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# A. SUMMARY OF PROPOSED MARKET DEFINITIONS AND DOMINANCE DESIGNATIONS

## Proposed Markets

The Regulator is now proposing, subject to the current consultation, to designate the following telecommunications services markets in Samoa:

### Retail Markets

1. The retail fixed telephony service market for the provision of narrowband access;

2. The retail market for national calls originating from both fixed and mobile services;

3. The international voice call services market for international calls originating from both fixed and mobile services;

4. The retail broadband internet market including all broadband internet access services, whether provided over fixed or mobile networks;

5. The retail mobile services market including mobile voice and mobile data services, and ancillary services typically bundled with mobile voice and data services such as mobile broadband, and bundles with these various services as components;

### Wholesale Markets

6. The wholesale voice call termination market on fixed networks with each fixed network being considered as a separate market;

7. The wholesale voice call termination market on mobile networks with each mobile network being considered as a separate market;

8. The wholesale market for broadband access at a fixed location;

9. The wholesale international internet bandwidth capacity market, comprising submarine bandwidth capacity services and cable landing station access services

A more detailed analysis of the markets appears in Section C of this paper.

## Proposed Designations of Dominance

The Regulator proposes, subject to this consultation, to designate the licensed operators in Column 2 of the table below as dominant in the markets shown in Column 1.

| Column 1 | Column 2 |
|---|---|
| **Market definition** | **Dominant service providers** |
| 1. The retail fixed telephony service market for the provision of narrowband access | Bluesky Samoa Limited |
| 2. The retail market for national calls originating from both fixed and mobile services | Bluesky Samoa Limited<br>Digicel (Samoa) Limited |
| 3. The retail market for international voice call services originating from both fixed and mobile services | Digicel (Samoa) Limited |
| 4. The retail broadband internet market including all broadband internet access services, whether provided over fixed or mobile networks | Bluesky Samoa Limited |
| 5. The retail mobile services market including services mobile voice and mobile data services, and ancillary services typically bundles with mobile voice and data services such as mobile broadband | Bluesky Samoa Limited<br>Digicel (Samoa) Limited |
| 6. The wholesale voice call termination market on fixed networks with each fixed network being considered as a separate market | Bluesky Samoa Limited<br>Digicel (Samoa) Limited |
| 7. The wholesale voice call termination market on mobile networks with each mobile network being considered as a separate market | Bluesky Samoa Limited<br>Digicel (Samoa) Limited |
| 8. The wholesale market for broadband access at a fixed location | Bluesky Samoa Limited<br>Digicel (Samoa) Limited |
| 9. The wholesale international internet bandwidth capacity market, including submarine cable bandwidth capacity services and cable landing station services | American Samoa Hawaii Cable LLC (in respect of submarine capacity services) Bluesky Samoa Limited (in respect of CLS services) |

Note that in all cases, the basis of dominance has been determined under Section 26(1) of the Act, using the 40% threshold, followed by a review to determine if one or more of the criteria for dominance relevant to the application of Section 26(2) are present that should amend the conclusion arising from the revenue market share threshold in Section 26(1). A more detailed discussion is set out in Section C of this paper.

Because of the need to preserve commercial confidentiality for all licensed operators the actual market share percentages have been deleted in Section D and replaced with the "C-in-C", which stands for commercial in confidence. In all cases where designation as dominant is proposed the replaced figure exceeds 40%.

# B: DETERMINING DOMINANCE UNDER SECTION 26(2) OF THE ACT

## 1. Is the market suitable for ex-ante regulatory intervention?

In the EU, once a relevant electronic communications market has been defined, national regulators (NRAs) apply the so-call three criteria test (3CT) to help it determine whether that market should, in principle, be subject to ex-ante regulatory intervention.

Under the 3CT a market is considered to be suitable for ex-ante regulation if:

1. the market shows high and non-transitory barriers to entry, and
2. market structures do not tend towards effective competition in a relevant time horizon; and
3. the ex-post application of competition law alone would not adequately address the market failure in a suitable timeframe.

## 2. Criterion 1: High and non-transitory barriers to entry

With respect to the first criterion, there are a number of different types of potential barriers that may prevent or impede entry into a market, and they include:

- Absolute barriers exist where certain firms own, have access to, or are granted privileged use of important assets or resources which are not similarly accessible to potential entrants.[1] For example, if important rights of way have been granted to an incumbent fixed operator, or preferred spectrum resources have been granted to an incumbent mobile operator, and the available resources for potential entrants are inferior in both cases, then absolute barriers to entry have been created. These barriers might be dismantled with difficulty, but, until then, they are effective in making later market entry extremely difficult.
- Structural barriers to entry result from original cost or demand conditions that create asymmetric conditions between existing marker participants and new entrants and thereby impede or prevent the entry of the latter. For instance, high structural barriers may be found to exist when the market is characterised by absolute cost advantages, substantial economies of scale and/or economies of scope, capacity constraints and high sunk costs.
- Legal or regulatory barriers are those that result from legislative, administrative or other government measures that have a direct effect on the conditions of entry and/or the positioning of operators on the relevant market.[2]
- Strategic barriers arise due to the strategic behaviour of existing market players, for example through pricing behaviour or through non-price behaviour (such as increased investment, promotion and distribution).[3] For instance, if in anticipation of potential

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[1]Body of European Regulators for Electronic Communications (BEREC) (2005) Revised ERG Working Paper on the SMP concept for the new regulatory framework, ERG (03) 09rev3, September 2005, p. 8

[2]Ibid

[3]BEREC (2005), op.cit. p. 8

new entry, an incumbent operator reduces prices generally or provides incentives for larger customers to take long-term service contracts, this is regarded as strategic behaviour because it changes the terms of competition and makes it harder for potential entrants to gain market traction.

Regulatory analysis tends to focus on indicators of barriers to entry that exist in the absence of any existing regulation, such as the extent of any sunk costs, the market structure, market performance and market dynamics. This will involve analysis of indicators such as market shares and trends, market prices and trends, and the extent and coverage of competing networks or infrastructure.

**Application of Criterion in Samoa:**

In all of the markets defined the demand is limited in terms of population and usage within Samoa. A relatively high proportion of potential addressable demand is currently being served by existing operators in the market. These two factors support the contention that entry barriers are high in Samoa. The history of new entrants since 2005 also supports this view. It is unlikely that the market will attract new entrants in the foreseeable future, just as it has not done since 2005.

## 3. Criterion 2: Market structures do not tend towards effective competition in a relevant time horizon

Only if a regulator considers that a market satisfies the first criterion, above, will there be a need to assess the market against the second criterion. Such analysis should examine the structural characteristics of the relevant market and consider whether such characteristics are likely to enable the market to become, or remain, effectively competitive over a forward-looking period of 2–3 years. The period of 2–3 years is considered generally appropriate given the fast changing nature of the ICT industry.

**Application of Criterion in Samoa:**

All of the identified markets are tight oligopolies and it is unlikely that the level of competiton in them is likely to become effective over the next 2-3 years. This is not to deny that there is some competition in these markets at present, or that the level of competition, reflected in changing market shares, has not improved over recent years. This is the case, for instance, in the retail mobile services market.

## 4. Criterion 3: The ex-post application of competition law alone would not adequately address the market failure in a suitable timeframe

Only if a regulator considers that a market satisfies the second criterion, above, and determines that there is no tendency towards effective competition in the forthcoming 2-3 years, will there be a need to assess the market against the third criterion.

The regulator must determine whether, given the nature of those potential problems in the market, it would be sufficient and appropriate for those problems to be addressed ex post through the application of competition law once there is evidence of anti-competitive market behaviour.

In some situations it may be that irreversible damage to competition and the interests of consumers might occur before a case can be prepared and brought to address the problem. In these circumstances ex post competition law would not provide an adequate remedy.

**Application of Criterion in Samoa:**

The OOTR has had relatively limited experience in responding to competition issues on an ex post basis. OOTR is there unable to guarantee that ex post intervention will be timely or effective, even though this would always remain the intention. In many of the markets identified anti-competitive behaviour, including behaviour resulting from abuse of a position of power in the market, would take a considerable time to be identified and for action to be proposed and taken in response. In that time, substantial damage to competition and to the interests and position of other competitors could well result. These subsytantial and high risks need to be taken into consideration in determining whether to rely entirely on ex post intervention where competition issues emerge. In situations in which the Regulator considers it appropriate to defer action until the market behaviour of a dominant operator becomes clearer, OOTR may also take that approach, so that option is not lost by designating a competitor as dominant in a market.

## 5. What does satisfaction of the 3CT mean?

Even if a regulator determines that a market fulfils all three criteria of the 3CT, it does not necessarily mean that the market is characterised by dominance. That is a matter for separate determination after considering various indicators that may, on balance, suggest that one or more competitors are dominant in the market. The 3CT test is about the suitability of ex ante regulatory intervention in a particular market; it is not the dominance analysis that is prescribed under the Act.

The Act does not specify that the Regulator should consider whether a market is suitable for ex ante regulatory intervention. However, the Act says very little about process and the criteria to be applied, and certainly does not bar the Regulator from undertaking this very useful analysis.

## 6. Criteria for Dominance

Dominance is a position of economic strength in a market. To determine whether a service provider, either individually or collectively, might have such a position it is necessary to consider the structure of the market and to assess factors that may facilitate the emergence or maintenance of such a position. The factors or criteria may differ depending on whether the dominance may be individual or whether it may be collective.

The sets of factors to be considered are set out below – the table relating to individual dominance, followed by criteria relevant to collective dominance.

## 7.1. Single firm dominance in a market

| Criterion | Implication for assessment of market dominance |
|---|---|
| 1. Market share | Market shares, taken alone, are not conclusive of dominance in a market, unless deemed so by legislation.[4] A high market share, especially in relation to the individual and combined shares of other market participants, is an important indicator that a licensee may have a substantial degree of power.<br>Where markets are emergent or growing more quickly, high market shares are less indicative of market power than in more mature or slow-growth markets. Fluctuations in market shares may also indicate a lack of substantial market power and may be evidence that competitive forces are in play.<br>Market shares may be assessed either on the basis of subscribers, sales volume or value of sales. Usually share of revenue (value of sales) is preferred[5] because subscribers are not of equal value or equal potential and most markets are multi-product with value being the only common measure that can be applied. Comparison of market shares measured by subscribers, sales volume and sales value often provides useful analytical insights. In the case of a fairly homogenous product or service, an operator that has a higher market share by value than by volume might be an indication that that operator can price above rivals and make super normal profits, which might be a sign of a substantial degree of power in a market.<br>When considering market shares, a regulator may assess the level of market concentration using the Herfindahl-Hirschman Index (HHI), which is calculated by squaring the market share of each competitor in a market and then summing the resulting numbers[6]. The HHI takes into account the relative size and distribution of the firms in a market and approaches zero when a market consists of a large number of firms of relatively equal size. In a monopoly the HHI is 10,000—the maximum index figure. The HHI increases both as the number of firms in the market decreases and as the disparity between the market shares of those firms increases. Although a HHI measure of 1,800 is commonly interpreted internationally as an indication of a highly concentrated oligopoly market structure, it is a value that derives from manufacturing industries in the United States and most regulators would consider it to be an inappropriately low threshold for telecommunications markets, which tend toward oligopoly. |
| 2. Control of infrastructure not easily duplicated | This indicator refers to a situation in which the availability of a certain infrastructure is necessary to produce a particular product or service; the required infrastructure is exclusively or overwhelmingly under control of a particular operator; and there are high and non-transitory barriers to duplicating or substituting for the infrastructure in question. In such a situation, the control of infrastructure not easily duplicated can make it feasible for the operator in question to behave independently from other suppliers and to exercise market power (in absence of significant countervailing power), as there is almost no actual or potential competition. One example is control/ownership of a large network that a competitor would find costly to build in order to provide the service in question. This would be exacerbated where the minimum capacity from the infrastructure exceeds the requirement of the competitor and would be commercially unjustified in the short to medium term. Such control may hence represent a significant barrier to entry. In addition it might be possible for the supplier to lever its market power horizontally (to adjacent markets) or vertically (to downstream markets). |
| 3. Technological advantages or | Technological advantages may represent a barrier to entry as well as an advantage over existing competitors due to lower production costs or product |

[4] As in the case of Section 26(1) of the Samoan Act
[5] As in the case of Section 26(1) of the Samoan Act
[6] The HHI is a measure of concentration and provides a result that is proportional to the average market share, weighted by market share. The logic of the squaring of individual shares is to provide a suitable weighting.

| Criterion | Implication for assessment of market dominance |
|---|---|
| superiority | differentiation. However, some technological advantages might only be temporary and may therefore not be a permanent source of market dominance. |
| 4. Absence of or low countervailing buying power | The existence of customers with a strong negotiating position, which is exercised to produce a significant impact on competition, will tend to restrict the ability of providers to act independently of their customers. Such countervailing buying power is more likely where a customer accounts for a large proportion of the producer's total output, is well informed about alternative sources of supply, is able to switch to other suppliers readily at little cost to itself, and where it may even be able to begin producing the relevant product itself. |
| 5. Easy or privileged access to capital markets/financial resources | Easy or privileged access to capital markets may represent a barrier to entry as well as an advantage over existing competitors. Aside from internal sources (e.g. as indicated by cash flow or revenue) the ability to procure outside capital, a firm's capital structure, and its ability to increase equity capital (e.g. structure of shareholders) or debt might be considered. Further, access to capital might be influenced if a firm has links with other companies (e.g. affiliated companies belonging to the same group) that are favourable for its activities in the market in question. |
| 6. Product/service diversification | Diversification is where an operator produces a range of products and/or services (which may or may not be in separate markets). When those products/services are bundled, it may make competitive entry into the supply of one or more of the products/services potentially more difficult. |
| 7. Economies of scale | Economies of scale arise when increasing production causes average costs (per unit of output) to fall. Economies of scale are common where the production process involves high fixed costs. One other way in which increasing scale can lower unit costs is by allowing greater specialisation, and in turn higher productivity. Economies of scale on their own do not create entry barriers—given a certain level of demand, technology and cost function, competitors can exhaust the same economies if they are able to produce the same volumes. However, economies of scale can de-facto amount to an entry barrier if further factors—such as sunk costs and switching costs—exist so that economies of scale create an asymmetry between one operator and its competitors. If this is the case, economies of scale can act as a barrier to entry as well as an advantage over existing competitors. |
| 8. Economies of scope | Economies of scope exist where average costs for one product are lower as a result of it being produced jointly with other products by the same operator. Cost savings may be made where common processes are used in production. Economies of scope are common where networks exist, as the capacity of the network can be shared across multiple products. Similar to economies of scale, economies of scope can be a barrier to entry as well as an advantage over existing competitors. For example, if the existence of economies of scope requires entrants to enter in more than one market simultaneously, this may require additional expertise and more capital, which may in turn mean that costs are higher to enter the market. |
| 9. Vertical integration | Vertical integration means that a firm is operating at both the wholesale and retail levels in a sector or in related markets, and this may give an advantage to the integrated firm over its competitors because control of the upstream or downstream markets may make new market entry more difficult. Vertical integration potentially creates conditions for leverage of market power from an upstream market to a downstream market due to both the incentive and ability for vertically integrated firms to limit entry into downstream markets. Further, vertically integrated multi-product operators may also have a competitive advantage over their competitors if they are in a position to bundle products in way that may either not be able to be replicated by competitors due to a lack of corresponding wholesale products, which in turn might increase the cost of entry. |
| 10. Overall size of | This refers to the potential advantages, and the sustainability of those |

| Criterion | Implication for assessment of market dominance |
|---|---|
| the firm | advantages, that may arise from the large size of one operator relative to its competitors. Areas where such advantages may exist include economies of scale, finance, purchasing, production capacities, and distribution and marketing. Such advantages may accrue in part due to other activities of the operator beyond the relevant market. |
| 11. A highly developed distribution and sales network | Well-developed distribution systems are costly to replicate and maintain, and may even be incapable of duplication. They may represent a barrier to entry as well as an advantage over existing competitors. This criterion is usually most important where the sales and distribution network is exclusive to a firm, and sales and distribution agents are not free to offer competing services. |
| 12. Barriers to expansion | There may be more active competition where there are lower barriers to growth and expansion. While growth and expansion is generally easier to achieve (particularly for new entrants) in growing markets, it might be inhibited in mature, saturated markets, where customers are already locked in with a certain supplier and have to be induced to switch. |
| 13. Ease of market entry | The threat of potential entry may prevent firms from raising prices above competitive levels, leading thereby to a situation in which no market power is exercised. However, if there are significant barriers to entry, this threat may be weak or absent. Operators may then be able to raise prices and make persistent excess profits without attracting additional competition that would reduce them again. The impact of entry barriers is likely to be greater where the market is growing slowly and is initially dominated by one large supplier, as entrants will be able to grow only by attracting customers from the dominant firm. However, barriers to entry may become less relevant where markets are associated with ongoing technological change and innovation. |
| 14. Absence of potential competition | This refers to the prospect of new competitors that are in the position to switch or extend their line of production entering the market (e.g. in response to a hypothetical price increase) within the timeframe considered by the market review. The record of past entry is one factor that can be looked at, as well as potential barriers to entry. |
| 15. Switching barriers | When considering a switch to new services in place of existing services, there are three possible cases. First, consumers will remain with current services if satisfied. Second, if not satisfied after a comparison of information, they will substitute the services in question for new services unless significant barriers exist (such as uncertainty about the quality of service and reputation of alternative suppliers). If consumers already have a considerable investment in equipment necessary for the services, are locked into long-term contracts or are concerned about disruptions and inconveniences in so doing, they will stick to current services and show inertia in the choice of services and operators. Consumers' reluctance to switch suppliers can subsequently work as a potential barrier to entry and/or expansion.<br>It is not practicable to measure switching costs directly as they are largely consumer-specific, reflecting the level of effort required by an individual and thus unable to be calculated from any data. One of the proxies for measuring switching costs in other economies is the percentage of actual switching to new service providers after receiving relevant information. If the level of consumer satisfaction drops over time but the rate of switching service providers stays relatively low, this implies a high level of switching barriers exists in the relevant market. Specific arrangements to facilitate switching need also to be considered in this context, such as number portability in telecommunications service markets. |
| 16. Excessive pricing and profitability | This refers to the ability to price at a level that keeps profits persistently and significantly above the competitive level. In a competitive market, individual firms are typically not able to maintain prices above economic costs and sustain excess profits for any appreciable time. As costs fall, prices may be expected to fall too, if competition is effective. Although the existence of prices at a level that keeps |

| Criterion | Implication for assessment of market dominance |
| --- | --- |
| | profits persistently and significantly above the competitive level is an important indicator for the existence of a substantial degree of power in a market, it is not a necessary condition for such a finding.<br>Excessive prices can be detected by an analysis of Price Cost Margins (PCM) which measure directly the deviation of prices from costs. However, although valuable from a theoretic perspective, in many cases necessary data to calculate PCM are not available at a disaggregated product or market level. In addition, the fact that in communication markets usually there are multi-product undertakings with high joint and common costs that have to be attributed to certain services may make the calculation of PCM even more difficult. |
| 17. Network effects | Network effects describe the dependence of consumer willingness to pay for a given product or service on the number of users of that product or service (i.e. on the size of the network). A product or service exhibits network effects when the utility of a user increases with the number of other users consuming it. The presence of network effects can therefore confer market power on firms with high market shares.<br>With network effects, the value of joining a particular mobile network for a new subscriber depends in part on the number of people who are already part of that network. Similarly the value of the mobile network increases for all subscribers the more people who are connected to it. This can be a source of enduring competitive advantage for larger MNOs and create the risk of markets "tipping" in their favour, particularly when there are factors that deter switching between service providers, and if on-net call prices are well below off-net call prices.<br>In telecommunications markets the requirement for operators to interconnect serves to ensure that network effects work to the betterment of all customers, irrespective of the network to which they have subscribed, rather than to the operators of the largest networks and their shareholders. |
| 18. Lack of active competition on non-price factors | There are other strategic competition parameters besides pricing. For example, such non-price factors may include marketing, service quality, service range, innovation, or geographic coverage. However, for some services, these considerations are effectively non-existent, leaving competition to be expressed in price terms or not at all. The reverse also applies – even in the absence of price competition there may be robust competition on other dimensions of service, such as service quality and reliability or service availability (coverage). |
| 19. Customers' ability to access and use information | Limited customer access to and use of reliable information on prices and other aspects of the services can dampen competition by reducing the degree to which customers act upon differences between competitors. As a result, operators are better able to act independently of customers. |
| 20. The number of buyers and sellers in a market | This criterion relates to concentration within a market. It may be relevant in determining whether there is any licensee with a substantial degree of power in a market. In general terms the more participants in a market, and the less concentrated it is, the less chance there is that the structure will sustain dominance. |
| 21. The dynamic characteristics of the market, including growth, innovation and product differentiation | In general terms, fast growing markets allow opportunities for other competitors to gain traction in markets and to develop specialisations and advantages. Innovation in terms of products and process will change the fundamental terms of a market and may provide greater opportunities for smaller or new competitors to compete effectively compared to the circumstances and opportunities in a more stable market environment. Product differentiation generally means that direct substitution is more difficult and this may also favour smaller, more agile and more creative competitors. The corollary is that stable markets with slower growth and development, and where products and services are more fungible and less differentiated, may be more prone to dominance by one or more competitors. This proposition must be treated with caution and carefully tested against the factual circumstances of particular markets being |

| Criterion | Implication for assessment of market dominance |
|---|---|
| | analysed, because exceptions abound in economic and legal literature. |

**Application of criteria to identified Samoan markets**

As noted, OOTR has applied the revenue market share criterion first when analysing markets identified in the Samoan ICT sector. In the case of each market OOTR has then examined the available information on the various factors set out in the table above. In no case has OOTR found compelling evidence to suggest that it ought to reverse the dominance designation suggested by the market share criterion. OOTR has taken account of the comments contain in public consultation submissions on this matter.

## 7.2. Collective dominance

Collective dominance occurs where two or more firms have a collective position of strength in a market such that they may pursue a common policy in a market without particular regard to the responses of other firms or of customers and consumers. If the pursuit of a common policy in the market is the result of agreement or an understanding then that is unlawful collusive behaviour and may attract criminal as well as regulatory sanctions. If the pursuit of a common policy is the result of conscious parallel behaviour, without explicit agreement between the parties, it may yet be collective dominance.

This is a contentious area of the law in most countries and regulators should proceed with exceptional caution if allegations of abuse of collective dominance are raised. However circumstances may arise where market structure creates a high risk of collective dominance that may be alleviated or otherwise addressed by ex-ante intervention by the regulator. When considering the possibility of collective dominance regulators should consider the following criteria:

(a) Transparency in the market sufficient to give competitors visibility of each other's behaviour and facilitating the development of common policies that lead to collaboration and cooperation rather than to competition between them.

(b) Typically a small number of competitors, which will facilitate cooperation and collaboration. Generally the larger the number of competitors the more difficult it will be to establish and sustain a common purpose.

(c) Market characteristics that provide incentive for collaboration or cooperation rather than competition, such as:
   i. Similar cost structures, offering no cost advantage to any competitor;
   ii. Low market growth, including market saturation, suggesting that competing on lower prices will not be offset by new customers and demand; and
   iii. Little technological change resulting in stable cost levels, stable cost relativities, low levels product and service innovation, and settled demand patterns.

(d) Other factors already mentioned in relation to single dominance that might also facilitate or impede collective dominance in a market, such as:

i. Control of infrastructure not easily duplicated, particularly associated with refusal of access to third party operators;
ii. Technological advantages or superiority, not available to third party competitors;
iii. Absence of or low countervailing buying power, which might otherwise disrupt cooperative arrangements between providers;
iv. A highly developed distribution and sales network, particularly if not available to or replicable by third party competitors;
v. Ease of market entry;
vi. Absence of potential competition;
vii. switching barriers;
viii. Excessive pricing and profitability, including the history of price competition in the relevant market;
ix. Network effects;
x. Lack of active competition on non-price factors.

(e) The existence of sanctions that could be imposed on an operator that deviates from the common purpose and that are likely to be sufficient to dissuade the operator from such deviation.

A detailed market assessment is required to determine whether the market is likely to facilitate collective dominance. The factors set out in (a), (b), (c) and (e) will generally, but not always, facilitate collective dominance. The factors in (d) will need to be individually considered to determine their impact but generally the impact would be the same as for single dominance.

**Application of criteria for collective dominance:**

OOTR recognises that the size of the market in Samoa means that there is a high level of visibility of the actions of all telecommunications operators, including transparency of the operators to each other. However, information on other factors, such as similarity of cost structures is not available to OOTR at this time. It is also not clear at this time, in advance of the development of suitable cost models, whether and, if so, to what extent, the actual and effective price levesl in various markets are above the levels that would be expected in a competitive market. OOTR is therefore unable to say that the criteria for collective dominance have been met. OOTR intends to monitor price patterns.

# C: REVIEW OF MARKET DEFINITIONS FOR SAMOA

## 1. Introduction

In this analysis the retail markets are considered first because they reflect the considerations that end-users take into account when they make decisions about their telecommunications needs and the manner in which those needs might be satisfied. This is on the demand side. Operators respond to those needs and, to some extent, contribute to shaping them.

## 2. Retail Services

The key issues for market definition is the extent to which -

- mobile and fixed telephony services may be considered to be in the same market;
- internet access services (broadband) can be considered to be part of either fixed or mobile services, or part of both markets, or a separate market entirely; and
- OTT services which compete with legacy telecommunications services can be considered to be part of various markets, particularly the market for international services.

### 2.1 Fixed Telephony Service

In the case of fixed telephony services it is necessary to need to distinguish, at least for initial analysis, between the subscriber access service and calls from a fixed location.

Typically a single operator provides access and calls as a bundled offering, even though they are often charged separately. Conceptually fixed access should be distinguished from usage. Fixed access may be used to support a range of uses other than making calls, including as a service to provide internet access or fax operation. Call services have traditionally been regarded as relatively elastic and fixed access as relatively inelastic.

Figure 1 shows the fixed and mobile services in operation in Samoa over the decade from 2005 to 2014, together with demographic data. (Data for some years is not available).

The data shows a steady decline in fixed telephone services from 2005 to 2010 at the same time as the mobile market grew rapidly following the entry of Digicel. This suggests an initial substitution of mobile for fixed services, with some stability from 2010. Thereafter fixed services have increased, primarily because of the introduction of fixed wireless technologies.

The substitution appears to have been one way. There has been no substitution of fixed for mobile. This is consistent with worldwide trends. During the period the price of mobile service has reduced relative to fixed.

The take-up of fixed services in the residential sector was never high in Samoa. The subscribers retaining fixed services today tend to be commercial premises, offices and government establishments. That may be affected by the increased use of fixed wireless delivery technologies in future. Commercial premises, offices and government establishments have fixed services that are intended to be available to persons on the premises. They are typically shared services rather than personal communications services. They differ markedly in the way they are used compared to mobile services. The fixed services that have been substituted presumably are those that had similar usage characteristics to mobile services.

*Figure 1: Samoa fixed and mobile services, 2005 - 2014*

| | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|---|---|---|---|---|---|---|---|---|---|---|
| Population | 179'928 | 181'073 | 182'240 | 183'444 | 184'704 | 186'029 | 187'429 | 188'889 | 190'372 | 191'831 |
| Households | 23'400 | 23'400 | 24'423 | 25'000 | 25'000 | 25'000 | 25'000 | 25'230 | 25'000 | 25'192 |
| Fixed Telephone Subscriptions | 19'500 | ... | ... | ... | ... | 8'000 | ... | 8'270 | 8'382 | 11'778 |
| Fixed Telephones per 100 population | 10.84 | ... | ... | ... | ... | 4.30 | ... | 4.38 | 4.40 | 6.16 |
| Mobile cellular services | 24'000 | 45'500 | 86'000 | ... | ... | 90'000 | ... | 100'302 | 99'887 | 106'524 |
| Mobile services per 100 population | 13.34 | 25.13 | 47.19 | ... | ... | 48.38 | ... | 53.10 | 52.47 | 55.53 |

*Source: ITU Yearbook (2015), p. 192*

Therefore it is reasonable to conclude that, for the purposes of the present review, telephone services at a fixed location are no longer substantially substitutable for mobile services in terms of the usage patterns of the subscribers, and therefore constitute a separate and distinct market. This is generally supported by the application of the SSNIP test, even in the absence of firm data. Although a small but significant increase in price (5-10%) would lead to some cancellations (mostly in favour of mobile), the price inelasticity of demand for fixed services, and the manner of their use on commercial and government establishments, would likely enable such a SSNIP to be profitable.

The second issue is whether the market for fixed access services should include call services as well. It can be argued that the whole point of subscribing to a telephone service is to be able to make and receive calls via that service. However, calls are charged to the caller, not the recipient, and can be as easily made on a mobile service. In addition, operators typically charge for calls separately to access because calling levels may vary widely between subscribers. On balance, therefore, it is appropriate to define the market as the market for access at a fixed point and to include calls in another, separate market.

The service is a national service, and is offered on that basis without distinction of geography by Bluesky. The customers are all retail customers.

The fixed telephony service market is thus a separate and distinct market in Samoa, and it may be defined as the provision of narrowband access on a national basis to retail customers, both residential and non-residential.

## 2.2 National Calls

National calls are available to fixed and mobile customers and are interchangeable in terms of the characteristics of the call. Whether a customer or end-user makes a call from a mobile or from a fixed location device will depend on a range of factors which have little to do with the physical characteristics and typical quality of the call. These factors include:

- relative price;
- whether the call is part of a bundle with close to zero incremental price;
- whether the called party has a mobile or a fixed service, which may also affect price;
- whether the call is work-related or personal; and
- whether a fixed service calling option is available at the location of the calling party.

It is not clear whether a SSNIP applied in relation to either fixed or mobile calls would result in a profit or loss for the operator in the supply of fixed calls or in the supply of mobile calls. The reason is that the availability of call bundles and other price/service options, such as OTT service calls, would tend to obscure or confuse the price signal that results from a price increase. Calls via OTT operators account for a growing proportion of international calls.[7] The quality may be variable but calls that are on OTT services (such as Skype, Viber and Vonage) at both ends are free to the caller, and OTT calls to national networks are usually much cheaper than PSTN or mobile network calls.

International calls are not substitutable for national calls at all, and a SSNIP applied to international calls would not result in an increase in national calls – or vice versa.

There is no specific data on the substitutability of fixed and mobile calls in Samoa. However the anecdotal evidence that such calls are largely substitutable in practice is quite strong. Most users who need to make a call may have a preference for fixed or mobile calling in various circumstances, but will use the non-preferred means if the need to call is fairly pressing.

Against this is the reluctance of regulators in most countries to consider national mobile calls and national fixed calls to be in the same market – notwithstanding increasingly apparent substitutability. The matter may not arise in a number of jurisdictions, such as in the European Union where the national calls market is no longer considered appropriate for ex ante intervention by the EC. In many developing countries all calls are regulated and market analysis to determine market scope and dominance is not conducted by the regulator. In the Pacific TRR, the Regulator in Vanuatu has indicated that she intends to include national calls originating on both fixed and mobile in a single market, but has not yet done so.

The only reasons for the prevailing practice of treating national fixed calls in one market and national mobile call in another market – the retail market for mobile services – appear to be:

- a desire on the part of most regulators to allocate each service to only one market for convenience. Note that this is certainly not required by any principle associated with economic analysis of markets and competition. The preference is that mobile

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[7] ITU analysis suggests that over 40% of international voice minutes were VOIP based, of which a significant proportion was via OTT operators in 2014, and that OTT Messaging has displaced all growth in SMS traffic, https://www.itu.int/en/ITU-D/Regional-Presence/ArabStates/Documents/events/2015/EFF/Pres/Maaref%20OTT%20Presentation%20Manama%202015.pdf

calls should be part of the retail mobile market rather than a separate calling services market
- there is not a complete substitution of fixed for mobile calls, because there might be advantages associated with bundles and on-net calling that influence customers in different circumstances
- a desire not to attract criticism because of daring to be different from most other regulators in the way calls are considered within markets

Given the high levels of substitutability, and the lack of a compelling reason to retain separate fixed and mobile call markets, it is proposed to define the market for national calling services to include calls originating on both fixed and mobile services.

## 2.3 International call service

International outgoing calls from Samoa are in a separate and discrete market. They are not substitutable for national calls or vice versa. International call services provided by Digicel and Bluesky compete against a range of alternative means of communicating internationally including:

- voice over internet and OTT communications services, such as Skype, Viber, and WhatsApp;
- social media and other messaging services, such as Facebook, Instagram, and Twitter;
- inbound calls, in the sense that where the price (in another country) for calls into Samoa is cheaper than the price (in Samoa) for outbound calls regular calling parties may tend to favour the use cheaper inbound call option. This could occur within firms and families in situations where overall lowest price is important.

It might be argued that the specific country routes should be treated as separate markets because they are generally not substitutable. For example, if the price from Apia to New Zealand is increased, it will not result in calls to New Zealand being substituted with more calls to Australia instead. However, such a detailed market analysis is not justified at this time given that there is no present intention to regulate the market on a route by route basis.

The international voice call services market is thus a separate and discrete market that may be defined as including international calls originating from both fixed and mobile services. Indeed, this is the approach of many regulators in other countries, even though they have a different view on national calling markets.[8]

International calls using traditional telecommunications networks have been impacted by calling capability being available over OTT services. OTT services provide a direct substitute for such calls at much lower price (where the call originates on the PSTN) or, effectively, for free (where the call is via an internet connection). Neither OOTR nor the Samoan operators have data on the extent of OTT usage for calls. International estimates may not apply to Samoa. However, if they do, the impact would appear to be significant.

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[8] For example, as a result of comprehensive market analyses in Saudi Arabia in 2010 and in Oman in 2013

Samoan operators are aware that OTT and social media messaging services have substantially impacted the use of SMS and MMS internationally from Samoa. Therefore, it is approporate to remove reference to SMs and MMS services from the outgoing retail international services market.

OOTR proposes to undertake further study with operators into the impact of OTT services on the retail international call services market in Samoa. In the meantime it is proipoised that existing Orders relating to International Call Service will continue to apply.

### 2.4 Retail broadband internet access

The key issue for defining the internet access market is whether it should be two markets, defined in terms of internet access from a fixed location and internet access from a mobile service.

It is important not to regard mobile internet access as being defined by the size of the screen that is on the mobile device. Mobile internet can be used, through dongles and other means, to support internet access for PC's, lap-tops and other devices that might also connect via non-cellular wireless (such as WiFi) or via cable or the fixed telephone network.

Traditionally download capability of mobile broadband may have been limited compared to fixed broadband access, but mobile download rates have substantially improved over 2G+. 3G is typically able to reach download data rates of 43 Mbps, subject to congestion, and that will increase with 4G. As a result applications that were once limited to fixed broadband are increasingly being performed via mobile services.

Mobile broadband is no longer a service in an embryonic stage of development. It competes with fixed broadband at most data rates typically used by customers. Therefore if a service provider were to apply a SSNIP to either fixed or mobile broadband, there would be a change in the mix of usage. There is inadequate data to determine if the change would be unprofitable but there is a real prospect of that. This means that both fixed and mobile broadband should be considered as part of the same market.

On balance, the retail broadband internet market is best defined as the market for all internet access, whether fixed or mobile.

### 2.5 Retail mobile services market

The market scope being examined is for retail services associated with access to and use of mobile services, including access, data and text applications and national voice calls.

These services are typically sold as service packages rather than as separate services. The service providers and end-users regard these services as 'natural' or expected bundles that are typically provided in a price-defined and service–defined package. Each service provider offers various bundles that are designed to match the requirements of customer segments.

The national retail mobile services market includes as services mobile voice and mobile data, and therefore SMS, MMS, mobile broadband, and bundles with these various services as components.

## 3. Wholesale Markets

Wholesale markets are markets for services that are provided (often reluctantly and only with regulatory direction) by one licensed provider to another licensed provider. They will often be services that are required to complete the retail offering of the second service provider.  A very good example is the interconnection service known as call termination service.  A retail service provider can only provide its customers with the ability to call customers directly connected to the service of another operator with the co-operation of that other operator.  That other operator must be willing to complete the call on its network by connecting it to the service of the called party.

### 3.1 Wholesale voice call termination on individual fixed networks

Each individual fixed network constitutes a separate market for voice call termination.  This is because the called party's service is directly connected to a specific network, and if access via the relevant network operator is not available, then there is no substitute service via interconnection with another fixed network.

Consequently this service is logically always a monopoly.

Even though each fixed network constitutes a separate call termination market, it is convenient to deal with all such markets together because the same regulatory obligations should be imposed on each call termination monopolist.

### 3.2 Wholesale voice call termination on individual mobile networks

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Even though each mobile network constitutes a separate call termination market, it is convenient to deal with all such markets together because the same regulatory obligations should be imposed on each call termination monopolist.

### 3.3 Wholesale broadband access at a fixed location

This market includes services with capabilities that are needed by wholesale customers in order to supply their own retail broadband services.  ULL has already been identified as a network infrastructure access.  Two other services that are more appropriately considered as services are wholesale bitstream access and fully-defined broadband services available to resellers on a wholesale basis.

These services are more important in markets with well-developed fixed network services with substantial penetration in germs of subscriber adoption and geographic coverage – such as in European and Australians markets.  However broadband service in Samoa is generally delivered via wireless technologies including mobile cellular technologies.  This situation may change with the commencement of commercial operation of the Government's own fibre network. Depending on the commercial terms that apply there may be substitution effects with existing wireless delivery systems, in which case both types of service will be in the same market.

Regulator proposed to define this market in general terms and review the services that it are included once more detail of the Government fibre network, including price and other terms, emerges.

### 3.4 Wholesale international internet bandwidth capacity

This market has been called the wholesale "international internet access service" in Samoa.[9] The exact title is not important. The key point is to recognise that the service is measured and paid for in terms of bandwidth capacity.

A key issue for this market is whether satellite capacity should also be included. Prior to the extension of the ASH cable from American Samoa via the SAS submarine cable extension, international services to and from Samoa were delivered by satellite. It is understood that some of the satellite contracts remain in place, and that satellite capacity is used as a back-up and for specific data connectivity purposes. From this it might be concluded that satellite services form part of the market.

Wholesale customers could of course access international connectivity via satellite-based services instead of via a submarine cable. However, this is practicable only for applications and products that have relatively low (international) capacity requirements. International experience makes it very clear that such substitutability is limited and that substantial capacity requirements are lowest cost when satisfied by cable technologies. The same conclusion has been reached by the national regulatory authorities in many other countries in similar contexts, including Bahrain,[10] Bangladesh,[11] Colombia,[12] Liberia, [13]and Singapore.[14] Any substitution in favour of satellite-based services would thus be unlikely to be a material constraint on the hypothetical monopolist supplier of submarine cable capacity in a SSNIP test.

OOTR is aware that Digicel uses O3B satellite services in Samoa to provide internet and international services. These services form part of the international bandwidth capacity market, since the market is defrined by substitutability on both the demand and supply sides, rather than by the specific technology used.

### 3.5 Wholesale cable landing station services

This is a service that enables licensed operators who are wholesale customers to access the submarine cable capacity that they have contracted for. It would be sensible for this market to be combined with the previous market in paragraph3.4 because the services are usually contracted for together. In practice therefore, there would be a single market for wholesale international internet broadband capacity, comprising a capacity service that is accessed via a cable landing station service. This is the approach that has been taken in PNG.[15] In that case two separate services were identified but they were services that are within the same market for the purposes of market and competition analysis.

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[9]For example, in the context of a licence by that name awarded to the Samoa Submarine Cable Corporation.

[10]Telecommunications Regulatory Authority (2012) *Dominance determination for wholesale international services: draft determination*

[11]International Telecommunication Union (2005), *Report to the Bangladesh Telecommunications Regulatory Commission (BTRC) on Significant Market Power*

[12] Comisión de Regulación de Comunicaciones (2009), *Resolution no. 2065*

[13]Liberia Telecommunications Authority (2001), *Public Consultation Document on the Licensing of the Cable Consortium of Liberia*

[14]IDA (2005), *Explanatory Memorandum to the Decision of the Info-communications Development Authority of Singapore on the Request by Singapore Telecommunications Limited for Exemption from Dominant Licence Obligations with respect to the 'International Capacity Services' Market*, paragraph 46

[15]For example, in the PNG Minister's *Wholesale Service Declaration No. 1 of 2013* of 21 March 2013 in the NICTA website: www.nicta.gov.pg

## 4. Summary

For current purposes it is proposed to define the following markets, all of which are national:

### Retail Markets

1. The retail fixed telephony service market for the provision of narrowband access;

2. The retail market for national calls originated from both mobile services and services at a fixed location;

3. The international voice call services market for international calls originating from both fixed and mobile services;

4. The retail broadband internet market including all broadband internet access services, whether provided over fixed or mobile networks;

5. The retail mobile services market including mobile voice and mobile data services, and ancillary services typically bundled with mobile voice and data services such as mobile broadband, and bundles with these various services as components;

### Wholesale Markets

6. The wholesale voice call termination market on fixed networks with each fixed network being considered as a separate market;

7. The wholesale voice call termination market on mobile networks with each mobile network being considered as a separate market;

8. The wholesale market for broadband access at a fixed location;

9. The wholesale international internet bandwidth capacity market, comprising submarine bandwidth capacity services and cable landing station access services

# D: ASSESSMENT OF DOMINANCE IN DEFINED MARKETS

## 1. The Act

The approach taken to determination of dominance in each of the markets defined in Section 6 is to apply each of the criteria set out in Section 26 of the Act in turn – first Section 26(1) which applies a single criterion based on a threshold market share of 40% of market revenue; and second, if Section 26(1) does not apply, Section 26(2) will be applied. If a market is assessed as characterised by dominance under Section 26(1) then Section 26(2) need not be applied.

The specific provisions of Section 26 of the Act are:

> (1) Every service provider whose gross revenues in a specific telecommunications market constitutes forty per cent (40%) or more of the total gross revenues of all service providers in that market, shall be designated a dominant service provider in that market, unless and until the Regulator specifies otherwise in an order.
>
> (2) The Regulator may designate a service provider with less than forty per cent (40%) of the total gross revenues in a specific telecommunications market as a dominant service provider if, either individually or acting together with others, the service provider enjoys a position of economic strength affording it the power to behave to an appreciable extent independently of competitors or customers.

## 2. Application to Retail Markets

### 2.1 The retail fixed telephony market for the provision of narrowband access services

Based on information provided by operators to OOTR, BlueSky had a market share based on revenues for services in this market of 100% for financial year 2015 and of 100% for the first three quarters of financial year 2016, making 100% for the seven quarters. Accordingly BlueSky may be declared dominant in this market in accordance with Section 26(1).

### 2.2 The retail market for national calls made from a fixed location or from a mobile service

Based on information provided by operators to OOTR, BlueSky had a market share based on revenues for services in this market of C-in-C % for financial year 2015 and of C-in-C % for the first three quarters of financial year 2016, making C-in-C % for the seven quarters. Accordingly BlueSky may be declared dominant in this market in accordance with Section 26(1).

### 2.3 The international voice call services market for international calls originating from both fixed and mobile services

Based on information provided by operators to OOTR, Digicel had a market share based on revenues for services in this market of C-in-C % for financial year 2015 and of C-in-C % for the first three quarters of financial year 2016, making C-in-C % for the seven quarters. Accordingly Digicel may be declared dominant in this market in accordance with Section 26(1).

### 2.4 The retail broadband internet market including all broadband internet access services, whether provided over fixed or mobile networks

The licensed operators providing broadband internet services in this market are:

- Digicel (mobile broadband internet access)
- Bluesky (fixed and mobile broadband internet access)
- CSL
- NetVo

BlueSky had a market share based on revenue of C-in-C % of this market in 2015, and C-in-C % for the first three quarters of 2016. Accordingly, BlueSky may be declared dominant in this market in accordance with Section 26(1).

### 2.5 The retail mobile services market including services mobile voice and mobile data services, and ancillary services typically bundles with mobile voice and data services such as mobile broadband, and bundles with these various services as components

Based on information provided by operators to OOTR, BlueSky and Digicel had the market shares based on revenue in the mobile services market as shown in the following table during 2015 and 2016.

| Mobile Services Market Share | 2015 | 2016 | Total |
|---|---|---|---|
| Digicel | C-in-C % | C-in-C % | C-in-C % |
| BlueSky | C-in-C % | C-in-C % | C-in-C % |

Accordingly both Digicel and BlueSky may be declared dominant in this market in accordance with Section 26(1).

## 3. Application to Wholesale Markets

### 3.1 Wholesale market for voice call termination on individual fixed networks

There are two networks in Samoa that provide fixed network services – Bluesky and Digicel. In the case of Digicel the Digifixed Service is provided using cellular mobile technologies. By definition each of the networks is a separate market for voice call termination and therefore each operator has a monopoly (100% market share) of the market for voice call termination on its network.

Accordingly, both Digicel and Bluesky may be formally designated as dominant in respect of the market defined by each's fixed network.

### 3.2 Wholesale market for voice call termination on individual mobile networks

There are two networks in Samoa that provide mobile network services – Bluesky and Digicel. By definition each of the networks is a separate market for voice call termination and therefore each operator has a monopoly (100% market share) of the market for voice call termination on its network.

Both Digicel and Bluesky may be formally designated as dominant in respect of the market defined by each's fixed network.

### 3.3 The wholesale market for broadband access at a fixed location

The only wholesale supplier of broadband access at a fixed location at present is BlueSky.

As a result, BlueSky be formally may be designated as dominant in respect of this market.

### 3.4 Wholesale international internet bandwidth capacity

There is only one international submarine cable facility operational in Samoa at present, operated by American Samoa Hawaii Cable LLC (ASH Cable), and this situation appears likely to continue until the recent licensed Samoa Submarine Cable Corporation's (SSCC) service becomes operational in over 12 months' time. The SSCC's service will take some time to reach 40% share of the market by revenue, if it reaches that share at all.

ASH Cable has a monopoly for the time being and therefore in excess of 40% of the market sales revenue.

Therefore ASH Cable may be formally designated as dominant in respect of this market.

Bluesky operates the cable landing station (CLS) in Samoa and describes itself as ASH Cable's agent in the provision of CLS services. In respect of the related CLS services Bluesky is effectively dominant, being the only CLS service provider in Samoa at present.

## 4. Summary of Proposals

It is proposed that the Regulator define the markets set out in Column 1 of the table below and designate the licensed operators shown next to each, in Column 2, as dominant.

| Column 1 | Column 2 |
|---|---|
| **Market definition** | **Dominant service providers** |
| 1. The retail fixed telephony service market for the provision of narrowband access | Bluesky Samoa Limited |
| 2. The retail market for national calls made from a fixed location or from a mobile service | Bluesky Samoa Limited<br>Digicel (Samoa) Limited |
| 3. The retail market for international voice call services originating from both fixed and mobile services | Digicel (Samoa) Limited |
| 4. The retail broadband internet market including all broadband internet access services, whether provided over fixed or mobile networks | Bluesky Samoa Limited |
| 5. The retail mobile services market including services mobile voice and mobile data services, and ancillary services typically bundles with mobile voice and data services such as mobile broadband | Bluesky Samoa Limited<br>Digicel (Samoa) Limited |
| 6. The wholesale voice call termination market on | Bluesky Samoa Limited |

| | |
|---|---|
| fixed networks with each fixed network being considered as a separate market | Digicel (Samoa) Limited |
| 7. The wholesale voice call termination market on mobile networks with each mobile network being considered as a separate market | Bluesky Samoa Limited<br>Digicel (Samoa) Limited |
| 8. The wholesale market for broadband access at a fixed location | Bluesky Samoa Limited |
| 9. The wholesale international internet bandwidth capacity market, comprising submarine cable bandwidth capacity services and cable landing station services | American Samoa Hawaii Cable LLC (in respect of submarine capacity services) Bluesky Samoa Limited (in respect of CLS services) |