TRA's Market Development Report for the year ending September 30 2020[1]

30 June 2021

Summary

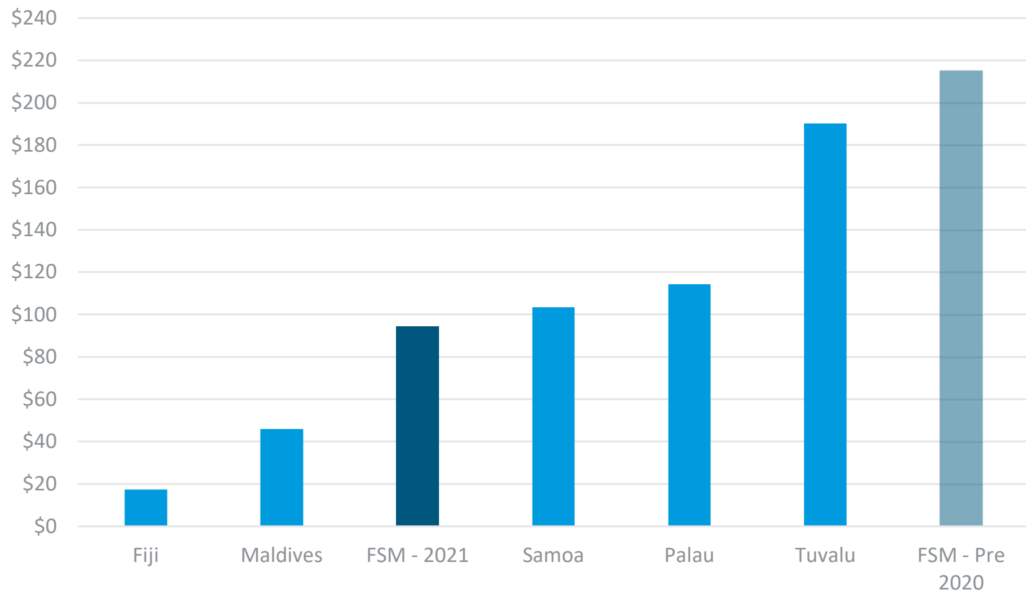
This report covers significant matters relating to the performance and efficiency of the communications sector of the Federated States of Micronesia (FSM). This year, the report focuses on:

- the progress made over the past year towards a well-functioning competitive market
- the barriers that remain in place to achieving a well-functioning market, and
- the TRA's views on how the barriers can be lessened or overcome.

Over the past year, increased competition in the fixed internet market has delivered reduced prices and improved services to consumers—in some cases, prices have halved and speeds have doubled. International benchmarking shows that, with competition, similar outcomes could be achieved in the mobile market.

[1] This report is issued pursuant to s 319(4)(d) of the Telecommunications Act.

Fixed internet plans – International comparison before and after competition in FSM



Notes: *1. For plans advertising speeds of at least 20 Mbps (with at least a 50G/month data cap)*

2. Before Kacific entered the FSM market in 2020, there were no retail internet plans which offered speeds over 20Mbps – the plan shown here is the 'ADSL Home Net 8192' plan, offering just over 8 Mbps

However, active competition appears currently only to be developing in the parts of the market where new entrants can avoid direct engagement or interconnection with FSMTC. Highly visible ongoing disputes, including legal action, between two government-owned entities—OAE and FSMTC—are deterring new entry by full-service operators that are considering entering the mobile market.

In the current market structure, the Government has several interests that are all legitimate and appropriate, but that also coexist uneasily to some extent with each other:

- As a policy-maker, the Government has an interest in the success of the reforms for the broader benefit of the FSM and its development
- As the owner of FSMTC, the Government has an interest in optimizing FSMTC's financial performance
- As the owner of the OAE, the Government has an interest in the OAE's financial performance.

In a well-functioning market, potential investors would expect to see Government-owned entities aligned on key matters, rather than taking disputes to court. In addition to reducing investor confidence, the court disputes are a waste of both money and management effort, which can only be bad for consumers.

Since Government owns both OAE and FSMTC, the lack of cooperation between the two, and the management effort and litigation costs expended as part of the disputes, are all direct costs to the Government. The less visible, but much more significant cost, however, is the deferral of large-scale new investment, both for grant-funded infrastructure to be rolled out by OAE, and for potential investment by private-sector new entrants.

The Government should consider whether, in its capacity as owner, the Government should ensure its two national agencies, FSMTC and the OAE are working in a more aligned manner. This would mean FSMTC would not be duplicating grant-funded investment in fiber, but rather would see the OAE fiber roll out as something to support and leverage, so that the FSMTC can be better placed to provide faster, more reliable, and accessible services to its customers at lower prices, as well as becoming more resilient to competition from other licensed operators.

1 Introduction

A well- functioning telecommunications (telecoms) market is an important contributor to the economic and social development of the FSM and the lives of its people.

A well-functioning market requires:

- Ongoing investment in infrastructure on both the main and outer islands of the FSM
- Affordable, reliable and high-quality services with available coverage across FSM
- High connectivity to the digital world beyond FSM to advance economic, social and personal needs.

This report covers significant matters relating to the performance and efficiency of the communications sector of the Federated States of Micronesia (FSM). This year, the report focuses on:

- the progress made over the past year towards a well-functioning competitive market
- the barriers that remain in place to achieving a well-functioning market, and
- the TRA's views on how the barriers can be lessened or overcome.

2 The FSM telecom reform program

The FSM telecoms sector reforms are designed to improve service access and quality for FSM consumers by maximizing competition where possible. Competition brings with it not only lower prices and better quality of service, but also the entry of new operators that bring investment, innovation, employment, and new skills. Achieving a competitive market requires the right policy and regulatory platform to ensure a level playing field for potential competitors.

In order to support competition, the FSM reforms prioritized the following:

- *Opening the market for competition*: allowing new service providers to offer services to customers, subject to being licensed by the TRA
- *Modern connectivity infrastructure:* Securing grant-funded investment for submarine cable connectivity to Chuuk, Yap and in due course to Kosrae, and a grant funded fiber terrestrial network to every premise for the main islands of the four States
- *All licensed operators accessing grant-funded connectivity infrastructure at cost only:* Ensuring the grant-funded infrastructure would be available to all licensed operators at cost only, by creating the FSM Telecommunications Cable Corporation, also known as the Open Access Entity (OAE), and vesting the OAE with the responsibility of owning the new infrastructure, as well as access rights through the Hantru cable. To ensure the OAE would provide access to all licensed operators without favor, the OAE is not permitted to compete with licensed operators for end user customers
- *New rules that promote and favor competition:* Establishing the TRA as an independent regulator to provide conditions for effective competition, advance the interests of

consumers through regulation, promote efficient investment in and use of communications facilities, and provide stakeholders such as government, consumers and operators with information on the sector.

- *Stimulate the demand for and use of telecommunication services:* The reforms seek to stimulate increased demand for, and use of, telecommunication services by the people of the FSM through lowering prices and providing more reliable and better services because:
  - The modern grant funded infrastructure enables greater access to better services and more reliable services (for example the Yap cable enables Yap to have faster speeds and a more reliable service than can be offered by satellite)
  - Providing the modern grant-funded infrastructure to all licensed operators at cost only means the people of FSM should be offered lower prices, since the operators' cost of service will be considerably lower than if that infrastructure was priced to provide a commercial return
  - A reliable, affordable and fast telecommunication service enables the national and state governments to provide the people of the FSM with better online government services including in education and health.

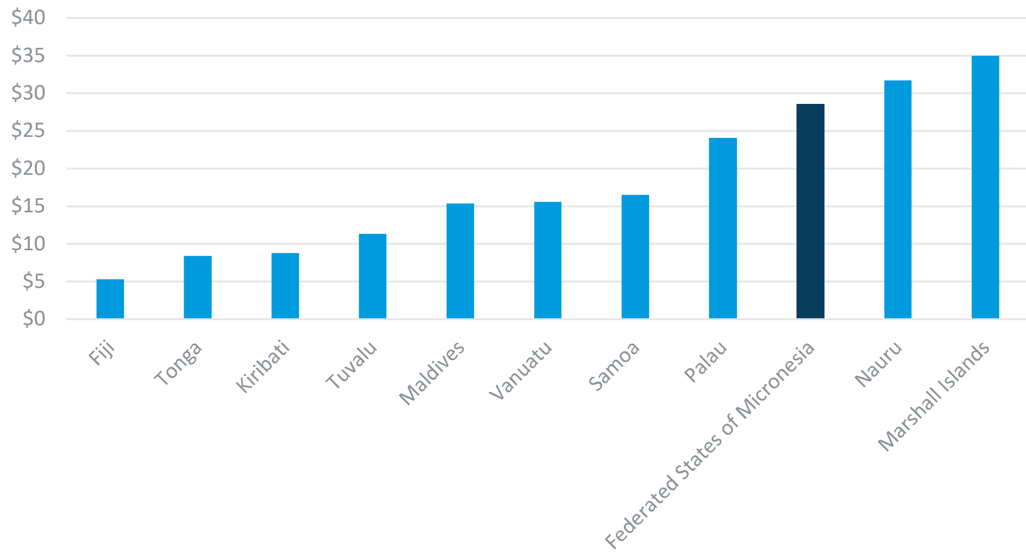
The reforms are consistent with international best practice, and their successful implementation will maximize benefits for FSM consumers.

Successful reform implementation can deliver much lower prices

With grant funding available for both international connectivity and domestic network upgrades, the FSM is able to quickly become one of the leaders in providing internet access, both in the Pacific and internationally. Prices would be low, bandwidth utilisation would grow rapidly, and there would be near-universal uptake of internet and mobile communication services on the main islands.

Figure 2.1 below shows entry-level mobile services for small island nations. Fiji, Tonga and Kiribati show prices below $10 per month are feasible. Currently FSM's prices are high, sitting in the right-hand side of the graph below. The effective use of grant funding could shift FSM's performance to the desirable left in the following graphs. With grant-funded fiber infrastructure, FSM could have among the lowest prices for small island developing nations.

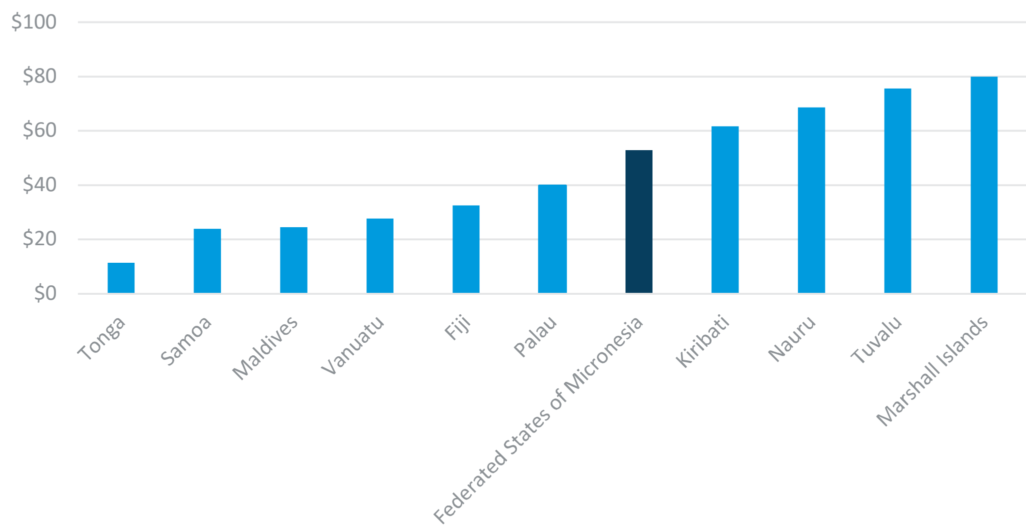
Figure 2.1: Low user - mobile prepaid plans



Low user - 30 minutes of calling and 500MB that can be used over a month. Converted to USD and VAT/sales taxes excluded

For high level mobile users, in Figure 2.2 below, Samoa and Tonga demonstrate prices below $25 are feasible.

Figure 2.2: High user - mobile prepaid plans

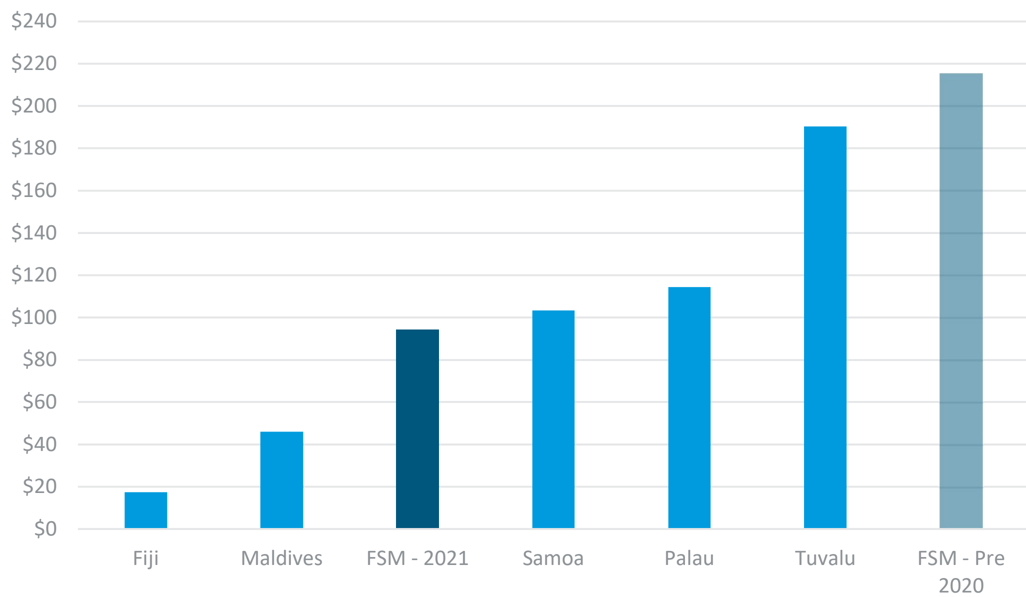


High user - 300 minutes of calling and 5GB that can be used over a month. Converted to USD and VAT/sales taxes excluded

With market entry by Boom! and Kacific, and FSMTC's competitive response to that entry, FSM has made significant progress in the last year in reducing fixed internet prices. This is illustrated in Figure 2.3 below, and in more detail in Figure 3.2. Tariffs for a 20 Mbps connection are below $100 per month, less than half the price of the fastest plan before 2020, which cost over $200 per month, while only providing speeds of just over 8 Mbps.

While this progress is encouraging, the highly competitive and fiber-connected markets in Fiji and Maldives show a price below $50 per month is feasible for an equivalent service. Our own estimates, described in section 3.2, and based on OAE's pricing for wholesale fiber connections, confirm this.

Figure 2.3: Fixed internet plans – International comparison before and after competition in FSM



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In implementing the reforms, the Government needs to balance several valid countervailing interests

In the current market structure, the Government has several interests that are all legitimate and appropriate, but that also coexist uneasily to some extent with each other:

- As a policy-maker, the Government has an interest in the success of the reforms for the broader benefit of the FSM and its development, including through appropriate actions being taken by Government-owned entities, like FSMTC and OAE, to support the implementation of the reforms.
- As the owner of FSMTC, the Government has an interest in optimizing FSMTC's financial performance. Yet FSMTC is an incumbent monopoly, and competition enabled by the reforms will inevitably affect FSMTC's financial performance. One obvious way for FSMTC to optimise its financial performance is to use every legal opportunity to defend its incumbency. This may include seeking to build out key infrastructure, like FTTP, before the OAE, even if some assets are duplicated. However, such conduct wastes national resources and runs counter to the intent of the reforms.

- As the owner of the OAE, the Government has an interest in the OAE's financial performance.

As we discuss later in the report, this year has seen ongoing disputes, including litigation, between OAE and FSMTC. Since Government owns both entities, the lack of cooperation between the two, and the management effort and litigation costs expended as part of the disputes, are all direct costs to the Government. The less visible, but much more significant cost, however, is the deferral of large-scale new investment, both for grant-funded infrastructure to be rolled out by OAE, and for potential investment by private-sector new entrants.

Given the purposes of the reforms, the Government should consider whether, in its capacity as owner, the Government should ensure its two national agencies, FSMTC and the OAE are working in a more aligned manner. This would mean FSMTC would not be duplicating grant-funded investment in fiber, but rather would see the OAE roll out as something to support (and indeed seek timely roll out from the OAE) so that FSMTC can be better placed to provide faster, more reliable, and accessible services to its customers at lower prices, and its focus would be firmly on responding to customers' needs and resilience to competition for those customers from other licensed operators.

3 Major developments in 2020/21

Below we explain the major developments over the past year. We cover the impact of the global COVID-19 pandemic separately from other market developments.

3.1 Expected and actual impacts from COVID-19

COVID-19 is widely regarded as one of the most, if not the most, significant post World War 2 global event in terms of its impact on humanity as a whole. While due to swift Government action the FSM has been fortunate compared to many other countries, COVID-19 has still impacted on our people both economically and socially.

The pandemic has had a substantial impact on FSM's economy. In 2020, FSM's GDP decreased by 1.6 percent in real terms (adjusting for inflation), and the IMF has projected a further 3.7 percent decline in 2021, with positive growth expected to return in 2022. This negative economic impact is concentrated in the travel and tourism industries, which do have a flow on effect for telecommunications. Understandably, there was much concern prior to last year's report regarding the impact of COVID-19 on the telecommunications industry.

Given the unprecedented nature of the pandemic, it was difficult to know what the ultimate impact would be on telecommunications operators in general, and FSMTC in particular. Expected negative impacts included loss of roaming revenue due to the cessation of business travel into and out of FSM, as well as a general loss of purchasing power by consumers due to the economic shock of the pandemic. Countervailing the negative impacts were the expected positive effects of increased demand for electronic communication in the absence of travel.

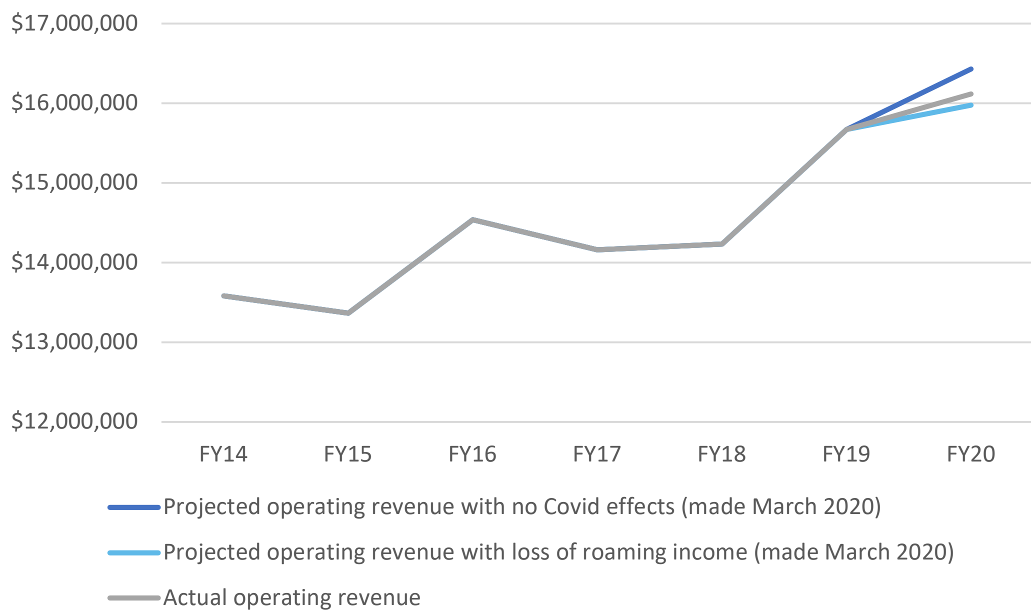
FSMTC initially concluded that the negative impacts would dominate. In March 2020, FSMTC advised the President, copying the TRA, that FSMTC would, among other things, cease all payments to OAE because of the challenges raised by COVID-19 and the immediate risk to FSMTC of exhausting its cash reserves. In its letter to the President, FSMTC noted it is "*at a* *serious risk of running out of cash to meet our payroll and pay vendors to continue to provide uninterrupted services to the public in FSM*".

At the President's request, the TRA undertook its own analysis of FSMTC's finances based on audited accounts and other publicly available information about FSMTC. The TRA developed a forecast for FSMTC's financial year 2020 revenues with and without the impact of COVID-19. The TRA concluded that, though the impact of COVID-19 on FSMTC would be material, FSMTC was not at any immediate risk of exhausting its cash reserves.

Ultimately, the TRA's analysis was a better reflection of the actual outcomes. In the financial year ending 30 September 2020, FSMTC fared slightly better than the TRA's forecast on revenues. Rather than falling, as predicted by FSMTC, its cash reserves in that year increased by $830,000. The TRA estimates that approximately $590,000 of this increase is due to FSMTC not paying OAE invoices since March 2020. However, even adjusting for that impact, FSMTC has not suffered the financial distress that it expected.

The TRA's March 2020 analysis of the likely impact of COVID-19 on FSMTC's revenues is set out in Figure 3.1 below. For reference, the figure also includes the actual result from FSMTC's audited accounts for financial year 2020.

Figure 3.1: Impact of COVID-19 on FSMTC FY2020 operating revenues –TRA projections compared to actual outcome



FSMTC Financial statements and TRA modelling

Such revenue resilience is a positive sign. Even under a sharp negative shock, the market remained sustainable, and there were no interruptions to services or a need to resort to extraordinary measures by FSMTC[2].

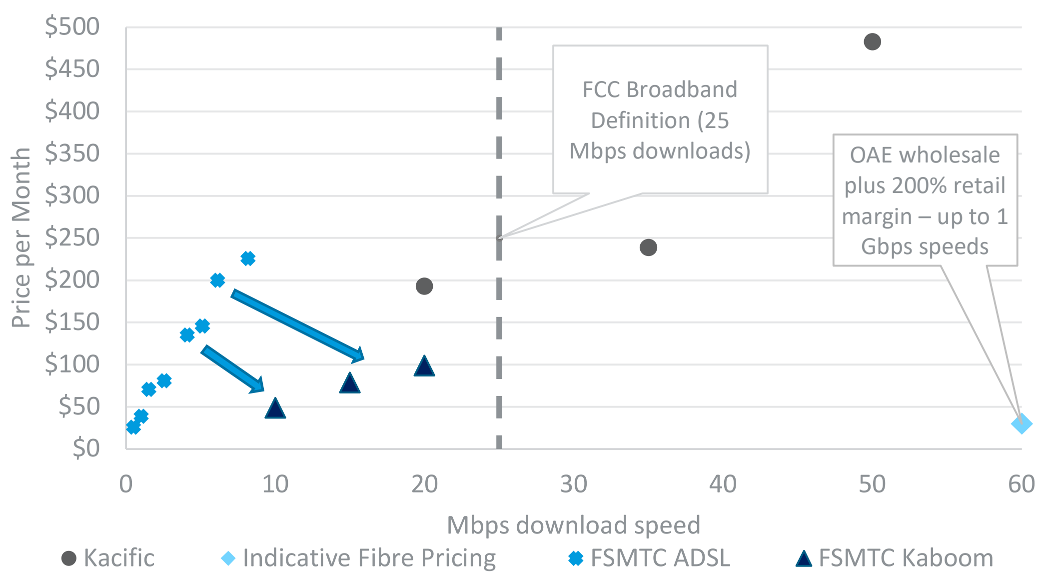
3.2 Progress towards well-functioning market

The TRA is working to promote competition in the market. While there has been little progress in attracting full-service competitors, there has been entry in the fixed internet market with Kacific satellite internet in Chuuk, Kosrae and Pohnpei. New entry on Yap is also imminent, with licensed internet provider Boom! preparing to launch services over fiber.

FSMTC's new 'Kaboom' plans, launched in April 2021, appear to be a direct response to competition from Kacific and Boom!. Kaboom plans offer more affordable, higher speed plans where wired connections are available.

Figure 3.2 shows that, prior to April 2021, FSMTC's ADSL service had speeds well below international broadband speed standards, and steep price premiums for higher speeds. While Kacific does not offer very low prices, its products do effectively compete with FSMTC's higher speed ADSL plans, as Kacific's service offers superior speed.

Figure 3.2: FSMTC plan changes, likely in response to competition from Kacific and Boom!



Kacific pricing here includes the 'rent to buy' terminal price. After 24 months the terminal is paid off and prices drop $65/month.

Now FSM has better value internet on the main islands, with customer choice between FSMTC and Kacific (and Boom! soon to commence on Yap). Connectivity on other islands has also

2 Aside from refusing to pay OAE, which doesn't seem to be related to ability to pay, given the increase in cash reserves is bigger than the outstanding amounts owed to OAE.

improved, with Kacific offering previously unavailable high-speed internet to the outer islands of Chuuk and Pohnpei. Competition to provide internet services over open-access fiber on the main islands has even more potential to increase speeds and reduce prices.

To illustrate this, Figure 3.2 shows that the indicative retail price of a fiber connection delivered over OAE's grant-funded FTTP network would be well below $50 per month. Such a connection would provide download speeds of up to 1 Gbps. The connection we describe would be 50 times faster than the fastest FSMTC Kaboom plan and cost half the price. TRA's pricing estimate assumes that a retail operator would purchase wholesale fiber services at the rates announced by OAE, and add a relatively generous 200 percent retail margin.

Nevertheless, FSM continues to miss out on full-service competition in the mobile services market. We discuss the reasons for this in the next section.

4 Remaining barriers to well-functioning market

The reforms had a simple logic and a clear intent—drive the best possible quality and lowest possible prices of telecommunications services for Micronesian consumers by:

- Obtaining grant funding for common-use infrastructure (often referred to as Layer 0 and Layer 1 services) that can be shared by multiple operators to provide services to end users—this ensures that, where it makes sense to only have one set of assets, that set of assets is put in place at very low cost, resulting in low prices to end users
- Ensuring the grant funded infrastructure is controlled by a government entity that maintains, operates, and continues to invest in the assets, while providing cheap, open and fair access to all licensed operators that wish to use the assets
- Encouraging multiple operators, including FSMTC, to make use of the cheap grant-funded infrastructure to conduct fair and vigorous competition for supplying services to end users
- Increasing competition to drive higher uptake, better quality of service and lower prices.

The logic and the reform approach to achieve a well-functioning market remain sound. While some good progress has been made specifically in the market for fixed internet, the transition to a well-functioning market still faces major barriers. Firm action by the State and Federal Governments is needed to ensure that Micronesians can enjoy the full potential benefits of the reforms as soon as possible.

4.1 Prevalence of disputes between FSMTC and OAE is discouraging new entry

By far the biggest barrier preventing FSM from rapidly developing a well-functioning market is the series of highly visible disputes between OAE and FSMTC. Rather than being productive disputes to clarify boundaries and ground rules for operating within the new regulatory framework, the disputes appear to largely focus on FSMTC contesting the new regulatory framework as a matter of principle, and seeking to overturn it.

Such disputes:

- create an atmosphere of uncertainty, which reduces the probability of new entry, and delays the timing of such entry, thus reducing and deferring private investment in FSM telecommunications infrastructure
- jeopardise and delay the release of grant funding for telecommunications infrastructure investment in FSM, thus reducing and deferring public sector investment
- impose significant transactions costs on two Government-owned entities, not only directly through legal fees, but also by diverting the limited management resources of both FSMTC and OAE away from productive efforts to improve FSM's telecommunications infrastructure.

Despite the OAE being prohibited by law from competing for FSMTC's end user customers, FSMTC seems more focused on challenging the OAE as a competitor, rather than leveraging the OAE as a strategic supplier of cheap infrastructure to improve telecommunications services in FSM. Litigation is currently underway between the two entities over a number of matters, including fees paid by FSMTC to OAE, and OAE's access to physical infrastructure for the purpose of maintenance and upgrade works. The litigation involves FSMTC challenging the validity of the Indefeasible Rights of Use (IRU) Deed that FSMTC signed with OAE in 2018.

Rather than taking advantage of OAE's grant-funded fiber roll out, FSMTC appears to be spending its highly limited (by its own admission) cash reserves to build small amounts of fiber assets in an ad-hoc manner—fiber assets that FSM could obtain at no cost and at a large scale under grants already secured by Government.

Ultimately, it is the people of FSM who will be worse off, as they will have to pay higher telecommunications prices if FSMTC persists with self-funding infrastructure that duplicates the planned grant-funded assets.

The key characteristic of new entry so far has been the use of business models by new licensed operators that entirely avoid the need for any interaction between the new entrant and FSMTC. Kacific uses satellite broadband technology that does not require any interaction or interconnection with FSMTC. Boom! is an internet service provider that purchases fiber access and international connectivity from the OAE, and does not need to interconnect with FSMTC.

It would be impossible to establish a viable full-service operation (one that includes voice services) without intensive interaction and agreements with FSMTC. Unsurprisingly, while our market sounding shows that several international operators are in-principle interested in entering the FSM market with a full-service offering, none of those operators are willing to begin detailed assessments given the current market situation—two Government-owned entities taking opposite views on policy and operational matters, and seeking to resolve their dispute in court, rather than by mutual agreement.

In a well-functioning market, potential investors would expect to see Government-owned entities aligned on key matters, rather than taking disputes to court. In addition to reducing investor confidence, the court disputes are a waste of both money and management effort, which can only be bad for consumers.

4.2 Uncertainty over access to bottleneck infrastructure

Section 302 of the FSM Telecommunications Act of 2014 (the Act) defines a bottleneck facility to be "a communications facility declared by the Authority to be essential for the production of communications services which, for technical reasons or due to economies of scope and scale and the presence of sunk costs, cannot practicably be duplicated by a potential competitor in a communications market." The TRA has to date declared the following facilities to be bottleneck facilities:

- towers and other supporting constructions for the provisions of radio communications services
- poles, masts, ducts, conduits, inspection chambers, manholes and cabinets and
- submarine cable landing stations

One of the disputes now before the courts stemmed from the OAE requesting, and FSMTC refusing, access to a bottleneck facility—the Cable Landing Station (CLS) in Pohnpei[3].

The TRA's position on the dispute is that:

- The Pohnpei, Chuuk and Yap CLS are all declared Bottleneck Facilities under the Act
- FSMTC has a statutory obligation to negotiate an interconnection and access agreement to their Bottleneck Facilities, and
- There is no technical infeasibility in the Interconnection and Access Rules that would have permitted FMSTC to refuse access to the CLS
- Therefore, FSMTC should have granted access to the CLS following a request from OAE.

Despite the TRA's position, the dispute went to court, with the case ongoing. On 26 May 2021 the Supreme Court granted a preliminary injunction ordering FSMTC to give OAE access to the Pohnpei CLS within seven days of a request.

While the specific matter of access to the Pohnpei CLS is still before the courts, the wider issue of access to "bottleneck facilities" needs to be robustly addressed.

On 1 June 2021, the TRA published a consultation paper to obtain stakeholder feedback on the TRA's preliminary view that submarine and terrestrial fiber optic communications facilities may be bottleneck facilities as defined by the Act, and may need to be declared as such by the TRA. The TRA's consultation and decision-making process is ongoing. The TRA will continue to work on ensuring the FSM telecommunications market has clarity on which facilities are bottlenecks, and that access to such facilities is provided.

4.3 Investors need to see tangible Government steps that encourage new entry by full-service operators

Entry by a full-service telecommunications operator would require interconnection agreements and ongoing operational engagement with FSMTC. Throughout our market engagement, feedback from potential international investors has almost universally focused

[3] Later actions and evidence showed OAE were also denied access to the CLS in Yap.

on perceptions of FSMTC as uncooperative with the reforms, and the lack of tangible steps by Government to ensure FSMTC acts in the spirit of the reforms.

While the investors are aware of regulatory enforcement by the TRA and pending court decisions, Government has an important role to play—both as policy-maker and as FSMTC's owner. Clearly, Government direction is a simpler, more direct approach than lengthy regulatory enforcement or private litigation.

Where potential investors see a lack of direct Government action to ensure FSMTC is aligned with the reforms, the investors will question the strength of the Government's commitments to the reforms. In comments to us, at least one investor noted explicitly that, given prior experiences with a Pacific government reversing reforms at short notice, the investor will not commit the extensive resources to develop a business case for new entry until they see sufficient evidence of the Government's commitment to creating a level playing field.

5 How barriers can be lessened

Lessening and overcoming barriers to a well-functioning market requires, first and foremost, for FSMTC's role in the market to be clarified, and for FSMTC to act consistently with that role.

Subject to the laws setting out its duties, the TRA will continue to carry out its regulatory functions to promote competition and a well-functioning market, including through enforcement action where warranted. The TRA's workstream on bottleneck facilities in particular will help ensure that, if key common-use infrastructure in the FSM is a bottleneck facility under the Act, access to it is regulated.

However, given the consistent pattern of disputes between FSMTC and OAE, it is clear that regulatory action may not be the most efficient tool to achieve speedy and complete compliance with the intent and letter of the reform. Direct Government action, through the exercise of its powers as the owner of FSMTC and OAE, is likely to be a much more effective and faster tool—not only for the purpose of changing FSMTC's conduct, but also for signalling to potential new entrants that FSM's commitment to a competitive communications market is genuine and resolute.

The most urgent task is to ensure that FSMTC refocuses on transitioning its business to becoming a customer-focused operator that understands customers' needs, is responsive to those needs, and is resilient to competition from new entrants. A key part of this transition involves building a well-functioning relationship with the FSM's new Government-owned infrastructure provider—OAE.

FSMTC's strong incumbent position in the market and the ability to be among the first retail operators to leverage OAE's new grant-funded infrastructure, are important advantages. FSMTC should be leveraging these advantages to secure its market position, as these advantages will erode over time.