied;
- (b) wholesale access to dark fibre is technically feasible; and
- (c) access to dark fibre would avoid inefficient replication of some underlying facilities, although the risk of such replication would be equally reduced or removed by the declaration of broadband capacity services on such routes.

In terms of the competition objective criteria set out in section 128(b) of the Act access to dark fibre is not necessary for the promotion of effective competition in other markets for ICT services because the same results could be achieved through the non-discriminatory supply of broadband capacity (which is separately examined in the next section of this report).

(c) Unbundled Local Loop (ULL)

Access to ULL involves wholesale access to the physical (copper) connection between the subscriber's premises and a network node of the access provider's network thereby enabling the access seeker to deliver a service to that subscriber. Typically this is from the local exchange to the subscriber's premises.

The fixed local access networks in PNG are very small when compared to the reach of cellular mobile and other wireless systems. There are estimated to be 150,000 PSTN services as at 31 December 2015 (ITU Yearbook 2016), compared to over 3.2 million cellular mobile services.

In terms of the efficiency objective criteria at section 124(2) of the Act, it is well established in other jurisdictions how ULL access may be provided technically. However the costs of establishing a system of access to such a small population may well be excessive on a per unit basis. The costs of planning and system management would need to be recovered over a small population of services. NICTA is not aware of any requests for ULL access by other PNG operators to this point and considers that such requests might become increasingly less likely in the future as wireless and fibre technologies replace copper cables.

In terms of the criteria relating to the efficiency objective in section 128(c) of the Act:

- (a) the small market for PSTN services in PNG, suggests that fragmentation of the market through ULL access remains a likely outcome with attendant risks to the incentives for further investment by KTH as the access provider;
- (b) access is technically feasible, but the costs may well be excessive on a per unit basis; and
- (c) access to the ULL facility would theoretically avoid inefficient replication of underlying facilities that may be efficiently shared. In this regard it is considered very unlikely that another operator would seek to replicate the fixed copper network or to use the technologies of the PSTN to replicate the service. Fixed wireless solutions are far more likely to continue to be adopted to provide an equivalent service in the future, as they have been in the recent past.

In terms of the competition objective criteria in section 128(b) of the Act:

- (a) The most immediate other market that would be affected by declaration of ULL access would be the market for the provision of PSTN services (and the delivery of both voice and data services by an alternative operator). In practice in other countries where ULL has been mandated, ULL services are seldom used to replicate only the voice and narrowband services provided under PSTN conditions. The most common use for ULL access services is to provide xDSL solutions for delivery of broadband data services. The demand for such access services is unknown in PNG, but is likely to be limited or non-existent given the mass adoption of cellular mobile services for personal and business communication, including broadband capacity. No evidence available to NICTA suggests that there is any backlog of unmet demand for such wholesale services. Consequently it would seem that ULL access is not necessary for the provision of retail voice and broadband services on an effectively competitive basis in PNG, and there appear to be no other markets in PNG in which effective competition is dependent on a declaration of ULL access.
- (b) The wholesale ULL service is supplied via a facility (the copper-based local access network) that cannot feasibly be substituted as a matter of commercial reality

via another facility. As already noted, no alternative operator would be likely to seek in 2018 to replicate the PSTN local access network. Alternative access arrangements based on wireless technologies would be considered instead.

(d) Wholesale Line Rental (WLR)

WLR involves the rental of a subscriber line to another operator so that the other operator can provide the PSTN rental service at a retail level. Amongst the possible reasons why the other operator may wish to do this, is to be able to provide a full suite of services in a packaged or bundled manner to the retail customer, and to meet expectations of retail customers preferring a single source of supply for all of their telecommunications service requirements. (However no other operator made this argument in their submissions on the matter.)

The provision of WLR is technically feasible. It involves no more than recognition that a specific subscriber line or set of subscriber lines has been leased to another licensed operator for on-selling to that operator's end customer.

In terms of the criteria at section 128(c) of the Act:

(a) declaration of WLR would not materially compromise the incentives for investment in any facility over which the service might be supplied. Declaration does not mean that the WLR service is offered at below cost or at charges that do not include a suitable return. The history of subscription services under monopoly conditions has been that the costs of rental of subscriber lines has been subsidised by the revenues from call charges. However, the need to compete with mobile calls has in most countries resulted in the cross-subsidy arrangements being substantially or completely unwound. Consequently, the subscriber line service may now be treated as a stand-alone service at both retail and wholesale levels.

(b) access or increased access to WLR, if declared, is technically feasible for the reasons already mentioned. The service has been declared in many other jurisdictions where no issue of technical feasibility remains. The same would apply in PNG.

(c) WLR is not a facilities access service, but declaration will avoid the inefficiency involved if alternative facilities were required to be developed to replicate the service.

In terms of the competition objective criteria at section 128(b) of the Act, access or increased access to WLR, as a consequence of declaration, could be necessary for the promotion of effective competition in the market for retail line rental. However this would only be important if other licensed operators are to be able to replicate the bundles being offered by the access provider –Telikom in this case.

The WLR service is supplied in whole or in part via a facility - namely the local access networks operated by Telikom - that cannot feasibly be substituted, as a matter of commercial reality, via another facility in order to supply WLR service. It would not be commercially or economically feasible for another licensed operator to replicate Telikom's local access network in any area for the purpose of supplying a service equivalent to WLR. The economies of scale for fixed access services extend across the whole of the demand, and therefore to fragment that demand is not commercially realistic in most situations.

However, there is no evidence available to NICTA of a demand for bundled services in which fixed access is a component, or of wholesale demand from operators seeking to test whether there is any such retail demand.

(e) Call Selection and Carrier Pre-selection (CS/CPS)

The Minister, acting on NICTA's recommendation, may require the implementation of preselection under Part IX of the Act (specifically section 188). That is a separate process to the potential declaration of CS/CPS under Part VI of the Act and would be based in different decision criteria. As section 188 of the Act envisages NICTA giving consideration to the potential implementation of pre-selection on cost/benefit grounds.

NICTA does not believe that formal consideration of the introduction of pre-selection—either by way of a declared service under Part VI of the Act or a rule-making in accordance with section 188 of the Act—is warranted at this time, or is likely to be warranted in future.

Call selection (**CS**) is a service that enables an end user to dial a code to route a call via a particular network operator, rather than the more normal situation where calls are routed over the network to which the subscriber line service is directly connected. When available, CS is a service used on a call by call basis and relies on exchange-based number analysis of the short codes being used to effect the selection.

Carrier Pre-selection (**CPS**) is a service that enables a standing subscriber preference to be put into effect for call services to be taken from a licensed operator other than the operator supplying the retail access service. Business customers with large outward calling volumes, particularly over long distance national and international routes, may have Private Branch Exchange (**PBX**) equipment that can be programmed for the pre-selection of leased cost routing arrangements based on destination and time of day. The data is included in matrices that are input into the PBX software, and which would be updated for changes in prices from time to time. Individual fixed line customers do not have PBXs or the facility to establish in their own customer equipment least cost routing arrangements. These customers might therefore rely on a CPS facility, if offered, by the provider of their subscription service which is realised through software amendments in the local telephone exchange that serves the customer.

In terms of the efficiency objective criteria in section 128(c) of the Act, declaration of CS and/or CPS would not materially compromise the incentives for efficient investment in any facility over which the wholesale service may be supplied. In the past, prior to substantial unwinding of the cross subsidy provided by call revenues to the cost of subscriber line services, there would have been justification for CS/CPS. However, the competition provided by mobile services for outbound calls, and the subsequent substantial impact of fixed-to-mobile call substitution, have resulted in many more options for accessing cheaper calls. Declaration of CS/CPS would at best be marginal in terms of any impact on investment incentives, and, most likely, irrelevant.

Access or increased access to CS/CPS is technically feasible have regard to the factors in section 124(2)(a) of the Act. Specifically, the technology available makes the service technically feasible. The technology has been available since the early 1990s, and has been used in countries such as Australia and the United Kingdom. However, the costs involved in establishing a comprehensive system of CS or of CPS for the limited market of fixed services in PNG are not considered or proven to be reasonable.

In relation to the third criteria (in section 124(a)(iii) of the Act) experience elsewhere has shown that there is no effect of supplying the CS/CPS services on the integrity or performance of other ICT services.

In terms of the competition criteria at section 128(b) of the Act, access or increased access to CS/CPS may support promotion of competition in other markets. The most obvious other market that would be affected by a CS/CPS declaration is the market for international calls. There is already some competition in this market, although how effective it is may be doubted given the high prices for outbound and inbound calling from and to PNG. Participants who are currently in the market for international call services participate on a fully integrated basis. That is, they operate the national network that delivers the subscriber service as well as the calling services to their customers. As already noted some forms of CS are available, particular to business and other multi-line customers with appropriate customer equipment, without the need for a declaration. However, the high costs of international calling are the result of many factors, including the settlement charges imposed on PNG carriers by overseas carriers such as Telstra in Australia, and the limited international capacity to and from PNG. Declaration of CS/CPS is neither necessary nor efficient for effective competition in retail international call markets.

The CS/CPS service is supplied via a facility that cannot feasibly be substituted as a matter of commercial reality via another facility. The only alternative would be to require the access seeker to build out a complete network to its proposed customers. Given the nature of fixed networks this is not economically feasible. The potential number of mobile networks in PNG is limited by spectrum allocation considerations in PNG, and this route is also economically infeasible for an operator that wants to provide a call routing option but not a full service.

8.1.5 Proposal

NICTA concluded in the Discussion Paper that:

- (a) there is a national FACO market and that KTH and its group operating companies have a position of substantial market power in that market; and
- (b) no potential wholesale services in that market (or its sub-markets) warrant being considered against the declaration criteria at this time.

NICTA proposed in the Discussion Paper not to recommend declaration of any of the following wholesale services in that market:

- (a) Access to ducts;
- (b) Access to dark fibre;
- (c) ULL;
- (d) WLR; and
- (e) CS/CPS

8.2 Consideration of matters raised in Submissions

With the exception of access to dark fibre, discussed below, no respondent disagreed with the proposal in the Discussion Paper not to recommend declaration of any FACO market wholesale services.

Only the submission from the ICCC proposed declaration of access to dark fibre, or, as an alternative, that NICTA should require that sufficient fibre be lit (or activated) to ensure adequate capacity services were available at all times.

NICTA gave careful consideration to this proposal, particularly given the dominant position of KTH and its group operating companies in the markets for national fibre and backhaul services. In the event NICTA considers that the market is being developed and should at present be monitored with a view to revisiting the issue of declaration of dark fibre if circumstances warrant in future.

8.3 Public Inquiry Report Findings

NICTA finds that the situation described in the Discussion Paper and the proposals not to recommend declaration of wholesale services in the FACO market remain sound. NICTA affirms the proposed approach in the Discussion Paper.

9 Findings in relation to the market for wholesale broadband capacity

9.1 Discussion Paper coverage

9.1.1 Relevant Market

The market is for the provision of wholesale broadband capacity services which involve conveyance of high speed internet traffic to a point of presence for handover to an Internet Service Provider (*ISP*). This wholesale service is commonly known as “bitstream” or “bitstream access”.

Wholesale broadband capacity services include the provision of broadband capacity using a range of technologies, such as optic fibre, satellite and microwave. For the purposes of the Discussion Paper NICTA was only concerned with fibre-based capacity. Fibre technology is able to provide much greater capacity and data speeds than the other technologies mentioned, and at the wholesale level they are only partial substitutes. Importantly, satellite and microwave capacity can be installed in manageable increments, and are economic to replicate. In addition they are capable of relocation at affordable cost, which may not be an option for fibre which is buried or attached to fixed aerial supporting infrastructure (such as tower lines).

9.1.2 Competition assessment

In accordance with Government policy Telikom, DataCo and Bmobile (collectively, KTH) have been consolidated for improved efficiency and commercial effectiveness in the provision of wholesale and retail services, with DataCo being the single source of wholesale broadband capacity within the group. DataCo has control and management of the majority of fibre assets in the country, and hence has substantial power in the relevant wholesale capacity services market.

The Government’s policy does not prevent the ownership and utilisation of fibre systems and other broadband assets by private sector licensees, such as Digicel. However the costs of replicating fibre and other broadband links to international gateways is high, and may not be economically efficient if fibre capacity is made available on fair and reasonable wholesale terms. Further, as data communication needs and as data traffic increase the current transmission systems will need to be replaced. For example, Digicel relies heavily on microwave for its backbone network transmission. Microwave systems have increased in capacity over the years, but the likely increases in data traffic that will accompany further rollout of 3G and LTE mobile networks, together with improved high speed internet capacity in submarine cable networks will demand that fibre replace radiocommunications as the primary means of backbone network transmission.

9.1.3 Wholesale services for potential declaration

NICTA proposed in the Discussion Paper that consideration be given to the declaration of a wholesale broadband service limited to wholesale broadband capacity from fibre systems — a technological limitation — because as a practical matter the use of the declaration to gain mandatory wholesale access will be limited to broadband services provided by such systems. Access seekers will typically need much more capacity than they can obtain from

services based on other technologies — and may already have access to such sources of capacity already — at charges that are becoming increasingly prohibitive for competition in retail markets.

9.1.4 Competition objective

Access or increased access to wholesale broadband services as a consequence of declaration is necessary for effective competition in retail broadband service markets, both fixed and mobile. If only one of the vertically-integrated operator groups in PNG has access to existing fibre systems with the capacity to carry the expected substantial increases in data traffic in the near future, then other operators will be forced to replicate the investment, or become less competitive. There is every reason to doubt that, absent a declaration, whether a wholesale broadband market with fair and reasonable access (including price) terms will develop in PNG – especially given that such developments have generally not occurred in other countries.

The wholesale broadband service is supplied on fibre systems that cannot feasibly be substituted by microwave, satellite or other alternative systems that, comparatively speaking, are severely capacity constrained and which are, as a matter of commercial reality, not substitutable, given the increasing cost differential for each unit of broadband capacity.

9.1.5 Efficiency objective

The economically efficient use of and economically efficient investment in fibre systems will be promoted by the declaration of wholesale broadband capacity. Fibre systems are capital intensive services that have capacity that is potentially limited only by the capacity of terminal electronics, which have been subject to rapid technological development over the past 30 years. There is no reason for duplication of fibre systems other than for security and diversity, but the meshed nature of such systems enables these requirements to be largely met within single systems.

Therefore, to impose mandatory access requirements on fibre system operators to provide access to broadband capacity will enable other network operators to have broadband capacity without the need to construct their own separate networks. Wholesale access will enable the sector to avoid inefficient investment into unnecessary duplicated systems.

Wholesale broadband capacity services are well established in many other countries at reasonable cost, and without adversely affecting the integrity, operation or performance of other ICT services provided by other operators in the same way. It is clearly technically feasible to provide such wholesale services.

The commercial interest of access providers such as DataCo, which has a wholesale mandate from the PNG Government, will necessarily be enhanced, because its business case rests upon exploiting economies of scale and scope in the provision of wholesale broadband to provide such services efficiently on a national basis. Declaration of wholesale broadband services, far from compromising the incentives for investment, is fully consistent with sustaining investment incentives.

9.1.6 Proposal

NICTA concluded in the Discussion Paper that:

- (a) there is a national market for wholesale broadband capacity services and that DataCo has a position of substantial market power in that market; and

(b) the declaration of the wholesale broadband capacity service provided over optic fibre cable systems would satisfy the declaration criteria.

9.2 Consideration of matters raised in Submissions

Digicel and the ICCC agreed with the proposal in the Discussion Paper that an optic fibre based wholesale broadband capacity service should be declared. KTH did not agree.

The main arguments put forward by KTH were:

- (1) That such a declaration would be premature, and that that threat of ex-post intervention by the ICCC would be a sufficient constraint on DataCo;
- (2) That the legitimate commercial interests and incentives for investments in broadband capacity systems would be compromised;
- (3) That any form of price regulation could not adequately recognise or value a 'call option' to delay irreversible investment due to uncertainty (based on real option theory from Dixit & Pindyck, *Investment under Uncertainty*, 1994); and
- (4) If regulated, "the brutal fact remains that KTH will probably not invest in the national submarine cable system" (the 'coastal' system).

In relation to (1) above, it is important to note that the ICCC supports the proposal and has noted that ex-post intervention by competition authorities can be delayed and therefore of less effect than appropriate ex-ante regulation. In addition the regulation of wholesale services provided by national and submarine fibre cable systems is well-established and no further maturity of the market either in PNG or generally is required for this to be effective.

In relation to (2) above, KTH has not provided any indication of how the interests and incentives might be diminished by declaration of the service. This is important because the relevant service specific pricing principles have yet to be developed. If there is a declaration then these principles will be developed with involvement and participation from KTH and other stakeholders, and can address any substantive issues that KTH might have.

In relation to (3) above, the same response (as for (2) above) applies. NICTA agrees that there are risks and uncertainties associated with infrastructure investments such as the proposed national submarine (coastal) cable system. Declaration of the wholesale broadband capacity service, including services from the coastal cable infrastructure, will not add to those uncertainties and should provide a level of regulatory certainty that is not currently present.

In relation to (4) above, , a more recent public media statement from KTH announced that the national submarine cable project was proceeding. Whether KTH will or will not invest in the national submarine cable system will depend on many factors, some of which are likely to be at least as important for the decision than regulation. Those factors include the commercial and business case for the cable and the availability and timing of funds. It appears from the media statement that KTH has decided to proceed irrespective of regulation.

More details on the issues and arguments raised by KTH together with NICTA's responses are set out in Annex A to this report.

9.3 Public Inquiry Report Findings

NICTA has given careful consideration to the submissions received from stakeholders and finds that the situation described in the Discussion Paper and the proposal to declare a wholesale broadband capacity service based on optic fibre transmission systems remains sound and would meet the declaration criteria in the Act. NICTA affirms the proposed approach in the Discussion Paper.

10 Findings in relation to the market for wholesale leased lines services

10.1 Discussion Paper coverage

10.1.1 Relevant Market

Wholesale leased line services are dedicated services between two network locations or between a network location and customer premises that are provided by a wholesale operator to a retail operator. They are used to complete the provision of a retail telecommunications service by the retail operator to its end-customer, almost always a business or government end customer.

Typically wholesale leased lines are of two types. They may be trunk segments, between network nodes in the wholesale operator's network, or they may be terminal segments that extend between a network node in the wholesale operator's network to a point nominated by the retail operator. The latter point may be a node in the retail operator's network or at a network boundary point in the end-customer's premises. Trunk and terminal segments may be ordered separately or individually as required, depending on the transmission links that the retail operator is able to provide for itself and the leased line services it needs from a wholesale source.

KTH's website indicates that retail leased line services are available but provides no details of the technical characteristics or the terms and conditions that apply. These are no doubt available on application. KTH has not published or provided to NICTA any indication of the number and types of leased lines that it has provided to retail customers. The same applies in the case of wholesale leased lines services, if any, that may be provided.

NICTA is not aware of any level of satisfied or unsatisfied demand for wholesale leased line services in PNG. No operator has advised that they have been able or unable to acquire such services from KTH. NICTA has no records of complaints from other licensed operators that may have sought and been denied wholesale leased line services from KTH.

Based on the available evidence, NICTA is not able to conclude that there is any market at all for wholesale leased lines in PNG beyond self-supply. It is likely that service providers such as independent ISPs are taking services that incorporate non-dedicated transmission characteristics, and that operators (other than KTH) are not offering retail leased line services at all or retail services that are based on wholesale leased lines.

10.1.2 Wholesale services for potential declaration

In some other countries wholesale leased lines are regulated via processes that are similar to the declaration process in PNG. In those countries the regulation may be of trunk segment or terminal segment leased lines. These distinctions would, in theory, be relevant to PNG as well.

10.1.3 Competition assessment

Wholesale leased lines can be provided on any transmission medium, whether wireless, cable or fibre. Historically they have been provided using copper cabling technologies by incumbent fixed operators. Competition assessment of the wholesale leased line market in

PNG is difficult because the market may not have developed and may never develop. Other technologies, such as managed services at both wholesale and retail levels, may well have rendered specific wholesale dedicated services of this kind as legacy services.

10.1.4 Competition objective

In the Discussion Paper NICTA stated that it is unable to be satisfied that the declaration criteria in the Act associated with the competition objection would be met in the case of wholesale leased line services. Access to wholesale leased lines is not necessary for effective competition in another market, and leased lines may be provided over a range of facilities that are open to feasible substitution.

10.1.5 Efficiency objective

The declaration criteria associated with the efficiency objective under the Act would however, likely be met by a declaration, but that in itself is insufficient for a declaration. NICTA must be satisfied that all declaration criteria would be met by a declaration.

10.1.6 Proposal

NICTA concluded in the Discussion Paper that:

- (a) there is neither a current nor potential market for wholesale leased lines in PNG;
and
- (b) declaration of a wholesale leased line service would not meet all of the declaration criteria in the Act.

10.2 Consideration of matters raised in Submissions

The submissions from KTH and Digicel agreed with the proposal in the Discussion Paper not to declare wholesale leased line services. The ICCC did not agree, and raised the following points:

- (1) There needs to be some constraint on KTH limiting the availability of capacity services but not activating fibre systems, and mandatory provision of a wholesale leased line service would fulfil that requirement; and
- (2) NICTA should not completely close the door on declaration of dedicated services just because managed capacity services are available.

In relation to (1), DataCo (the wholesale company within the KTH group) has every incentive to make capacity available for sale. Its business success depends on that. Available evidence suggests that DataCo's main challenge has been to build infrastructure rather than to activate available capacity. Nevertheless the market will be monitored and action can be taken if there is any evidence of attempts to create scarcity of the kind that the ICCC has described.

In relation to (2) above, NICTA has arrived at conclusions that it considers to be relevant to the circumstances of the market today and in the immediate future. If circumstances change then the findings will need to reflect that in future.

10.3 Public Inquiry Report Findings

NICTA has given careful consideration to the submissions received from stakeholders and finds that the situation described in the Discussion Paper and the proposal not to declare wholesale leased line services remains sound. NICTA finds that such a declaration would not meet all of the declaration criteria in the Act. NICTA affirms the proposed approach in the Discussion Paper.

Annex A: Summary of Key Comments received in Submissions

Key Comments received in First Round Submissions

Item	Submission	Issue / subject reference	Summary of comment	Summary of NICTA response
1	KTH	Fixed and mobile call termination: p 2 Inbound call termination	“KTH agrees that the definition of call termination should include inbound international calls” and agrees with NICTA this largely results from lack of competition for the termination of international calls in PNG. KTH also agrees that all call termination subject to the broader definition should be cost-based.	Noted with interest, especially given that the original interconnection agreement between Telikom and Digicel appears to have ruled out transit services associated with the termination of calls originating outside PNG. But KTH notes that this agreement has now lapsed.
2	KTH	Fixed and mobile call termination: p 2 Inbound call termination	“Digicel has flatly refused to discuss accepting inbound international calls from Telikom. Inbound calls to Digicel users are ignored unless they come directly to Digicel from the overseas carrier.”	This is a very serious matter and cannot be permitted to continue. PNG subscribers are being denied the ability to receive calls intended for them. This is not a matter that can be determined unilaterally by an operator or by agreement between operators.
3	KTH	International cable and associated gateway services: p 3	“KTH agrees that international submarine cable services and associated gateways should be declared services – even though nobody currently seeks access to unbundled access to international service.”	Noted. It is assumed from later references in its submission that KTH is referring in the second point that requirements for access to international service are associated with a requirement for the service to be accessible via domestic network carriage. Given the location of the landing station for the PPC-1 cable arrangements for transmission to and from that station are necessary. In principle however the cable capacity

Item	Submission	Issue / subject reference	Summary of comment	Summary of NICTA response
				service and the CLS access service should be considered separately and be available on an unbundled basis to other licensed network operators.
4	KTH	International cable and associated gateway services: p 3	KTH “fails to see the benefit of including access to the beach manhole” and “duct” (which holds a terrestrial cable connecting a beach manhole to a cable landing station (CLS)).	NICTA proposes to include a reference to the access required to these additional facilities associated with CLS access because of a previous situation in which a licensed network operator in PNG was refused access to these reasonably necessary facility services. The precise situation that then occurred is unlikely to recur, but extension of the service is appropriate as a reasonable precaution.
5	KTH	4. Mobile tower infrastructure: p 4	KTH notes “that there has been co-location between Telikom and bemobile/Vodafone for almost 10 years; but not with Digicel which refuses to share its towers. This refusal might be tolerable in metro areas where it is efficient to duplicate towers because the level of demand will justify it. But, in remote areas, where it is not economic to duplicate investment, there should be open access and a requirement that facilities subsidised with public funds should be built to allow sharing.”	As KTH has noted later in its submission, towers and sites funded through the UAS Fund are already subject to open funding, and no further declaration is necessary in relation to such facilities. The proposal in the Discussion Paper relates to access to other non-UAS funded towers. KTH makes a good point that towers in urban areas may be demand-justified and tower duplication may be economic in such areas. The issue has been discussed further in response to the comments from Digicel. Overall NICTA is now inclined to institute a record-keeping rule to subject the demand for tower sharing to more rigorous scrutiny and defer further consideration of a declaration for some or all non-UAS funded towers for a year or two.
6	KTH	4. Mobile tower infrastructure: p 4	“KTH believes mandated sharing should be extended to include all towers that were built using World Bank Funds, DSIP Funds, PSIP Funds and Treasury Funds. These are all in remote areas which would allow	At present only UAS funded towers are subject to open access and sharing. If the other funds referred to are channelled through the UAS Fund then they will come within that same requirement. It is open for the providers

Item	Submission	Issue / subject reference	Summary of comment	Summary of NICTA response
			competition and reduce pricing for villages.”	of these other funds to require open access directly or to require that the monies be channelled through the UAS Fund. The proposal from KTH represents a possible hallway-house position on tower sharing and access, and that will be considered when NICTA next reviews the possibility of declaring access to towers.
7	KTH	5. Fixed and mobile call origination (and leased lines): p 4	“KTH agrees that the potential declared services discussed in chapters 6 and 8 (leased lines) should not be pursued.”	Noted. It is important to note also that the proposal from NICTA not to recommend potential declarations for these services as a result of the current review does not preclude reconsideration of the situation in future.
8	KTH	6. Optical fibre domestic transmission (OFDT) services: p 5 – 6.1 what is the relevant optical market?	KTH points out that an operator licensee cannot be a wholesale customer, with access to declared wholesale services, where the only use of the service is for “that licensee’s own personal use rather than to facilitate the supply of an ICT service by that operator licensee.”	The point that KTH seeks to make is not clear. The purpose of the provision cited by KTH from the Section 4 of the Act (definition of terms) is to ensure that where services are required for own operations and not as part of another ICT services they can be accessed as retail services by an operator licensee and that an operator licensee cannot require that they be provided under wholesale terms and conditions. Also the service provider is precluded from denying access on the grounds that such services have not been declared as wholesale services under Part VI of the Act. However the discussion would only be relevant in circumstances where the transmission service was used for internal purposes and not as part of the provision of the operator licensee’s ICT services to the public. For the avoidance of any doubt, if OFDT services are acquired in order to convey traffic from a site to a switching centre, both operated by the access seeker, this is not a <i>personal</i> use, but rather a service used to facilitate provision of ICT

Item	Submission	Issue / subject reference	Summary of comment	Summary of NICTA response
				services by the access seeker.
9	KTH	6. Optical fibre domestic transmission (OFDT) services: p 5 – 6.1	In relation to the geographic dimension of market definition, KTH says that, in the case of OFDT, “there are differences in both supply and demand by geography. Telikom and DataCo segment demand by metro (sometimes local or same zone), adjacent zone ad non-adjacent zone. This reflects differences in (unknown) supply costs. OF transmission between two points of actual (or potential) interconnection is not homogenous. Costs are driven by capacity and distance.”	The costs of OFDT services are driven by capacity and distance as stated, but the pricing and zoning is not inevitable and reflects the factors that the service provider determines to be important to achieve its commercial aims. It is the extent to which the service provider is prepared to go in adopting uniform or averaged prices - for a range of reasons including convenience - that determine price structures. A range of price structures is compatible with a conclusion that the market is a national one. The concept of a national market for regulatory purposes is based on a judgment that the conditions of supply and demand and therefore of competition are sufficiently similar across the whole of the national territory for it to be considered as a single market. This is the judgment that NICTA has arrived at in the present case and it has not been refuted by the arguments put forward by KTH.
10	KTH	6. Optical fibre domestic transmission (OFDT) services: p ages 5 and 6 – 6.2 Triggers for declaration	KTH states that “nobody has been refused access to such facilities or raised concerns about the terms of access” and “In the process of restructuring KTH, the pricing of transmission capacity will be transparent and non-discriminatory.”	NICTA cannot agree that nobody has raised concerns about the terms of access. Concerns are expressed by Digicel in its submission to this review, for example. There is nothing in the restructuring of KTH per se, that guarantees transparent and non-discriminatory pricing (and other terms and conditions of supply). However service specific pricing principles shall be determined by NICTA under Section 135 of the Act in relation to declared services, and non-discrimination obligations are attached to declared services under Section 136 of the Act. These are the means of ensuring that appropriate services, that meet the declaration criteria in the Act, are

Item	Submission	Issue / subject reference	Summary of comment	Summary of NICTA response
				supplied on a transparent and non-discriminatory basis.
11	KTH	6. Optical fibre domestic transmission (OFDT) services: p 6 – 6.2 Triggers for declaration	“KTH proposes that NICTA forbears [from] declaration of OFDT while monitoring the development of that market and knowing that there is always the threat of ex–post intervention by the ICCC.”	<p>There is no point to further monitoring. The market will develop in volume but not in other ways. It is a normal transmission market the details of which are well known already. What will change in future is the need for much more substantial backhaul capacity to support the expected exponential growth rates in mobile data. This need will not be met by continued use of microwave systems and these are not an appropriate substitute – as noted by KTH in its submission at page 5.</p> <p>Ex-post intervention by the ICCC is always an option if the conditions for such intervention are met, including that the behaviour in question is anti-competitive. That is not a reason for not regulating ex-ante in the circumstances of the OFDT market in PNG. Note also in this context that the ICCC in its submission agrees with the proposed declaration, and clearly retains the power to intervene ex-post if the circumstances are appropriate.</p>
12	KTH	6. Optical fibre domestic transmission (OFDT) services: p 6 – 6.2 Triggers for declaration	KTH states that “it is extremely concerned that such ex-ante intervention would have a deleterious impact on the efficiency objection” and particularly notes, under Section 124(2) of the Act, “the legitimate commercial interests of the access provider in supplying the ICT services, including the ability of the access provider to exploit economies of scale and scope” and “the incentives for investment in the facilities by which the ICT services may be supplied, including the risks involved in making the investment.”	Although KTH notes its concerns it does not say what those concerns might be. The reference to economies of scale in the Act, cited by KTH, is important because the purpose of a declaration would be to enable greater access to and use of the facilities and therefore improve utilisation. KTH has a commercial interest in this. Better utilisation than might otherwise have occurred is positive for investment in OF domestic transmission systems.

Item	Submission	Issue / subject reference	Summary of comment	Summary of NICTA response
13	KTH	6. Optical fibre domestic transmission (OFDT) services: p 6 – 6.3 Real Options	KTH considers that a declaration and the related regulation of prices will distort investment incentives, especially in relation to the proposed “coastal fibre”. KTH is concerned that the weighted average cost of capital (WACC) that might be used to underpin price regulation does or will “not recognise that the value of a ‘call option’ to delay irreversible investment due to uncertainty.” KTH cites Dixit and Pindyck’s book, <i>Investment under Uncertainty</i> , in 1994. “The brutal fact remains that KTH will probably not invest in the national submarine cable system if it is regulated.”	KTH has not shown the nature of the link between a declaration and distortion of its incentives to invest. Nor has its submission linked the call option approach to the proposed declaration. Nor has KTH indicated what the service specific pricing principles might look like for this service, if declared. (No such principles have been proposed by NICTA as yet.) The book cited, <i>Investment under Uncertainty</i> , and the views contained therein about the irreversibility of investment and the behaviour of firms when they are investing in situations of incomplete information, do not support the conclusion that the OFDT service should not be declared. At best, the book’s message is that some care will be needed in developing appropriate service-specific pricing principles in future.
14	KTH	6. Optical fibre domestic transmission (OFDT) services: p 7 – 6.4 Second best	KTH argues that the second-best option (after no OFDT declaration at all) is to declare OFDT without the proposed national submarine (coastal) cable system. KTH also argues that declaration will result in a level of regulatory complexity that cannot be managed including the development of complex, regional cost models.	The complexity of the regulation that might be required will depend on the approach taken in the service-specific pricing principles which have not yet been developed and which are not required until up to 6 months after declaration (see Section 135(3) of the National ICT Act). NICTA believes that KTH is overstating the inevitability of complexity and has made assumptions that are unwarranted at this stage on the nature of the regulation that will result. In any case, KTH and other stakeholders will be further consulted when service-specific pricing principles are required, provided the service is declared in the first place.
15	ICCC	Wholesale capacity on and access to	(a) The ICCC supports the declaration and notes that “it is not economically viable for duplication as this will raise the costs of individual licensees; hence the	(a) Noted. The ICCC’s views on the prospects of relying on ex post intervention in these cases are most important.

Item	Submission	Issue / subject reference	Summary of comment	Summary of NICTA response
		international fibre optic submarine cables: p 1	<p>overall industry cost and the costs for consumers.” “The ICCC also agrees that ex post regulation of abuse of dominant position is normally costly; hence it is better to have ex ante control to minimise potential abuse of dominant position.”</p>	
			<p>(b) The ICCC discusses the problems associated with accessing the current cable capacity that lands in Madang because of the lack of backhaul infrastructure to transport traffic to and from Madang. The ICCC says: “NICTA should be mindful that it would be in the best interest of Kumul to slow the progress of NTN [national transmission network]; hence, if possible, the ICCC suggest that NICTA should put pressure on Kumul to complete this network rollout and make it available through this declaration, should such a declaration be made.”</p>	<p>(b) Possible regulation of backhaul or NTN capacity within PNG is discussed separately in this report in relation to a separate declaration of such services. NICTA also notes that rollout obligations have in PNG been matters for inclusion as Special Licence Conditions rather than as wholesale service declarations. The reason is that Special Licence Conditions, like rollout targets, are licensee-specific, whereas declarations and related pricing principles are not.</p>
16	ICCC	Wholesale voice call termination on individual fixed and mobile networks: p 2	<p>“The ICCC has no issues with regards to the definition of services for the purposes of this potential declaration.”</p>	Noted.
17	ICCC	Wholesale mobile access and call origination services: p 2 – mobile tower	<p>The ICCC supports the declaration of mobile tower sharing services, and considers that such a declaration will make downstream retail markets more competitive.</p>	Noted.

Item	Submission	Issue / subject reference	Summary of comment	Summary of NICTA response
		sharing		
18	ICCC	Wholesale fixed access and call originating services: pages 2 and 3	(a) The ICCC supports the proposal by NICTA <i>not</i> to declare various services in this category. However the ICCC notes that there is a “high likelihood that the access provider may leverage its market power and engage in anti-competitive conduct such as tying and/or bundling.”	(a) NICTA notes the support, and also the ICCC’s assessment of the possibilities for anti-competitive behaviour by access seekers. NICTA will monitor this and other markets and assist ICCC to take ex post action under the ICCC Act in appropriate cases that may arise.
			(b) The ICCC is concerned that not proceeding with a declaration of dark fibre could result in the access provider constraining the supply of lit fibre, and proposes a regulatory intervention to provide for sufficient lit fibre. The ICCC suggests consideration of a percentage of unlit fibre to be a trigger for a dark fibre declaration.	(b) NICTA’s experience of this market to date is that there has not been adequate investment on fibre to complete a number of routes that DataCo is tasked with developing. The problem is lack of fibre, not any refusal to light or activate available fibre. The ICCC’s comments will be kept in mind as it monitors market developments. For the present, however, there is no evidence available to NICTA that fibre capacity is being held back from the market through being unlit or non-activated.
19	ICCC	Wholesale broadband capacity: p 3	The ICCC concurs in the proposal subject to comments about dark fibre capacity referred to above.	Noted.
20	ICCC	Wholesale leased lines: p 3	The ICCC disagrees with NICTA’s proposal <i>not</i> to recommend the declaration of wholesale leased lines. The ICCC believes that “NICTA should leave open the option to reconsider a declaration decision on opening leased line capacity for new entrants and existing competitors.”	NICTA has considered the comments carefully but sees no new arguments that would impact on its proposal in the Discussion Paper. Importantly, however, a decision not to proceed with declaration at this time does not preclude a review in future, so the option that ICCC wants to leave open, is and remains open.

Item	Submission	Issue / subject reference	Summary of comment	Summary of NICTA response
21	ICCC	Other comments – re anti-competitive agreements: p 6	The ICCC notes that commercial agreement between the access provider and the access seeker on the fulfilment of non-discrimination obligations may be anti-competitive, and would in such cases be potentially in breach of the ICCC Act unless authorised by the ICCC (or possibly by NICTA).	NICTA agrees that any matters agreed on a commercial basis between competitors or potential competitors (such as an access provider and an access seeker) have the potential to be anti-competitive. This applies to the full gamut of commercial operations and not just arrangements associated with the fulfilment of non-discrimination obligations relating to declared services. The reliance in this case on commercial agreements in the first instance is that the parties may have many more matters to work through together than would occur to or be appropriate for NICTA to determine. If there are anti-competitive elements or failure to agree, NICTA's regulatory and arbitral roles may be invoked.
22	Digicel	Empirical evidence: p 3, para 6	Digicel asserts that “NICTA has not undertaken any empirical analysis to support its conclusions in relation to the relative costs and benefits of intervention” and, in the case of tower sharing, evidence of “an actual need for regulatory intervention”.	The Act does not require a cost benefit analysis as that term is understood and as might be intended by Digicel. However, NICTA has used all information reasonably available to it to inform its analysis, and the public inquiry is an opportunity for stakeholders to provide further information in their possession to enrich the analysis. Tower sharing is specifically discussed later in this report.
23	Digicel	MTAS and FTAS: p 3, para 7	(a) Digicel expresses its concern about NICTA's proposed re-declaration of mobile termination access service (MTAS) and fixed terminating access service (FTAS) “on terms that are currently subject to proceedings in the National and Supreme courts.” (b) “... NICTA appears to have relied upon a purported	(a) It is inappropriate to discuss court proceedings that are currently on-foot in this report. However, NICTA can say that it has taken legal advice on the matter. In addition there is no proposed “re-declaration”. The definition and scope of the services are different from those deemed in Section 131(1)(a) of the Act and that were in issue in 2015. (b) For the record NICTA disagrees with this view of the

Item	Submission	Issue / subject reference	Summary of comment	Summary of NICTA response
			<p>decision by the ICT Appeals Panel that was made on or about 15 May 2015. This is despite that purported decision also being before the National Court and NICTA being well aware that, at the time the purported decision was made, the ICT Appeals Panel was not properly constituted and its purported decision was made without proper jurisdiction.”</p>	<p>matter, and does not propose to use this report to argue subjudice matters. However, for the record, the proposal for the declaration of the MTAS and FTAS services that is included in the Discussion Paper does not rely on the ICT Appeals Panel decision of 2015 being valid.</p>
24	Digicel	Benefits of reduced termination charges on calls originating outside PNG: p 3, para 8	<p>(a) Digicel argues that the principal beneficiaries of reduced call termination charges for calls that originate overseas would be “overseas telecommunications operators and OTT service operators who have invested nothing in the country but would stand to pocket substantial windfall gains at the expense of Papua New Guinea and its people.”</p> <p>(b) Digicel notes that “windfall gains would be matched by reductions in investment in infrastructure in Papua New Guinea (especially in rural and remote areas) and higher prices for domestic services.”</p>	<p>(a) This is a simplistic analysis that cannot stand. The retail price of calls to PNG is kept high for overseas callers by the high termination charges involved and which are paid to Digicel and KTH (mainly Digicel) by overseas carriers. Overseas carriers will use reduced costs to reduce prices, and PNG customers will benefit from increased calling. The Digicel argument completely ignores the well-established value that customers have in receiving calls.</p> <p>(b) Digicel appears to be saying that excessive termination charges on calls originating outsider PNG are necessary for commercial investment in PNG and to contain domestic prices. Retail prices for outbound international calls are very high and that reflects the reciprocal arrangements for high terminating access between international carriers. Operator decisions about viable infrastructure investments are made on the basis of the commercial returns that they are expected to achieve, without subsidies. Retail prices in PNG are already high, and are on a declining not an increasing trend. They need no subsidy of the kind that Digicel is arguing for</p>

Item	Submission	Issue / subject reference	Summary of comment	Summary of NICTA response
25	Digicel	Other proposed declarations: pages 3 and 4, paras 9 and 10	Digicel supports the declaration of international submarine cable transmission capacity, international submarine cable gateway access and wholesale broadband capacity (on fibre optic cable) services. "The benefits of regulation of such services can readily be seen in other markets, such as Tonga where, following the regulated reductions in the cost of international submarine cable capacity, demand for capacity has exploded, increasing by more than 400% in the space of a year. This has resulted in wholesale capacity prices that are now at half their previously regulated levels."	Noted. NICTA is aware of the Tongan example, and fully concurs in the description of the benefits that have arisen as a result of regulation that is the equivalent of the declaration and pricing principles process in PNG.
26	Digicel	International Submarine Cable transmission Transition Capacity and International Submarine Cable Gateway Access Services : pages 6 -8, paras 23 - 32	In agreeing with the proposal to declare these services Digicel makes the following points, among others: (a) "... satellite capacity, upon which Digicel has been forced to rely to date, is not an effective substitute for fibre optic capacity due to its cost and quality characteristics." (para 25)	(a) This statement confirms NICTA's view that satellite services are not an effective substitute for submarine cable capacity and therefore should not be regarded as being in the same market.
			(b) "The problems that arise from the monopoly provision of fibre optic cable based capacity services are likely to be further exacerbated in Papua New Guinea, as it seems certain that these facilities and services will effectively be controlled by the entity (or entities) that are established through the consolidation	(b) NICTA does not have information on the final arrangements that are being contemplated for the operation of the existing submarine cable and CLS assets within KTH, nor of the arrangements that might apply to the prospective Coral Sea Cable. The arrangements may not have yet reached finality. The

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			of Kumul (Telikom), DataCo and bmobile (“Kumul”).” (para 26)	assumptions made here by Digicel seem to be a reasonable basis for proceeding.
			(c) Having to deal with a retail competitor “is unusual in the Pacific context where the provision of submarine fibre optic cable services is usually generally undertaken by a party that is independent from and does not compete with telecommunications service providers.” (para 28)	(c) The point is noted. There are various models reflected in practice around the Pacific. In all cases there is regulation governing the terms and conditions of service provision, broadly equivalent to the declaration process. So, without being unduly hypothetical or speculative, the proposal to declare the services in PNG is not dependent on exactly the management arrangements assumed by Digicel in (b) above.
			(d) Digicel notes that there needs to be prompt establishment of Service Specific Pricing Principles and model terms pursuant to Sections 133 and 135 of the Act to achieve early benefits and reduce the potential for delay in negotiations for access and use. (para 31)	(d) Noted and agreed.
27	Digicel	Mobile Terminating Access Service and Fixed Terminating Access Service: pages 8 – 12, paras 33 - 58	(a) Digicel states: “This would mean that the transit operator would charge an international settlement rate to the overseas network while only being required to pay the terminating network the domestic interconnection rate.” (para 33)	(a) This will be subject to the Service Specific Pricing Principles which have not been developed yet, and, when they are, will be subject to consultation with stakeholders. Digicel’s statement is premature and may turn out to be incorrect.
			(b) “NICTA has not given any consideration as to whether or not the inclusion of calls that have originated outside Papua New Guinea is permitted under the Act. This is despite that question currently being the subject of proceedings in the National Court.” (para 34)	(b) See response for item 23 above

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			(c) Digicel sets out detailed legal arguments in paras 35 – 39	(c) See response for item 23 above
			(d) Digicel argues that its investment in PNG infrastructure, including upgrading to 3G and 4G, is dependent on continuation of an exceptionally high (NICTA’s description) international settlement rate by world standard. (paras 41 – 43)	(d) This assertion is not supported by any evidence. See response (b) for item 24 above.
			(e) Digicel is concerned about the consequences “if NICTA wrongly recommends extending the scope of the DMTAS and DFTAS to include calls that have originated overseas”. (para 43)	(e) This is not what NICTA is doing. The current proposal is <u>not</u> to define the markets in terms of DFTAS and DMTAS and then extend the scope of those terms. Rather, the market has been looked at afresh and is defined differently.
			(f) Digicel claims that there are no markets in PNG that would be affected by the proposed declaration. (para 44)	(f) The markets that would clearly be affected are those for retail voice calls (because increased traffic impacts positively for both inbound and outbound calling) and the market for transit services at the wholesale level, which is currently being blocked by either a decision of KTH and Digicel, or, based on the KTH submission (see item 2 above), by unilateral decision of Digicel.
			(g) Digicel claims that NICTA has not shown that the declaration will further the achievement of the ‘economic objective’ of “promoting the economically efficient use of, and the economically efficient investment in the facilities by [which] the ICT services may be supplied in PNG”. (para 45)	(g) The impact of the declaration will be the reduction of wholesale charges and the consequential reduction of retail prices leading to increased traffic on the facilities in question. The efficient utilisation of such facilities will be improved and this will encourage further investment in capacity as needed.
			(h) “... it must be shown by NICTA that declaration ...	(h) See response (g) above. The proposed declaration

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			would not materially compromise the incentives for efficient investment in any facility over which the Declared Wholesale service may be supplied.” (para 46)	will be positive for investment through improved utilisation of relevant facilities, and therefore will not compromise the incentives for investment at all.
			(i) Digicel claims that reduction in the high termination rate for calls originating outside PNG would result in reduced investment and increased call prices for PNG consumers.	(i) See response (b) for item 24 above.
			(j) Digicel argues that “as well as being harmful to the access provider ... a declaration which includes the termination of calls that have originated outside PNG would not provide any long-term benefits to an infrastructure-based access seeker in Papua New Guinea. This is because any brief opportunities that might result from a difference between existing international settlement rates and the current domestic termination rates would quickly be eroded with the only real beneficiaries being operators domiciled outside of Papua New Guinea...” (para 48)	(j) In relation to the last point see response (a) to item 24 above. Infrastructure-based access seekers will receive opportunity to benefit from transit services being allowed and no longer being blocked by operator decisions. Also see items 2 and 3 above, which record KTH’s agreement with the proposal. As an infrastructure-based potential access seeker KTH presumably understands what might be in its longer term interest and has responded accordingly.
			(k) Digicel claims that the declaration would be contrary to the objectives of the Act, one of which is to bring benefits to the people of PNG. (para 51)	(k) It is in the interests and of benefit to the people of PNG to create settings allowing for greater amenity from services and reduction in retail prices. Maintaining very high termination rates is inconsistent with achieving that benefit.
			(l) Digicel notes that “regulating for the sake of regulatory neatness is not something that is contemplated by the Act” in asserting that NICTA is	(l) NICTA is not interested in pursuing regulation in circumstances other than where it is necessary to achieve real and practical benefits to achieve objectives

Item	Submission	Issue / subject reference	Summary of comment	Summary of NICTA response
			proposing declaration because of the technical similarity of terminating calls originating inside and outside PNG. (paras 52 and 53)	set out in the Act and where it also meets the criteria in the Act. The reason that Digicel claims for the proposal in this case is incorrect.
			(m) Digicel claims “that NICTA has erred by seeking to rely on the ICT Appeals Panel’s purported decision ... that was made on or about 15 May 2015”, and asserts that NICTA was aware at the time that the panel was not properly constituted and “its purported decision was made without proper jurisdiction”. (para 57)	(m) See response to item 23 above.
28	Digicel	Mobile Tower Sharing Service: p 13, paras 59 -67	<p>Digicel disagrees that the declaration of the tower sharing service would satisfy the criteria in the Act, and in doing so makes the following main points:</p> <p>(a) “No demand for such a service has been demonstrated by NICTA” and there has been no cogent evidence or analysis to satisfy the declaration criteria. (para 60)</p>	<p>(a) The Discussion Paper indicates that there has been no systematic recording or advice to NICTA of demand for tower sharing. However that does not support the proposition that there is no demand at all, and the comments from KTH (see items 5 and 6 above) clearly indicate that there is demand, and that insofar as Bmobile and Telikom are concerned, that demand has been addressed and satisfied commercially.</p>
			<p>(b) Digicel “notes that the Discussion Paper highlights NICTA’s uncertainty in this regard” – that is about the impact of a declaration on the promotion of <i>effective competition</i> in markets for ICT services in PNG. Digicel goes on to cite the Act at section 129 that NICTA must be satisfied that all of the declaration criteria would be</p>	<p>(b) The requirement of the Act (section 129) is clear. NICTA considers that the declaration would introduce second competitors into certain markets that are only served now by one network operator. The impact on competition would be positive, overall. However the criterion cited relates to <i>effective competition</i> which is a higher standard. At this stage NICTA has decided not to</p>

Item	Submission	Issue / subject reference	Summary of comment	Summary of NICTA response
			met by the declaration. (paras 61 and 62)	proceed with the proposal in the Discussion Paper for a declaration, but to establish a record-keeping rule requiring network operators to record (and make available to NICTA) information about access requests made and received. This will clarify the demand picture and may assist in determining if a more targeted declaration would be appropriate in the future. NICTA also considers that the procedural framework for tower access can be improved and the experience of access to UAS-funded towers (already deemed to be declared by virtue of Section 131(1)(b) of the Act) may materially assist in this respect.
			(c) Digicel appears to require that there be certainty in relation to the evidence to support any declaration.	(c) The Act requires that NICTA should be satisfied that the declaration criteria have been met. The standard is the standard of reasonableness, not of certainty (a word used by Digicel but not in relevant provisions of the Act). On potential declarations and many other issues associated with economic regulation there can be and often is evidence that is ambiguous – that is, can be interpreted in support of competing views – and also different evidence that needs to be weighed up because of inconsistency. It is very likely in this and any Discussion Paper that NICTA will include considerations that lead to different conclusions in order promote discussion on issues – that is the purpose of NICTA’s discussion papers, not single-minded and selective advocacy.
			(d) “... there can be no doubt that the regulation of	(d) The service-specific pricing principles that would

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			<p>WTS [wholesale tower sharing] would have an impact on at least Digicel's incentives to maintain or increase its investment in infrastructure in Papua New Guinea. The increased regulatory risk that would arise would simply be unacceptable, especially given the risks that are already posed by investment in rural and remote areas of Papua New Guinea." (para 65)</p>	<p>apply to a declaration of tower sharing services have yet to be developed, and all stakeholders would be involved in such a process. Precisely for that reason Digicel cannot say, on commercial grounds at least, that the impact on investment would be unacceptable. There is no indication in Digicel's submission that it has taken into account the benefits to an access provider of new wholesale revenue streams, or of the reduced risks for investment if utilisation of tower facilities has been substantially increased through sharing.</p>
			<p>(e) Tower design and future needs of the access provider. Digicel notes that operators design and build towers and related facilities for their own anticipated needs. "Regulating access to those facilities would therefore raise legitimate questions about access to existing towers or how future towers might be required to be designed. For example, would Digicel be required to provide access at the expense of its own future needs ..." (para 66)</p>	<p>(e) The issues raised by Digicel are all important and appropriate issues and if a declaration were to result, they would need to be addressed in the service specific pricing principles that are required within 6 months of any declaration. Contrary to Digicel's claim, NICTA has given thought to these matters but will not arrive at any final view until the thoughts are documented and the industry is consulted on them. As would be expected, NICTA would have regard to practice in other countries where these matters have been addressed for some time. The issues are real, but hardly new or a barrier to a declaration.</p>
29	Digicel	Wholesale Broadband Capacity Service: pages 14 and 15, paras 68 - 72	Digicel supports the proposal to declare the wholesale broadband service.	Noted.

Key Comments received in Second Round Submissions

(Note that item numbering has been continued from the previous table)

Item	Submission	Issue / subject reference	Summary of comment	Summary of NICTA response
30	ICCC	Submarine cable transmission capacity and international submarine gateway services: page 1	The ICCC affirmed that it maintained the position in its initial comments in support of the proposed declaration, based on the net economic benefits of doing so to society and to the industry.	Noted.
31	ICCC	Mobile and Fixed terminating Access Services: page 2	The ICCC noted Digicel's position in its first round submission, and confirms that it has an opposing view in relation to the declaration of both services.	Noted.
32	ICCC	Mobile Tower Sharing (MTS) Service; page 2	"The ICCC strongly believes that MTS allows competition, especially in rural areas where only one operator has its towers, and may consequently reduce end prices." The ICCC sees the arguments used to support declaration of international cable capacity as apply equally in this context. The ICCC states: "The industry would be more efficient when such key infrastructures are shared. Besides, the declaration may make [it] possible for potential new entrants to enter and use the existing infrastructures (of course at a fair and reasonable price) to provide services to end users."	The ICCC has stated the basic argument for the declaration of and mandated access to towers and other infrastructure, especially in rural and provincial areas where duplicated investment in infrastructure is not economically sustainable. As noted in this report, NICTA believes that the arguments in favour of declaration exist but are not overly compelling at this time. In consequence, NICTA proposes to monitor the situation and where appropriate to facilitate commercial negotiation between licensed operators in relation to tower sharing. The situation will be reviewed in 12 months by which time to determine the strength of any case at that time for declaration of tower access and sharing services.

33	ICCC	Wholesale Broadband Capacity Service: page 2	The ICCC concurs with Digicel in supporting the proposal in the Discussion Paper to declare this service.	Noted
34	ICCC	KTH submission: page 2	“The ICCC generally agrees and supports the joint submission of Kumul Telikom Holdings Limited, Bmobile Limited and PNG DataCo Limited. The ICCC, however, opposes the parties’ submission under Part 6, Optical Fibre domestic transmission services. The ICCC concurs with NICTA and its assessment for this service to be declared based on its reasoning in its initial comments.”	Noted.
35	Digicel	KTH’s position on fixed and mobile call termination; pages 1 and 2	Digicel notes that KTH in its first round submission has provided no “legal basis” for inclusion of inbound international calls in declarations of MTAS or FTAS, and reasserts its own position on the lawfulness of the proposed declaration. Digicel also refutes the suggestion that it has refused to discuss the issue on a commercial basis with Telikom. “...in other markets in the Pacific region, Digicel has entered into commercial arrangements which allow for the termination of inbound international calls transited via other operators. Those arrangements have been in place and operating successfully for many years now.”	Digicel’s view of its past dealings with KTH on this issue is noted. There is clearly a difference of view between the operators about the history of commercial discussions on these and other others. NICTA also notes that the successful domestic transiting arrangements for inbound international calls in other Pacific nations, referred to by Digicel (of which NICTA was already aware) indicates that such arrangements need not have many of the negative consequences feared by some, whilst at the same time helping to contain retail prices for calls. The other issues are discussed in the body of this report.
36	Digicel	KTH’s position on declaration of infrastructure services: pages 2 and 3	Digicel notes that the proposal by KTH that “all facilities aided by public funds” should be declared has a number of problems, including satisfying the declaration criteria, lack of definition of the facilities that might be covered, etc.	NICTA has considered both the proposal by KTH and the further comments by Digicel, and has decided not to pursue this broader proposal at this time. As has been noted, already, declaration of facilities funded from the UAS Fund is already deemed pursuant to Section 131 of the Act.

37	Digicel	KTH's comments on mobile tower sharing: page 3	<p>Digicel disagrees with KTH's assertion that "Digicel has refused to share its towers", and indicates that it attempted to initiate talks with Telikom in late 2017 on this matter, but that the idea was rejected,</p> <p>"Digicel remains willing to discuss sharing of infrastructure on commercial terms. However, any such discussions must be on a good faith basis ..."</p>	<p>NICTA has carefully considered the comments by both Digicel and KTH about initiatives to have commercial discussions on tower sharing and notes the differing perspectives of each. NICTA considers that there is potential for commercial arrangements in this area and that such arrangements are likely to be more effective and robust than regulated access if they can be achieved. NICTA has incorporated this conclusion into its overall approach to the issue of declaration of tower sharing in the body of this report.</p>
38	KTH	Reaffirmation of first round comments	<p>KTH reaffirmed the comments made in the first round submissions by KTH entities. KTH noted however that in relation to the declaration of access to facilities aided by public funds it had suggested another option, the declaration of national roaming. "KTH now believes that the roaming option makes the most sense."</p>	<p>NICTA notes that KTH in its submissions has not sought to assess declaration of national roaming services against the declaration criteria in the Act. NICTA considers that NICTA's own assessment of the services that would be part of a roaming service is therefore not impacted by any evidence or argument from KTH. NICTA is therefore not convinced that national roaming is a service that should be declared at this time. NICTA has no view on whether such a service might satisfy the declaration criteria in the future.</p>