Pricing Benchmark Study

08 September 2020

THIS PAGE IS INTENTIONALLY BLANK

CONTENTS

Table of Figures

1. EXECUTIVE SUMMARY

More than half of the world population is connected to the Internet[1]. However, at both national and international level, a looming digital divide continues to increase the risk of those who are unconnected being left behind in the global digital transition. Many countries have put forward policies and regulations that enable a competitive environment for fixed and mobile network operators ("MNOs") in general and increasingly broadband operators in specific. Amongst those that are key, are those policies that seek to ensure that operators provide services that facilitate Internet access through a relative decrease in mobile data prices, i.e., lowering the costs of communications.

This report is the second of two reports relating to a Pricing Study for Eswatini Communications Commission' ("ESCCOM"). Whereas the first report provided a detailed situational analysis, this report specifically investigates wholesale and retail telecommunications prices in the Kingdom in an effort to assess the impact of the Price Transformation Programme. The Price Transformation Programme was instituted by ESCCOM in 2017 to reduce wholesale prices over a three year period ending in 2019. The Programme primarily focused on reducing wholesale pricing as it was established in previous studies that the wholesale prices were the main driver of high retail prices, and subsequently a high cost to communicate. Wholesale prices set the cost floor for retail prices as whatever the wholesale pricing is, it is the primary factor into establishing retail prices. Retail pricing is secondary and is influenced by movements and changes in the wholesale pricing; these markets are vertically integrated.

As the Price Transformation Programme ran from 2017 – 2019, the data that has been used in this study is up until 2019. However, we note that regulatory recommendations and price adjustments cannot be made in 2021 using 2019 data as such the Commission has added a case study in the retail section that takes stock of the changes in the market in the year 2020. As such the retail recommendations made in this report take into consideration the market changes seen in the year 2020. The wholesale market data still reflects the 2019 prices and data; this report does not envision that wholesale pricing would have adjusted in the year 2020 as wholesale data does not fluctuate as fast as retail prices.

The report further investigates wholesale pricing and the retail prices of data and voice/SMS baskets in Eswatini in relation to other countries in Africa. The countries considered in wholesale pricing benchmarking are landlocked countries in the Southern African Development Community (SADC), Botswana and Lesotho, which are comparable to Eswatini in terms of its internet value chain. The countries considered in the retail pricing benchmarking fall into three categories; (1) countries with competitive mobile telecommunications markets (Tanzania, Kenya, and Zambia), (2) member states of the Southern Africa Development Community (SADC) with similar population sizes as Eswatini (Botswana, Namibia, Mauritius, and Lesotho), and (3) countries where MTN is the dominant operator (Rwanda and Uganda). It is noted that in the case of Mauritius, although it is a SADC country with a small population, it is an island and therefore has direct access to undersea cables and this may not make it a direct comparator when considering the cost of communications.

On a wholesale level, the Kingdom made significant progress in lowering the national leased line installation, monthly usage costs, shared (on a wholesale basis) and dedicated bandwidth costs, all of

[1] *International Telecommunications Union (ITU)*

which were key products targeted by the Price Transformation Programme. Despite the improvement in national leased line bandwidth costs, wholesale pricing remained high when compared to Botswana, a landlocked regional peer. Notwithstanding this, the decreases in wholesale pricing overall have led to a reduction in retail data costs. The vertical integration of the two markets shows that a change in the wholesale market has a trickle-down effect to the retail market; as such any further adjustments need to first look at the wholesale market.

The benchmark study compares African voice/SMS and data price baskets, using tariff data which is collected on a quarterly basis.[2] The benchmark study provides insights on the voice and data MNO pricing mechanisms across the selected African countries and provides an input to inform the decision-making process in relation to mobile data pricing. It uses the same methodology as the price benchmarking conducted by ESSCOM in 2017 and complements the efforts already made under the ESSCOM Price Transformation Programme.

Until 2017, MTN operated as a default monopoly in Eswatini's mobile telecommunication industry, as EPTC focused its business on other markets. Eswatini Mobile's entrance in the market lead to a substantial and almost immediate decrease in mobile voice/SMS and data prices in the Kingdom. Despite this fall in prices from early 2018, the prices in the Kingdom remain uncompetitive and high when viewed in the context of the affordability of Eswatini consumers, in particular, when compared against territories where, like in Eswatini, MTN is the dominant operator such as Uganda and Rwanda.

Notwithstanding benchmarking against peer countries, pricing also needs to be considered on a national basis and considered against the affordability of citizens. According to the most recent Eswatini Household Income and Expenditure Survey (EHIES) 2016/17, expenditure on communication accounted for 7.4% of total household expenditure, up from 2.7% reported in the 2012/2013 EHIES. This is an indication of the growing demand for communications services and their importance to households in Eswatini. The 1GB offering is used as a basis for analysis globally with the rationale that 1GB of data valid for a month gives a fair measure of the amount of data a consumer can and should reasonably use within a month. Eswatini's data costs are higher than the regional norm – for example, the 1GB price basket is higher than the price basket charged in the rest of the benchmarked countries during the period 2016 - 2019. A further case study is conducted on the 2020 prices, which show a significant decline in the 1GB prepaid basket; so much so that Eswatini's pricing is lower than comparable regional peers. These are some of the findings presented in this report, as well as the targets that should be considered by ESCCOM and Eswatini going forward.

The table below presents key findings and recommendations for wholesale and retail pricing services in Eswatini, based on the results of the Price Benchmarking Study.

PRICE BENCHMARKING	
Wholesale Benchmarking	
Key Findings	**Insights and Recommendations**

[2] *Research ICT Africa (RIA) tariff data*

- **Installation costs for international leased lines remained constant for the assessed bandwidth offerings, with the monthly (usage) rates also constant between 2017 and 2018, increasing in 2019 by 52% for the 10 Mbps and by 35% for STM-1 and STM-4 bandwidth offerings.**
- **Installation fees for national copper leased lines increased by between 56% and 172% between 2016 (when they were offered at commercial rates) and 2017 (upon the introduction of a wholesale national leased line offering). Between 2017 and 2019, national leased line installation fees remained largely constant for each bandwidth offering as EPTC moved towards technology-neutral pricing from 2018.**
- **Monthly usage fees for copper-based national leased lines decreased by 74%, 80% and 40% in 2017, 2018 and 2019, respectively. Following the introduction of technology-neutral national leased line pricing in 2018, fibre-based customers' usage fees increased, to align with copper-based national leased line pricing.**
- **2019 bundle offerings (monthly national leased line and monthly internet fee bundles) were discounted by between 10% and 18%. Volume discounts of between 17% and 40% were introduced in 2019 for customers with multiple connectivity needs.**
- **Commercial installation costs for national leased lines, shared and dedicated internet remained the same during the assessment period**
- **Commercial monthly usage fees decreased by up to 86% (leased lines) and 62% (internet). In 2018 further discounts were also introduced for NGOs and Learning Institutions.**
- **Wholesale pricing in Eswatini is significantly higher than that of Botswana,**

Price Transformation Recommendations

- It is recommended that installation costs be reviewed downward and that a flat flee be charged across all bandwidth speeds. It is envisioned that this will significantly lower prices, due to the area coverage of the country.
- It is recommended that a glide path reduction of 60% be implemented over a three-year period , as there is evidently a need for cost reduction.
- Since the retail and wholesale markets are vertically integrated it is recommended that a glide path reduction be implemented in the wholesale market. The effectiveness of the reductions within the wholesale market will inform the retail price ceiling and floor to be prescribed to the retail market.

Regulatory Recommendations:

- Private sector investment in network infrastructure is recommended and or privatization of the government's stake in EPTC.
- It is recommended that the regulatory tools available in section 28 of the ECA be used to impose accounting separation license conditions and regulatory measures on licensees with vertically integrated operations. This is to promote and ensure more transparency in pricing and cost oriented pricing of wholesale and retail broadband services.
- It is recommended that competition be introduced in the wholesale market (e.g. Licensing of Eswatini Electricity Company (EEC) network infrastructure). This could introduce efficiencies and competition that could contribute towards reducing wholesale costs further, thereby driving the retail prices lower.
- In promoting fair competition and eliminating all forms of discriminatory pricing in the broadband market, a review of EPTC's pricing for last mile fixed internet

despite both countries being landlocked with similar pricing constraints. For example, BOFINET's current leased line (and internet included) fee are between 854% and 2 286% lower than EPTC's for similar bandwidths. • **The installations fees for Lesotho are significantly lower, and more consistent. This could be owing to the technology used or that there is limited scope for competitive installation prices with a limited market.** • **Unlike BoFinet EPTC does not have wholesale prices for last mile internet connectivity (e.g. ADSL). ISPs are currently charged at retail price. This contributes to high costs of providing Fixed Broadband services for ISPs that that rely on EPCT's fixed wired network to provide fixed broadband services making these ISPs that offer ADSL (i.e. Posix, Real Image) uncompetitive in the market against ISPs that use fixed wireless technology (i.e. Jenny Internet, Touch IT, VSAT for last mile connectivity. This has seen the market for ADSL declining significantly as consumers opt for competitively priced fixed wireless broadband services. Most the ISPs experienced a decline or stagnation in subscriptions and eventually market share and revenue.**	broadband (ADSL) connectivity services to ISPs is recommended. It is recommended that this service to ISPs be priced or charged at wholesale rate and not at the current commercial rate.
Retail Benchmarking	
Key Findings	**Insights and Recommendations**
• **The Wholesale and Retail markets are vertically integrated markets, meaning changes in the wholesale market have a trickle impact on the retail market. Any changes in the wholesale market will have an impact on the retail market, the market relation is to be considered in all retain market regulatory interventions.** • **Data prices decreased in the Kingdom between 2017 and 2019, improving the pricing for citizens and moving the country**	• The Price Transformation Programme ran from 2017 till 2019, and this study focuses on that period in particular. However, as we know that vertically integrated markets, as wholesale and retail are, take some time to show trickle down effects and changes in the lower market (retail) may go on sometime after the end of the actionable period. This has been the case with Eswatini as well, as we see that the 2020 pricing has dropped significantly from the 2019 pricing, placing Eswatini well below regional peers in terms

closer to achieving its universal service and access goals • **In short case study analysis, we see that the prices for the 1GB data basket continued to decrease in the year following the end of the Price Transformation Programme. This is evident of the trickle down and delayed impact that the vertically integrated wholesale and retail markets. Furthermore, this decrease in prices has placed Eswatini lower than its regional peers in terms of the cost of a monthly 1GB prepaid bundle.** • **Eswatini's voice/SMS prices decreased between 2017 and 2019. Eswatini's voice/SMS basket was comparable to that of its peers at USD 5,81.**	of data costs. The pricing submitted for 2020 shows that Eswatini's 1GB data basket at USD 6,06 is significantly lower than Botswana, Namibia, and Lesotho at USD 8,25, USD 9,79, and USD 6,12 respectively. • The Voice/SMS backset for Eswatini came in as the sixth lowest pricing in a comparison of 10 countries, lower than its regional peers Botswana and Namibia. This shows that this market product has adjusted to the developments and changes in the market and has become a lot more affordable for the average end user. • The Universal Access and Service Strategy has a primary mandate and pillar to increase affordability to all citizens; the Commission together with the UAS Strategy can implement e-Rate pricing for schools, health centers, institutions of higher education and training centers, Tinkhundla Centres, Libraries, and Police Stations. • Retail prices should be determined by market forces. However, in the case of Dominant player it would be regulatory sound for the Commission to impose a price ceiling and a price floor in order to ensure that the market remains effectively and efficiently competitive. This Price Celling and Floor is to be determined by the Commission the at appropriate time.

Figure 1: Eswatini Wholesale National Leased Line Pricing - 60% Glide Path

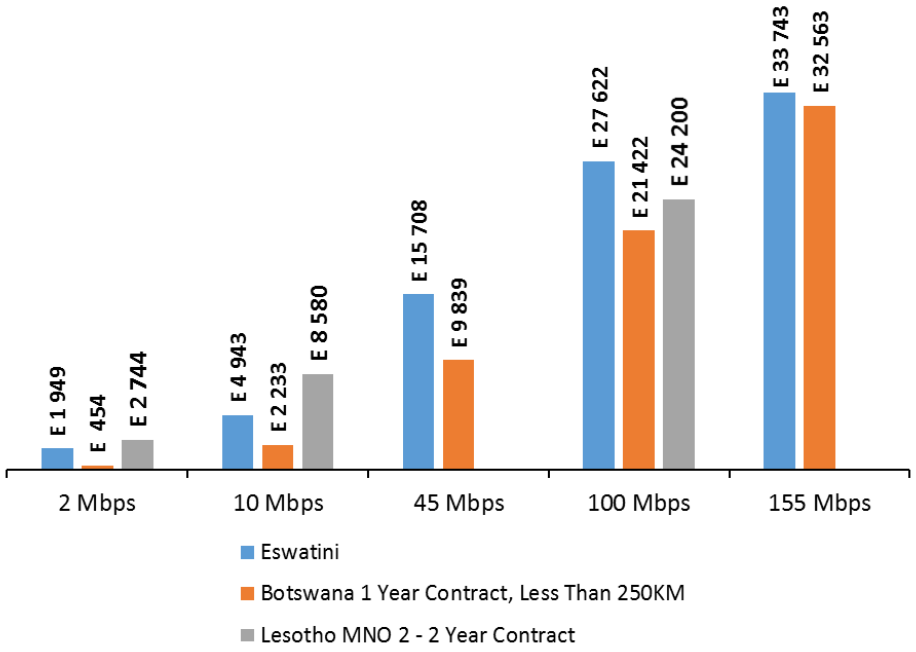
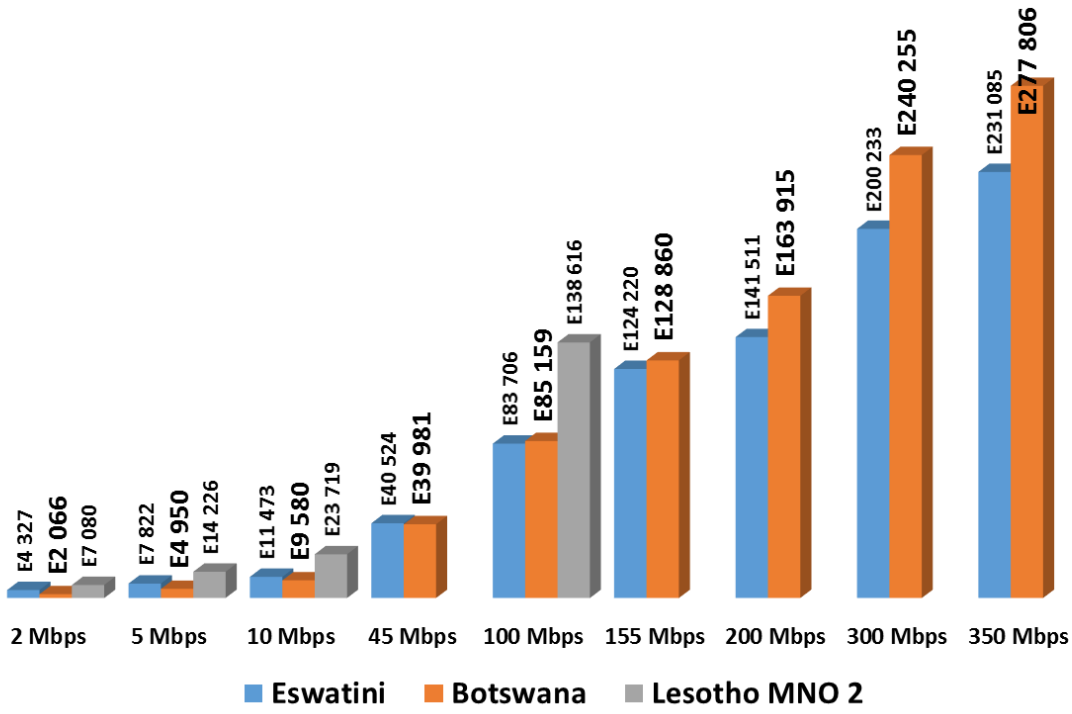


Figure 2: Eswatini Wholesale Dedicated Internet Pricing – 60% Glide Path



Overall, this Report recommends that Eswatini should continue to put in place measures to reduce prices in the wholesale market; it is recommended that the Commission look at negotiating a single flat installation fees applicable across the board regardless of speed and secondly that a glide path or 50% reduction be implemented. The Commission is encouraged to create a more enabling regulatory and policy framework to encourage a competitive and transparent wholesale and retail pricing environment. This can be achieved through the adoption of regulatory prescripts for accounting separation. In the retail market is it recommended that the Commission establish a price ceiling and floor for both the voice/sms basket and the 1GB prepaid basket as this would protect the market against cannibalizing itself and ensure sustainability of pricing. Lastly, it is recommended that the Commission implement an e-Rate that would allow for further subsidies for key national institutions such as healthcare facilities, schools, higher education and training centres, government offices, and ports of entry.

2. INTRODUCTION

In 2017, ESSCOM produced a Pricing Baseline Report for the communications sector ("The 2017 Report"). The 2017 Report found that the cost to communicate in the Kingdom was relatively high compared to peer countries in the Southern African Development Community ("SADC") region. High retail costs, specifically for voice/SMS and data were mainly attributed to high input costs as well as high wholesale internet bandwidth and leased line tariffs arising from a lack of competition.

Against this background, this Price Benchmark Report, the second report in the Pricing Study, delivers on two main objectives:

- **Wholesale:** Wholesale prices are the prices that operators charge each other, or that are charged to high volume users such as ISPs. This report documents wholesale pricing in Eswatini currently and over the past 3 years. It furthermore benchmarks Eswatini's wholesale pricing for international leased lines, national leased lines as well as wholesale bundles and commercial bundles. Wholesale pricing is a direct input to retail pricing, these markets are vertically integrated. As such it is important to consider these two sides of the same coin when doing an analysis.
- **Retail**: It benchmarks Eswatini's prepaid voice/SMS and data prices against those of regional peers which comprise (1) SADC peers of a similar population size; (2) African markets with competitive mobile markets and (3) markets where MTN operates and/or is the largest operator. Retail prices have direct impact on how demand for ICT services is stimulated and its perceived accessibility to all citizens.

Over the period under review (2016 – 2019) the Price Transformation Programme was implemented focussing on reducing pricing through:

- Reducing the pricing in the wholesale market as it is a primary market in setting the retail cost floor.
- ESCCOM's transparent negotiations with operators which resulted in wholesale price reduction commitments. This approach is in line with best practice which dictates that wholesale level interventions should precede any retail interventions – they should also necessarily have a knock-on impact on the cost-to-communicate.

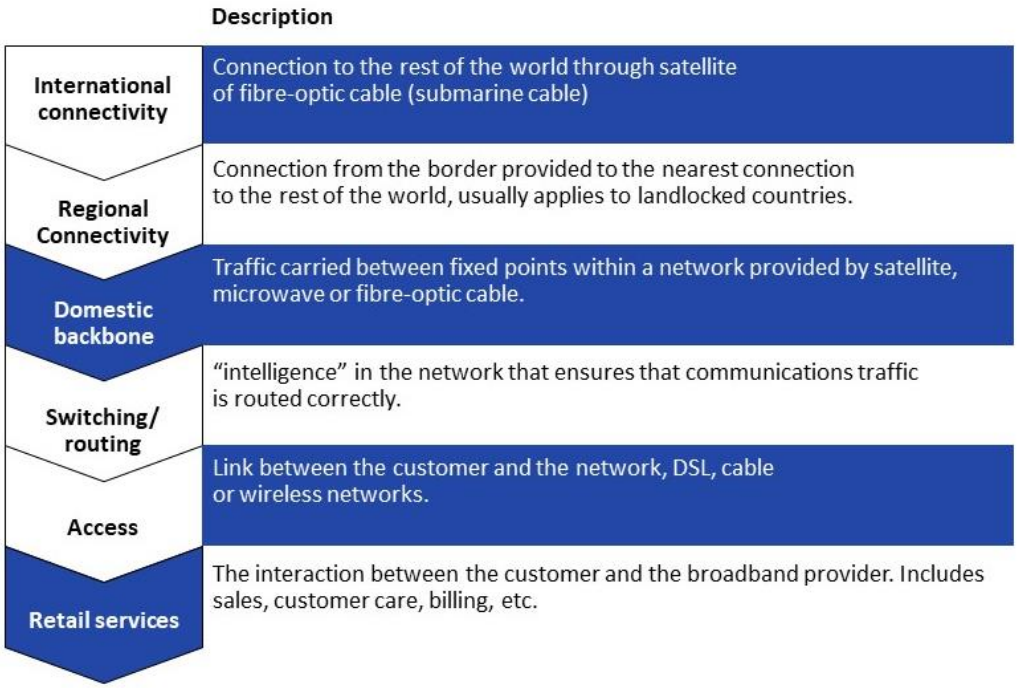
This Price Benchmarking Report provides ESCCOM with insight into the impact and effectiveness of the Price Transformation Programme. The findings of this report will inform price regulation going forward, as well as other regulatory measures that may be put in place to increase universal access and service and ensure that communications services are provided in a manner that will best promote economic and social development in the Kingdom of Eswatini.

3. POLICY AND REGULATORY CONTEXT: THE BROADBAND VALUE CHAIN

3.1 Backbone Infrastructure

The figure below illustrates the broadband supply chain, from international connectivity through to retail services[3]. Each layer of the supply chain introduces cost elements that affect the pricing of telecommunications services charged to retail users. All of the elements contribute to either wholesale (national backbone in the supply chain) or retail pricing.

Figure 3: Broadband value chain



Source: William C (2008), Broadband for Africa

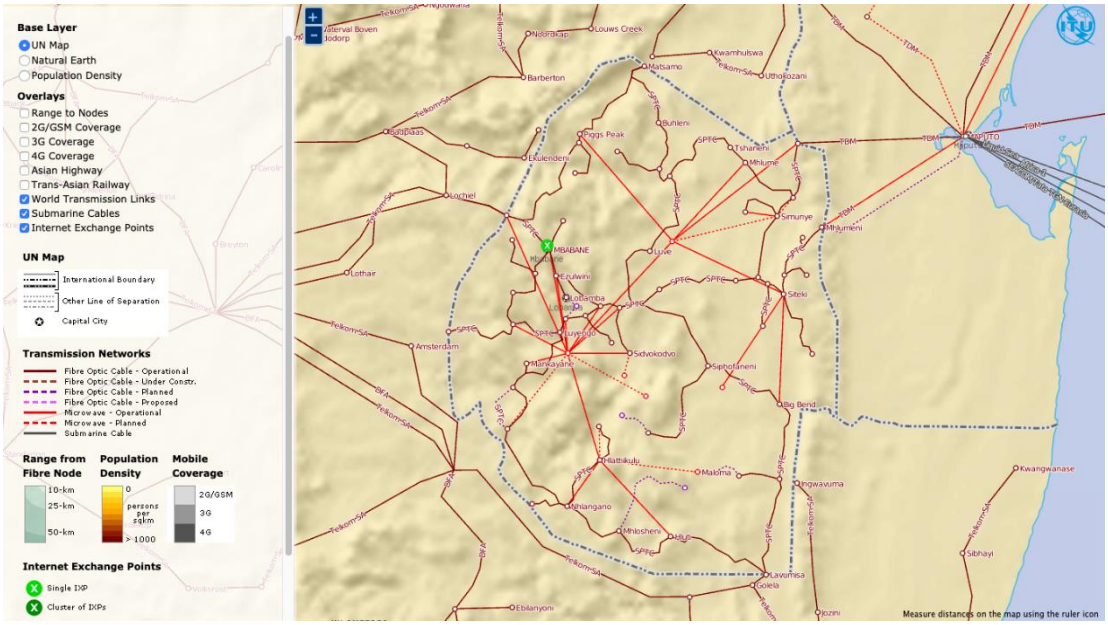
The Kingdom has two international breakaway points connecting the country to the WACS submarine cable on the west through Oshoek and to the SEACOM submarine cable through Lomahasha in the east. The Oshoek breakaway point connects to the TERACO data centre in Johannesburg, through the South African Internet Exchange (SAIX) while the Lomahasha breakaway point connects to SEACOM through

[3] https://openknowledge.worldbank.org/bitstream/handle/10986/2422/536430PUB0Broa101Official0Use0Only1.pdf?sequence=1&isAllowed=y

Maputo. This ring topology provides full redundancy and is further protected through Mahamba for the western links and Mthunzini (in South African via the EASSy submarine cable) in the east[4]

Domestic backbone, traffic carried between fixed points using microwave, fibre or satellite, is the exclusive domain of EPTC. In Eswatini, EPTC holds the rights to build and operate the backbone infrastructure in the Kingdom as conferred to it by the Electronic Communication Act. The national telecommunications backbone is a next generation network infrastructure based on fibre-optic with a double-ring network topology as shown in the figure below[5]:

Figure 4: Eswatini backbone infrastructure



Source: ITU

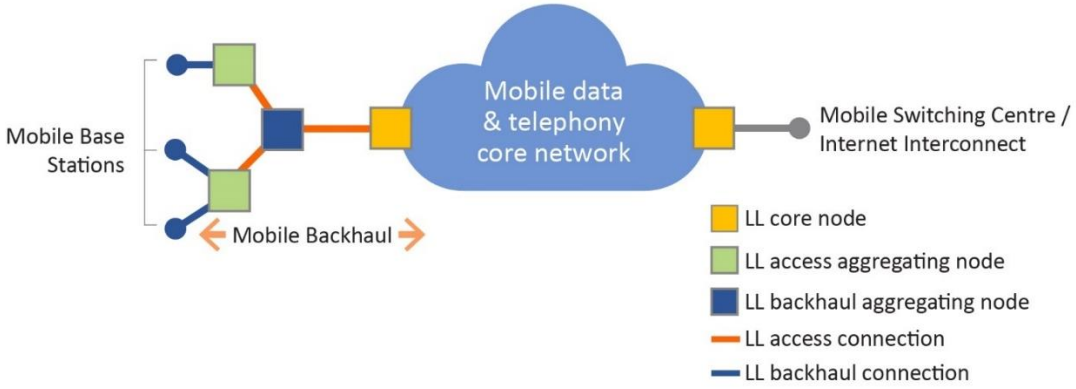
The lack of competition in the backbone infrastructure layer impacts pricing and may have the impact of keeping wholesale prices high, despite increased competition recently through additional ISPs and Eswatini Mobile providing services at the access and retail layers.

At the domestic level, Eswatini installed a new national Internet Exchange Point (IXP) in 2014, in partnership with the African Union Commission (AUC). This initiative is aimed at faster, secure and cost-effective internet transfer by ensuring local routing of national and regional internet traffic.

A key input to pricing is leased lines. Leased lines provide the connections between business and network nodes – points that enable routing and connections for telecommunications network providers and end-users – enabling the network providers to exchange information and network access to their customers to the backbone infrastructure to support internet and voice/SMS services. The figure below[6] shows the relationship between mobile network operators' base stations to the backbone infrastructure.

[4] http://www.lldc2conference.org/custom-content/uploads/2019/03/ESWATINI-Report-on-Vienna-Programme-of-Action-VPoA-for-landlocked-Developing-countries-for-the-Decade-2014-2024-1.pdf
[5] https://www.itu.int/itu-d/tnd-map-public/
[6] https://www.ofcom.org.uk/__data/assets/pdf_file/0025/154591/volume-2-bcmr-final-statement.pdf

Figure 5: Mobile network connectivity



Source: Ofcom

Leased lines provide network operators (and ISPs) with access to the mobile and data core network (backbone infrastructure), which in turn provides international connectivity.

3.2 Retail Value Chain and Context

Affordability is a central tenet of universal access and service and is one of the Commission's key goals as set out in its mandate. The ECA provides that:

> *"universal service" means the minimum set of services of specified quality which is available to all users regardless of their geographical location, and in the light of specific national conditions, at an affordable price as may be defined under regulations made under the Act;*

The cost of services and devices is an important determinant of access and use. For this reason, pricing regulation is a central part of regulatory reform.

The primary remit of regulators in this regard is to establish whether the price of services is affordable for the population and reflects the cost of delivering the service. In markets where competition is insufficient to drive down prices, the regulator is concerned that costs are not misallocated to other parts of the business or used to subsidise other services in a non-transparent manner. Sections 25, 26, 27 and 28 of the ECA empower the Commission to impose obligations of non-discrimination, transparency, regulatory accounting, cost orientation and price controls in markets where there is insufficient or ineffective competition.

The potential of the telecommunication market lies in effective competition, which brings about rivalry amongst operators which results in the more efficient allocation of resources and enables lower prices. In competitive markets, operators use a number of strategies as a way of increasing profits, market share, and sales volumes, by varying the elements of the marketing mix: price, product innovation, distribution and promotion.

Low prices generally result in improved access and usage of ICT services, with a particular emphasis on mobile and broadband services. Due to liberalisation and increased competition in many African markets,

the cost of communication has been declining. The opportunity cost to Eswatini of not doing so has been high, as high prices have limited ICT service take up – especially data services.

3.2 Methodology

3.2.1 Objective

The broadband value chain discussed in the previous section informs the approach taken to analysing and benchmarking wholesale and retail prices in Eswatini. Any methodology is guided by the desired outcomes, and the data that is being processed to reach those outcomes. The central objective of benchmarking is to identify gaps and areas of potential improvement; this is done by measuring the performance achieved with another performance engaged in the same or similar activity. Alternatively, one could measure the performance achieved against what is regarded as 'best practice'.

In this report the following approach and methodology is used:

3.2.2 Wholesale Price Analysis and Benchmarking

The wholesale price analysis is undertaken through internal benchmarking, in terms of which EPTC's wholesale price changes are tracked from 2016 to 2019. The internal leased lines and bandwidth offerings were averaged for bandwidths up to 2 Mbps, 5 Mbps, 10 Mbps, 20 Mbps, 50 Mbps and 100 Mbps to give a general trend for leased line services most likely to be used by ISPs and MNOs that require access to the national backbone.

Furthermore, comparative international benchmarking was done against Botswana, a landlocked country with a similar population in the SADC region. Due to limited access to wholesale pricing data, only one country is analysed.

3.2.3 Retail Price Analysis and Benchmarking

The retail price analysis is undertaken through an internal benchmarking exercise which tracks prepaid SMS/voice and data basket pricing from 2016 to 2019.

In addition, comparative international benchmarking against peer countries is done using prices extracted from the Research ICT Africa (RIA) African Mobile Pricing (RAMP) Index.

3.2.4 Prepaid Mobile Voice and SMS Pricing

The RAMP Index uses the OECD methodology to examine the cost of making a set basket of calls over a monthly period in each country. Prices are converted to USD for ease of comparison across the countries. Mobile call baskets include a pre-determined number of calls and SMS messages each month. The analysis makes use of the OECD 30 call basket which is weighted at a total of 50 prepaid calling minutes per month and 100 SMSs per month. Unlike the OECD, which only examines prices of dominant operators in each market, the RAMP Index uses data for all operators in the market, which makes RIA's basket more reflective of consumer options available in the market. The price baskets are calculated based on the advertised lowest voice/SMS prices. The RAMP Index methodology is subject to availability of the data, which consists of advertised prices from MNO websites collected on a quarterly basis.

3.2.5 1GB prepaid tariffs

In terms of the 1GB benchmarking measure, this is guided by the OECD methodology, together with reputable ICT measurement studies such as the GSMA Intelligence, to ensure that this study follows internationally recognized standards. The rationale is that 1GB of data valid for a month gives a good measure of the sizable amount of data a consumer can reasonably use within a month. Furthermore, 1GB data cost (on a prepaid basis) is used as a proportion of monthly income to be able to measure how affordable mobile data is. The baskets are converted to a uniform currency (USD) to allow for comparison across African markets. The RAMP Index methodology is subject to availability of the data, which consists of advertised prices from MNO websites collected on a quarterly basis.

3.2.6 Retail Benchmarking Data Limitations

The RAMP Index is an effective and recognised measure for conducting pricing analysis in African markets. Notwithstanding this, there are a few data limitations which are noted herein for completeness. The limitations include:

- Collecting prices on mobile telecommunication products can be challenging due to product differentiation in the industry. Mobile phone consumers face different tariff plans, and they are billed based on destination and timing of the calls, for instance, phone calls can be classified as on-net or off-net, off-peak or peak, and subscribers can make use of over-the- top (OTT) services, social media bundles, SMS, and data services in addition to voice communication offerings.
- The RAMP Index data is dependent on advertised prices from individual MNO websites, as such it only captures the information published on the MNOs websites. There are situations where it is not possible to gather new data if the MNOs website is not updated during the collection period.
- The RAMP Index does not capture advertised data bundles which do not fit its definitions.
    - The RAMP Index does not capture post-paid data (which is less prevalent in most African markets) or packages on promotion which may be cheaper than prepaid prices (which tend to be short term in any event).
    - The 1GB measure is not necessarily a true reflection on how people use data, since in order to maximize their discretionary income, most subscribers will opt for cheaper alternatives such as OTT bundles, social media bundles, or a MiFi device with data offerings.

It is well known that currently, the use of social media (such as Facebook, Twitter, WhatsApp and Instagram) is a driver of Internet uptake on the Continent, which allows users to form virtual networks and access information, entertainment and educational content. The RIA Index and related analysis does not capture social media bundles which are likely to be purchased by those who face income constraints but have access to an appropriate internet enabled device; it is noted however that this allows these subscribers to compensate for the high cost of data in many African countries. Therefore, the concept of capturing the lowest priced bundle may not necessarily represent the plethora of available offers or demonstrate the factors that affect subscriber's choice architecture. Thus, this implies that consumers are less likely to consider all available options to rationalize choosing one offer over another.

The RAMP Index uses the lowest priced bundle offered by a mobile operator as a benchmark for cross country level pricing analysis, however this price does not necessarily represent the national MNO prices as that operator may not have the largest market share to be representative of the entire country. Furthermore, the validity of data may be compromised, that is, for instance in Zambia a law was passed in

favour of non-expiring data bundles (MTN and Airtel now offer non-expiry data), which means that service providers have been banned from prescribing expiry dates on internet bundles purchased by customers[7]. Lastly, the RAMP Index uses the quarterly average exchange rate to represent all prices in USD and for ease of comparison, hence the fluctuations on a quarterly basis may result in price discrepancies. All of the limitation mentioned above, are addressed when doing the analysis of the data.

In instances where Eswatini local currency is used, the USD / SZL conversion rate applied as per the table below – sourced by RIA from the xe.com website

Table 1: Eswatini Quarterly Exchange Rate, 2017Q1 - 2019Q4

Eswatini Quarterly Exchange Rate, 2017 - 2019	
Quarter	Exchange Rate
2017_Q1	13,21
2017_Q2	12,90
2017_Q3	13,16
2017_Q4	13,62
2018_Q1	11,95
2018_Q2	12,62
2018_Q3	14,29
2018_Q4	14,29
2019_Q1	14,01
2019_Q2	14,36
2019_Q3	14,68
2019_Q4	14,68

Source: RIA, 2019

[7] *Chris Phiri, "Parley Adopts Motion to Stop Data Bundle Expiry," 2019, https://zambiareports.com/2019/07/25/parley-adopts-motion-stop-data-bundle-expiry/.*

4. WHOLESALE ANALYSIS AND BENCHMARKING

4.1 INTRODUCTION

The benchmarking exercise presented below provides some insight into the efficiency of the Price Transformation Programme and the effects of market competition on wholesale pricing. This benchmark report supports the situational analysis conducted as deliverable two of this project. The pricing that is considered in this report is international leased lines, national leased lines as well as commercial and wholesale bundles.

4.2 INTERNAL BENCHMARKING

EPTC offers two main types of wholesale services for different bandwidth offerings, measured in Megabits per second (Mbps) and STMs (Synchronous Transport Modules).[8] The main wholesale services which are discussed in turn in this report are:

- **International leased lines,** which are dedicated circuits that terminate beyond the Eswatini borders, mostly at the TERACO data centre in South Africa. They are used mainly by large businesses and multinational companies that require direct and dedicated capacity, allowing the business user sole access to all connections on that part of the electronic communications network. Pricing for international leased lines includes a once-off installation fee and a monthly rate that increases with the bandwidth required by the wholesale customer. EPTC offers international leased lines up to STM-4 (~622 Mbps), which is the standard capacity required for breaking out into the internet and accessing the world.
- **National leased lines,** which are dedicated circuits operating within Eswatini and are used by ISPs and large business users within the Kingdom. National leased line services are provided through ADSL (supplied over copper) and fiber. Pricing for national leased lines includes a once-off installation fee, a monthly leased line rental fee and a dedicated internet bandwidth fee – which increase with the bandwidth.

In Eswatini, leased line charges include three elements –

- installation charges (charged once off),
- monthly usage charges; and
- monthly internet (bandwidth) charges.

Combined, these charges represent the financial outlay that a consumer must make to obtain the service – it is thus important that the three elements are considered in assessing costs and the impact of the Price Transformation Programme.

4.2.1 International Leased Lines

The figures below indicate the trend in international leased line prices in the Kingdom since 2017.

8 STM is the ITU-T fibre optic network transmission standard for synchronous digital hierarchy that offers flexible management performance. The STM is made up of levels that increase by a factor of four (4) at a time, with STM-1 having a bit rate of 155,52 Mbps. Other supported levels are STM-4, STM-16, STM-64 and STM-256.

Figure 6: Installation fees for wholesale international leased lines.

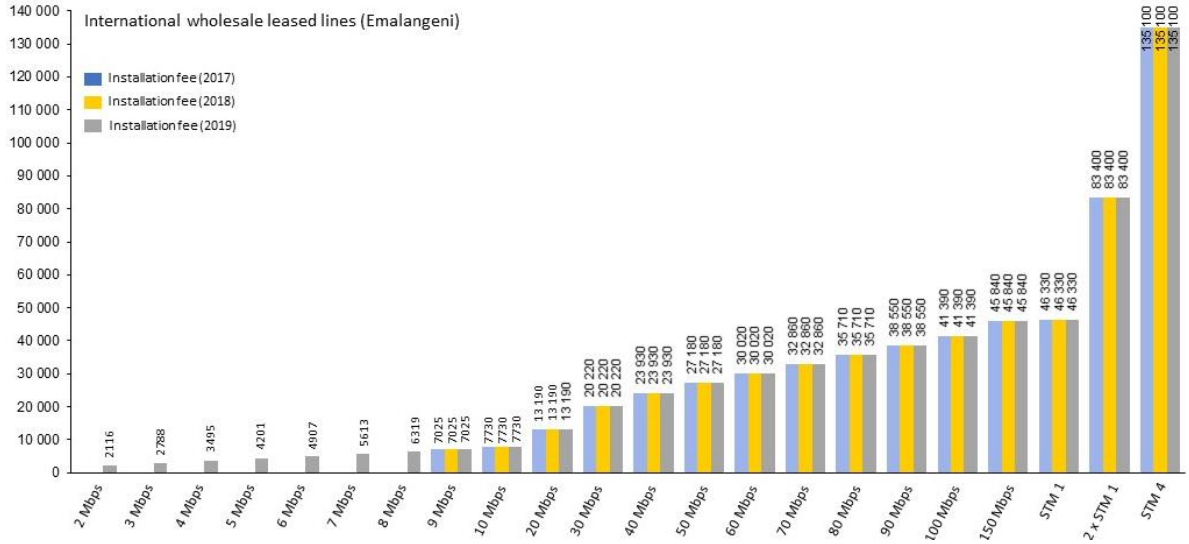
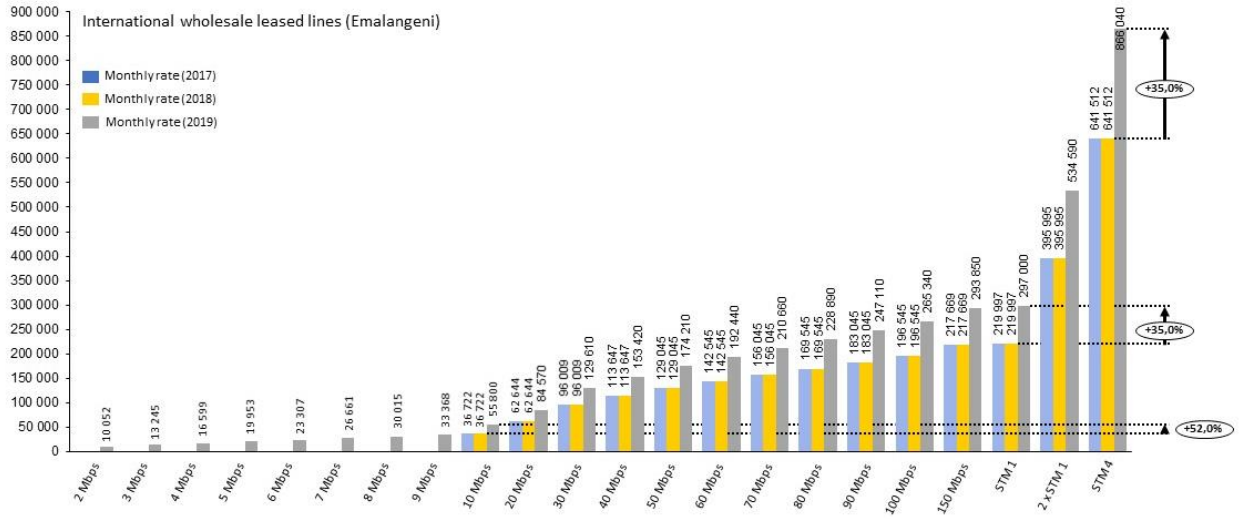


Figure 7: Monthly rate for wholesale international leased lines.



Installation fees remained constant throughout the three-year period to 2019 for all the bandwidth offerings, ranging from E 7 730 for 10 Mbps to E 135 100 for STM-4. It is important to note that the regulatory interventions to date have not focussed on this element of the pricing and as such the pricing behaviour described is driven by EPTC and the market.

Turning to usage, the monthly rates for international leased lines were constant between 2017 and 2018. In 2019, they rose by 52% for10 Mbps (from E 36 772 in 2017/18 to E 55 800 in 2019) and by 35% for STM-1 (from E 219 997 in 2017/18 to E 297 000 in 2019) and STM-4 (from E 641 512 in 2017/18 to E 856 040 in 2019). The increase exceeded inflation which was 4.8% in 2018 and 5.87% in 2019[9].

[9] *Central Bank of Eswatini*

4.2.2 National Leased Lines

- In 2016, EPTC charged once-off wholesale installation fees for its national copper links to the border, its dedicated fibre links and its dedicated internet service. In addition to the once-off installation fees, EPTC charges monthly usage or line rental fees and monthly internet (bandwidth) fees.
- In 2017, EPTC introduced copper-based national leased lines at wholesale rates in addition to the dedicated fibre.
- Following negotiations with the Commission, 2018 saw the consolidation of EPTCs copper-based and fibre-based wholesale national leased line offerings to reflect the technology neutrality of the incumbent's license and services within the Kingdom, with each leased line speed offering including a once-off installation fee, a monthly rental rate and a monthly internet (bandwidth) rate.

The analysis on the installation and monthly usage and internet fees for national leased lines thus assesses price changes for both copper-based leased lines and dedicated fibre-links for the assessment period for data speeds of 2 Mbps, 5 Mbps, 10 Mbps, 50 Mbps, 100 Mbps, 155 Mbps (STM-1), 1 000 Mbps, 2 000 Mbps, 3 000 Mbps and 4 000 Mbps - the maximum speed package offered in the Kingdom.

The figures below indicate the overall changes in installation, monthly usage and monthly internet (bandwidth) fees from 2016 to 2019. The following are key findings:

Installation fees

- In 2016 – the baseline year – installation fees for copper links were lowest at E 1 157 for 2 Mbps, followed by the installation fees for dedicated fibre links, which were constant at E 2 316 for all bandwidth offerings up to 100 Mbps. Installation fees for dedicated internet connectivity were the highest ranging from E 8 780 for 5 Mbps to E 248 695 for 100 Mbps.
- Installation fees for dedicated fibre links in 2017 ranged from E 3 500 for 2 Mbps and E 8 500 for 1 000 Mbps. The introduction of technology-neutral pricing in 2018 for national leased lines resulted in the maintenance of the 2017 wholesale installation fees for the copper-based national leased lines. These installation fees were maintained at between E 3 600 for 2 Mbps to E 413 950 for 4 000 Mbps until the end of the assessment period in 2019.

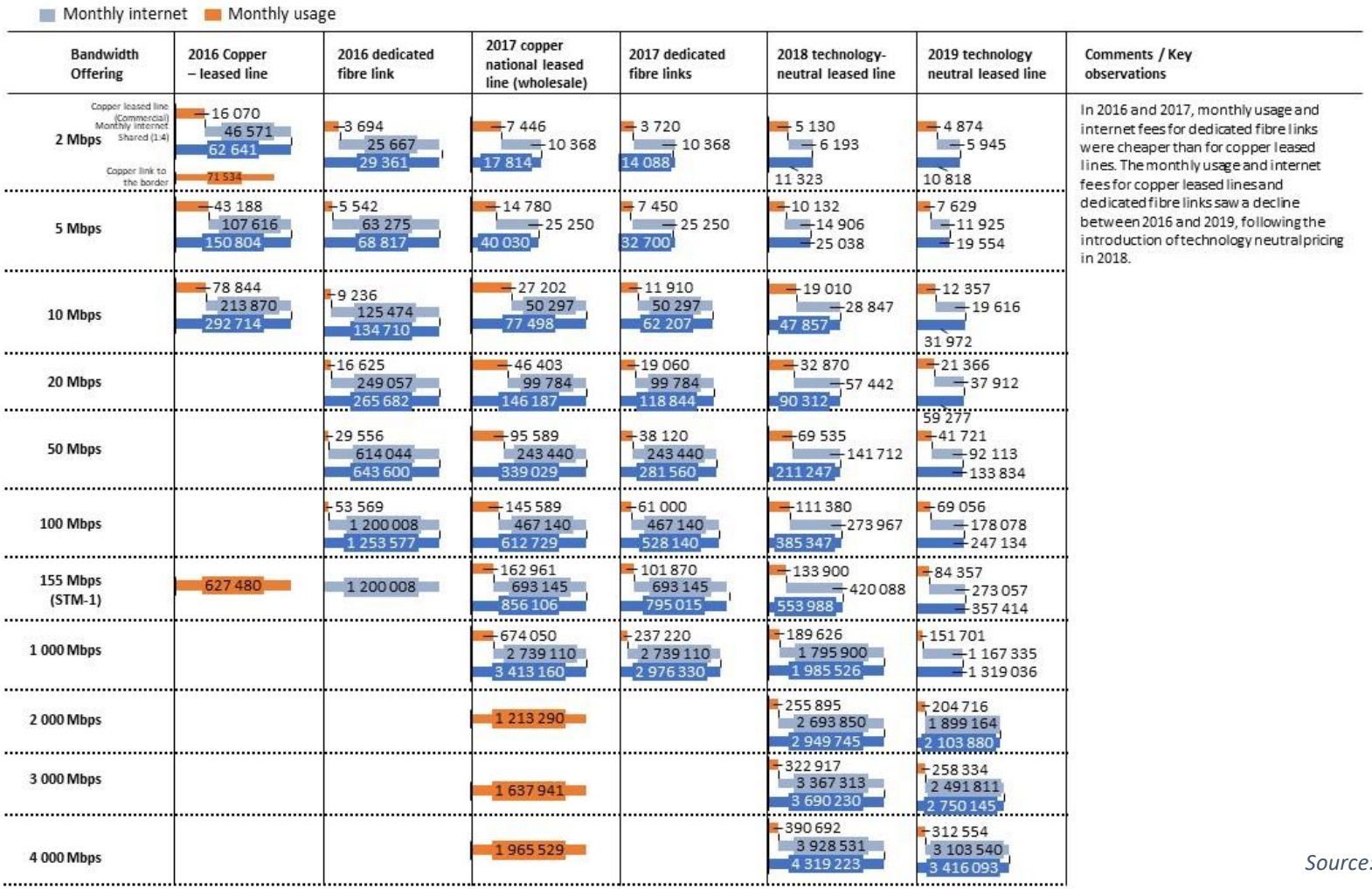
Monthly usage charges

- In 2016 and 2017, monthly usage and internet fees for fibre were about E 3 500 cheaper than for copper leased lines. Monthly fees for fibre links were E 14 088 for 2 Mbps compared to E 17 814 for copper leased lines in 2017.
- The consolidation of pricing for copper-based national leased lines and dedicated fibre links in 2018 resulted in decreases in monthly usage and bandwidth fees, with total monthly fees (usage and bandwidth) reducing by 19,6% to E 11 323 for the 2 Mbps offering in 2018 and by a further 4,5% to E 10 818 in 2019.

Figure 8: Overall installation fees for national leased lines and dedicated fibre links, 2016 - 2019.

Bandwidth Offering	2016 Copper – leased line (commercial)	2016 dedicated fibre link	2016 dedicated internet	2017 copper national leased line (wholesale)	2017 dedicated fibre links	2018 technology-neutral leased line	2019 technology neutral leased line	Comments / Key observations
2 Mbps	2 313 Local copper links 1 157 Copper links to border	2 316	3 500	3 600	3 500	3 600	3 600	In 2016, copper links to the border had the lowest installation fee. The fee increased for dedicated fibre links to E 3 500 for all available bandwidth offerings. Installation costs for copper and technology neutral leased lines remained at E 3 600 since 2017.
5 Mbps	2 313	2 316	8780	4 800	3 500	4 800	4 800	In 2016, dedicated internet installation fees were the highest, with copper leased lines the lowest. In 2017, installation fees for copper leased lines were E 4 800. This rate remained until 2019.
10 Mbps	2 313	2 316	15 785	6 300	3 500	7 200	7 200	In 2016, dedicated internet installation fees were the highest, with copper leased lines the lowest. In 2017, installation fees for copper leased lines were E 6 300. This rate increased to E 7 200 in 2018, remaining until 2019.
20 Mbps		2 316	40 655	12 600	3 500	12 600	12 600	In 2016, dedicated internet installation fees were the highest. In 2017, installation fees for copper leased lines were E 12 600. This rate remained until 2019.
50 Mbps		2 316	135 610	20 533	5 600	20 533	20 533	In 2016, dedicated internet installation fees were the highest. In 2017, installation fees for copper leased lines were E 20 553. This rate remained until 2019.
100 Mbps		2 316	208 090	27 060	5 600	27 060	27 060	In 2016, dedicated internet installation fees were the highest. In 2017, installation fees for copper leased lines were E 27 060. This rate remained until 2019.
155 Mbps (STM-1)	81 320		248 695	34 320	7 800	34 320	34 320	In 2016, dedicated internet installation fees were the highest. In 2017, installation fees for copper leased lines were E 34 320. This rate remained until 2019.
1 000 Mbps				141 960	8 500	141 960	141 960	Bandwidth offerings greater than 1 000 Mbps were introduced in 2017, with dedicated fibre link installation at E 8 500. Leased lines installation fees remained constant at E 141 980 from 2017.
2 000 Mbps				255 520		255 520	255 520	Leased lines installation fees remained constant at E 255 520 from 2017.
3 000 Mbps				344 950		344 950	344 950	Leased lines installation fees remained constant at E 344 590 from 2017.
4 000 Mbps				413 950		413 950	413 950	Leased lines installation fees remained constant at E 413 950 from 2017.

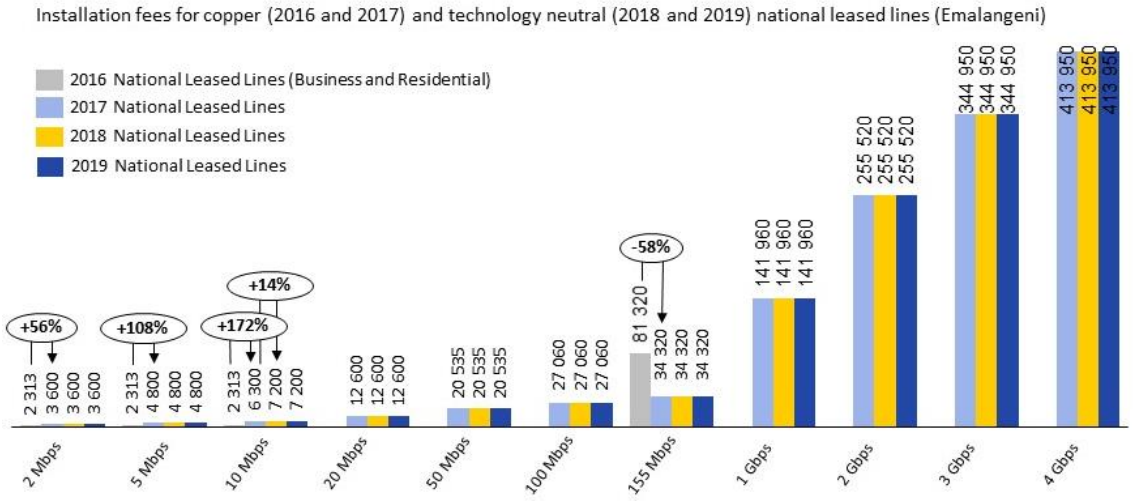
Figure 9: Overall monthly usage and internet fees for national leased lines and dedicated fibre links, 2016 - 2019.



Source: ESCCOM

The figure below indicates the installation fees for copper-based national leased lines for businesses only, from 2016 – when copper national leased lines were offered at commercial rates – to 2019 for the bandwidth speeds under analysis.

Figure 10: Installation fees for copper-based and technology-neutral leased lines

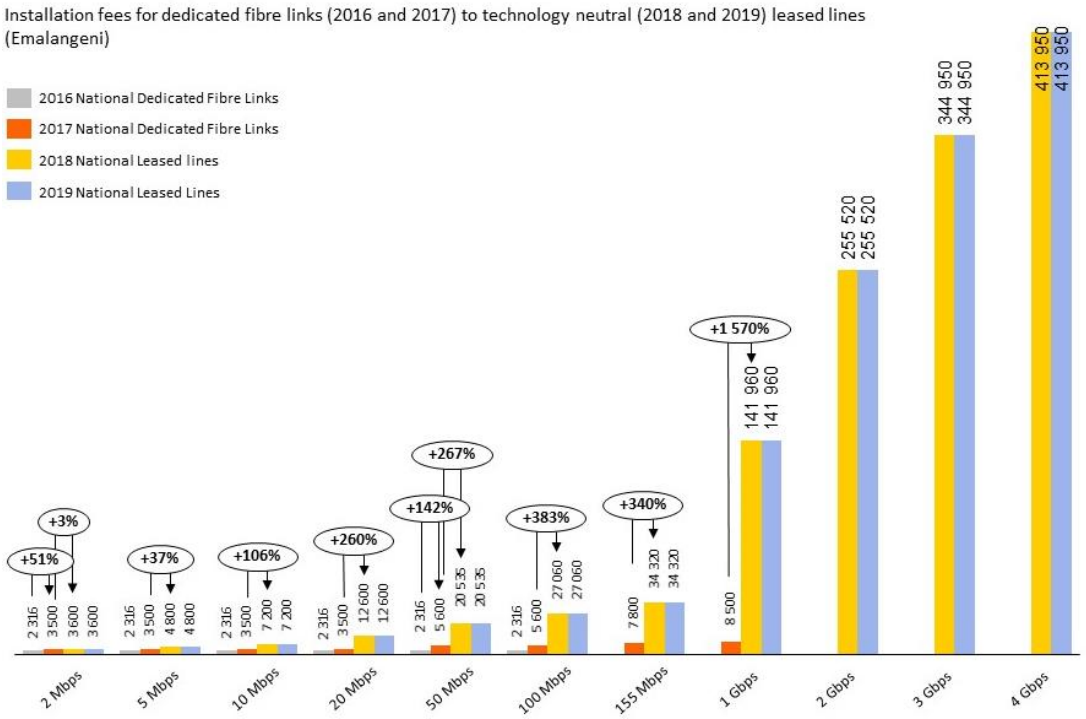


Source: ESCCOM

Installation fees for national copper leased lines increased by between 56% and 172% between 2016 – where they were offered at commercial rates – to 2017 at the introduction of national leased lines at the wholesale level. Installation for the STM-1 offering showed a decrease of 58% from E 81 320 to E 34 430 between 2016 to 2017. From 2017, national copper leased line installation fees remained the same for each bandwidth offering, with installation costs for the 10 Mbps offering rising by 14% between 2017 and 2018. The installation fees for 2018 and 2019 range from E 3 600 for 2 Mbps offering, to E 413 950 for the 4 000 Mbps offering.

The figure below indicates the installation fees for national dedicated fibre links from 2016 to 2017, as well as the technology-neutral installation fees for 2018 and 2019.

Figure 11: Installation fees for dedicated fibre links (2016 and 2017 to technology neutral (2018 and 2019) leased lines.



As once off fees paid by first time subscribers to a particular service, installation fees affect the user's initial decision to take up the services. Specifically:

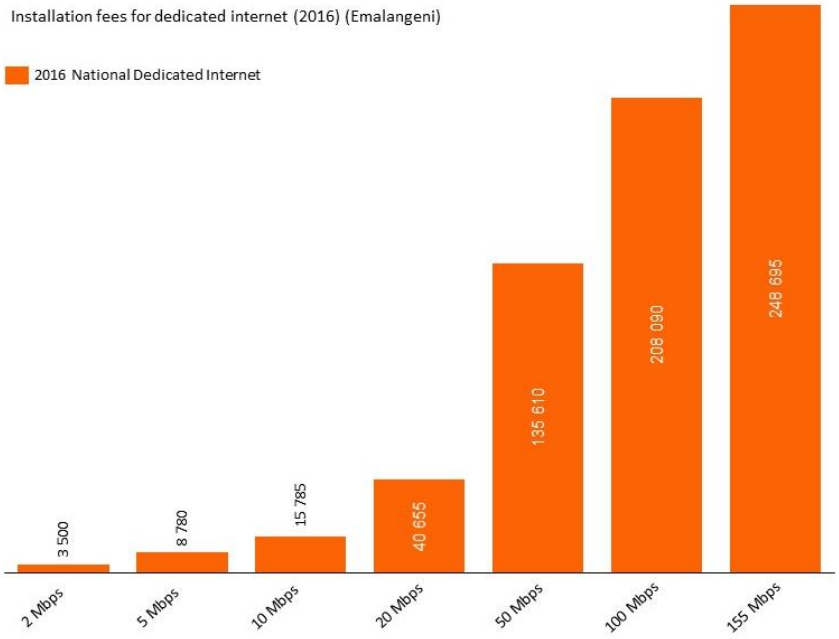
- The installation fees for dedicated fibre links increased by 51% from E 2 316 to E 3 500 between 2016 and 2017 for the 2 Mbps, 5 Mbps, 10 Mbps and 20 Mbps offerings.
- Installation fees for dedicated fibre links increased by 142% from E 2 316 to E 5 600 for 50 Mbps and 100 Mbps offerings.
- The move to technology-neutral national leased lines in 2018 saw an increase in installation fees for wholesale customers, with the higher bandwidth offerings (from 10 Mbps) experiencing the sharpest annual increases of between 106% (for 10 Mbps) and 1 570% (for the 1 000 Mbps offering).
- Installation fees for bandwidth offerings greater than 1 0000 Mbps range from E 141 960 for 1 000 Mbps to E 413 950 for 4 000 Mbps.

Whilst installation fees appear to have increased for dedicated fibre customers, these fees have been constant for copper-based national leased line customers since the introduction of the service in 2017. The high installation fees for offerings greater than 1 000 Mbps indicate that EPTC prices higher for corporates, ISPs and MNOs that can afford to install internet services at the higher fees for their speed requirements.

In 2016, prior to the Price Transformation Programme, wholesale dedicated internet (bandwidth) carried once-off installation fees that increased with an increase in bandwidth as seen in the figure below.

The analysis shows how internet installation fees ranged from E 3 600 for 2 Mbps to E 248 695 for STM-1.

Figure 12: Installation fees for dedicated internet, 2016.

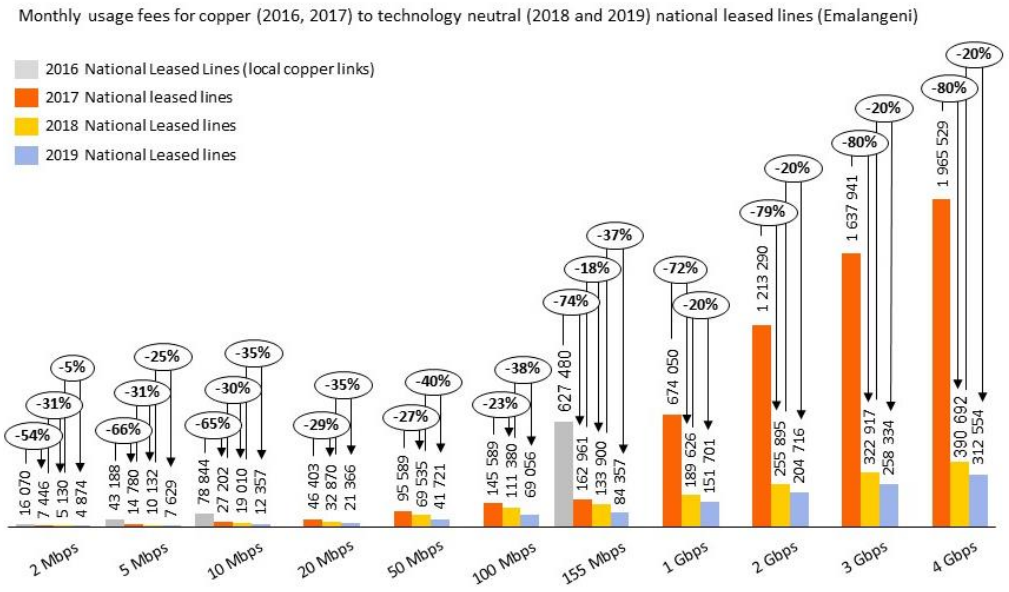


Source: ESCCOM

It should be noted that since 2017, EPTC no longer charges wholesale internet (bandwidth) installation fees. In addition to installation fees for copper national leased lines at commercial rates, dedicated fibre links at wholesale rates and dedicated internet, EPTC charged E 1 157 for copper links up to the border (referred to in 2016 as international leased lines).

The figure below shows the monthly usage fees for copper-based national leased lines from 2016 (at commercial rates) to 2019 (at technology-neutral wholesale rates). The monthly usage fees for leased lines has shown a downward trend for all the analysed bandwidths in the Kingdom.

Figure 13: Monthly usage fees for copper and technology-neutral national leased lines.
Source: ESCCOM

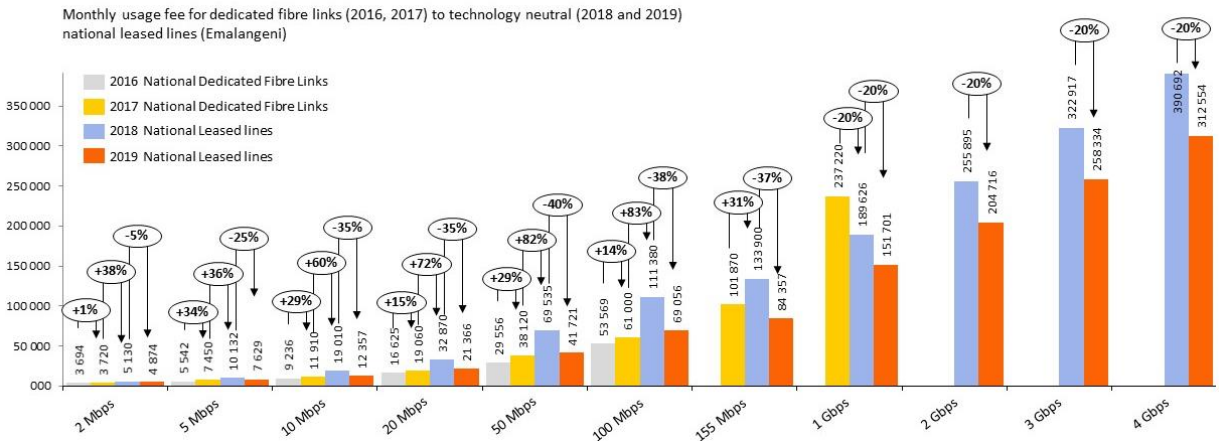


Monthly usage fees for copper local leased lines decreased by up to 74% between 2016 and 2017, with the STM-1 offering showing the greatest decrease from E 627 480 per month in 2016 to E 162 961 in 2017.

The local leased line usage costs for 2 Mbps were E 16 070, while the copper links up to the border were 345% higher, at E 71 534. Between 2017 and 2018, the monthly usage fees decreased by between 23% (for the 100 Mbps offering) and 80% (for the 3 000 Mbps and 4 000 Mbps offerings), with the highest offering (4 000 Mbps) priced at E 390 692 in 2018. 2019 saw further decreased in monthly usage fees for technology-neutral leased lines in the Kingdom, ranging from 5% for the 2 Mbps offering to 40% for 50 Mbps.

The figure below indicates the monthly usage fees for dedicated fibre links between 2016 to 2017, and technology neutral national leased lines for 2018 and 2019. Usage fees for fibre links increased by between 1% (for 2 Mbps) and 34% (for 5 Mbps) from 2016 to 2017.

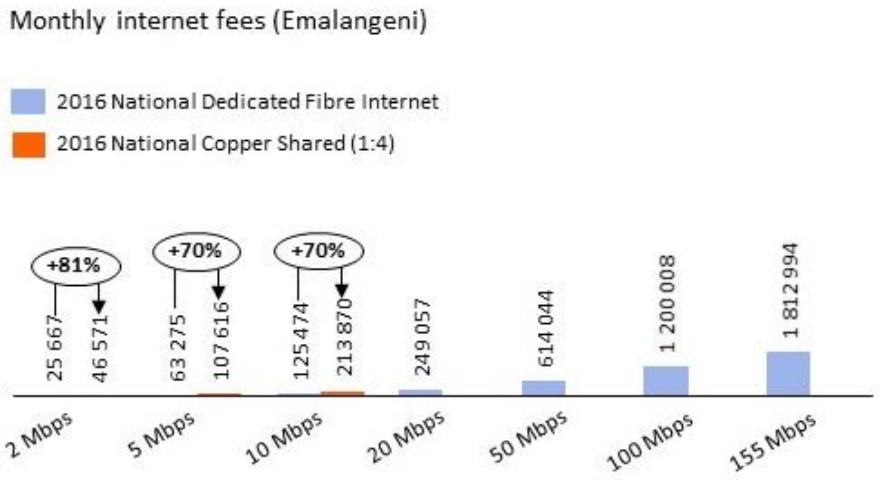
Figure 14: Monthly usage fees for dedicated fibre links and technology-neutral national leased lines.



The introduction of technology-neutral national leased line pricing in 2018 resulted in increases in usage fees for fibre-based customers, to align to copper-based national leased lines in the Kingdom. These fees increased by between 31% (for the STM-1 band) and 83% (for 100 Mbps). Introduced in 2017, bandwidth offerings greater than 1 000 Mbps, saw a 20% decrease in usage fees from E 237 220 in 2017 to E 189 626 in 2018. Monthly usage fees saw a decrease in 2019, ranging from 5% for the 2 Mbps offering to 40% for 50 Mbps, with usage fees for bandwidth offerings greater than 1 000 Mbps decreasing by 20%. Similar to the installation fees, the change to technology neutral pricing resulted in increases for the fibre-based customers in an effort to align their pricing to that of copper-based national leased lines.

The figure below indicates the internet (bandwidth) fees for copper-based national leased lines and dedicated fibre links for 2016.

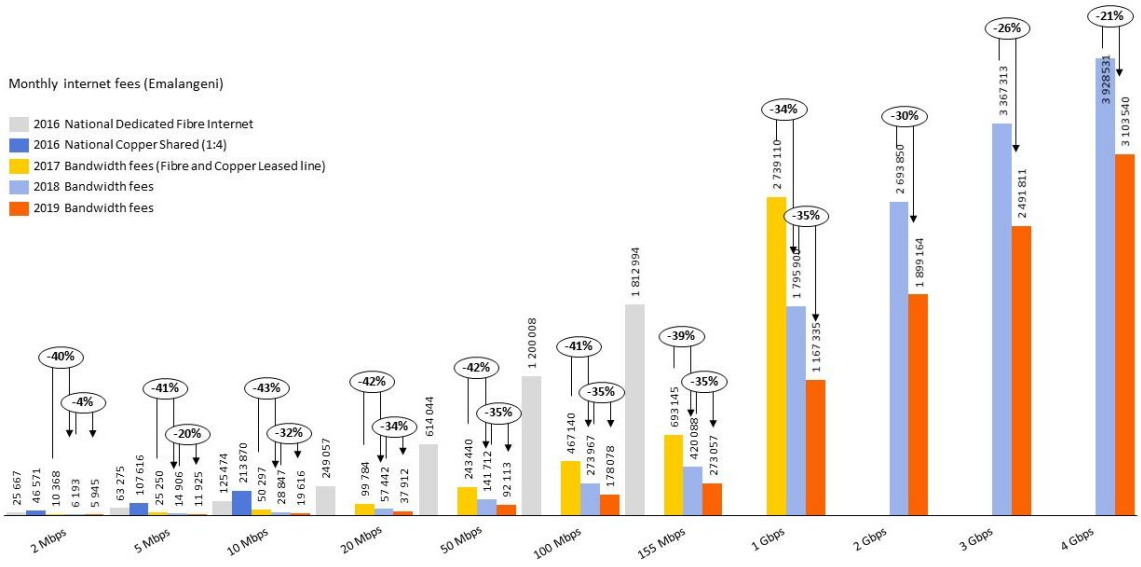
Figure 15: Internet (bandwidth) fees for copper-based national leased lines and fibre links, 2016.



In 2016, copper-based national leased lines were offered only on a commercial (retail) basis, with internet fees charged on a shared basis (1:4) – one customer shared the internet bandwidth with four other customers in an effort to reduce costs. The monthly dedicated fibre internet fees were 70% to 81% less expensive than the commercial shared internet fees for copper based national leased lines.

2017 saw the consolidation of dedicated internet fees on a wholesale basis regardless of technology. This consolidation was also introduced for installation and usage fees for 2018 and 2019. The figure below indicates the trend in wholesale internet fees between 2017 and 2019.

Figure 16: Monthly internet fees, 2017-2019.



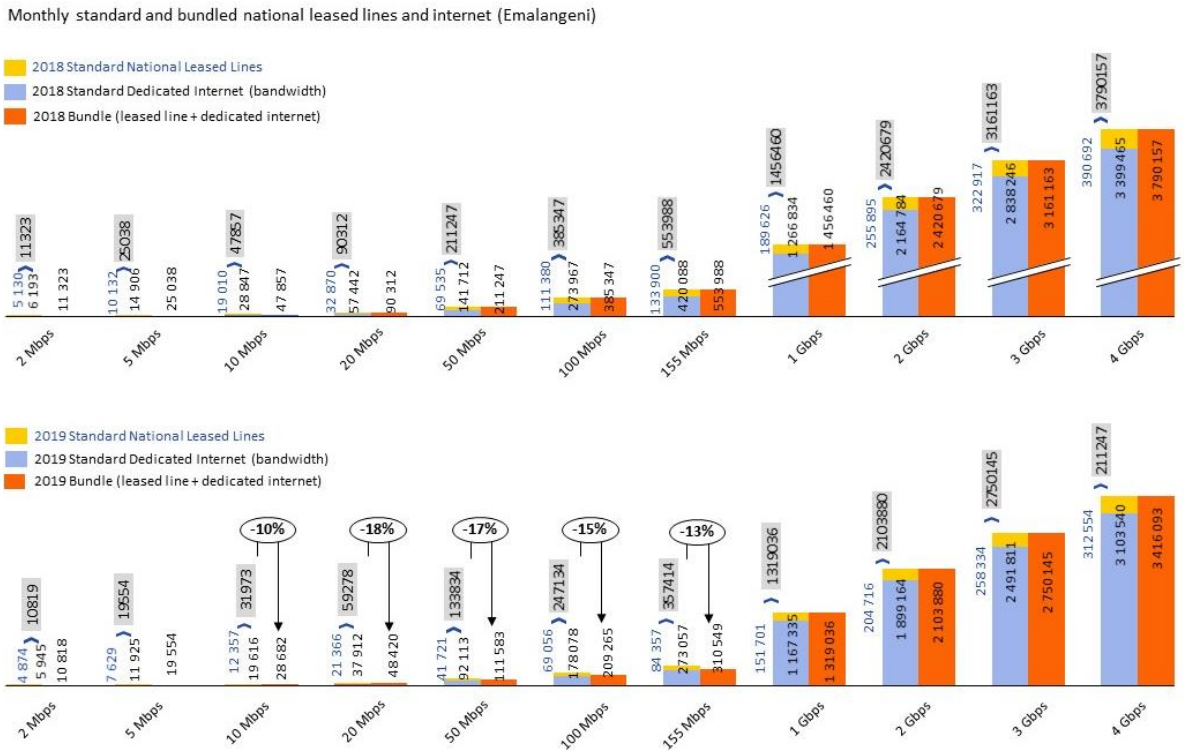
Source: ESCCOM

Monthly internet fees have reduced by between 34% (for 1 000 Mbps) and 43% (for the 10 Mbps) from 2017 to 2018. 2019 saw further reductions in the monthly internet fees, ranging from 4% (for the 2 Mbps offering) to 35% (for the 50 Mbps, 100 Mbps, 155 Mbps and 1 000 Mbps offerings).

4.3 WHOLESALE BUNDLES

In 2018, EPTC introduced wholesale bundles discounts for the monthly dedicated internet and leased line fee. The figure below indicates the wholesale standard and bundle fees offered in 2018 – 2019 for different numbers of leased lines as ordered by the wholesale customer, to indicate the discounts offered by EPTC.

Figure 17: Standard vs bundled leased line and internet offerings, 2018-2019.



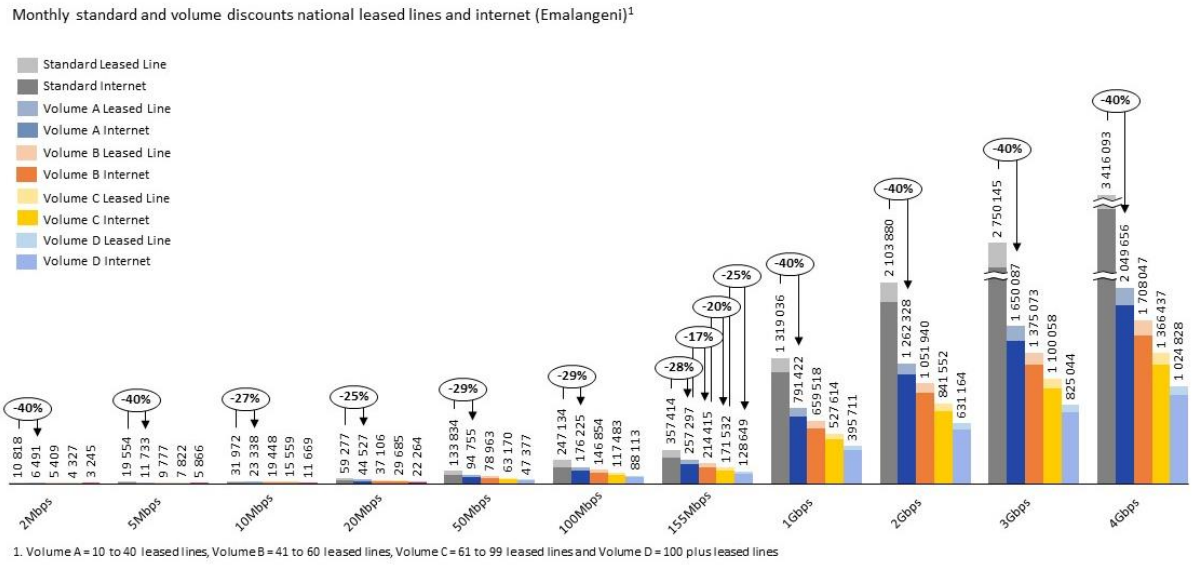
Source: ESCCOM

Whereas the bundle offerings for the analysed bands were the same as the standard pricing for 2018, the 2019 bundle offerings had significant discounts depending on the offering 10 Mbps (10% discount), 20 Mbps (18% discount), 50 Mbps (17% discount), 100 Mbps (15% discount) and STM-1 (13% discount).

In 2019 EPTC introduced volume discounts which are described in the figure below. Volume discounts apply to wholesale customers, such as ISPs, interested in multiple connectivity options. Volume based discounts for 10 to 40 leased lines (Volume A bundles) are between 25% (for 20 Mbps) and 40% (for 2 Mbps, 5 Mbps and bands larger than 1 000 Mbps) below the standard retail/ commercial price. Volume discounts for 41 to 60 leased lines (Volume B bundles) are 17% less than the price of Volume A bundles. Volume C bundles (for 61 to 99 leased lines) cost 20% less than the Volume B bundles. Volume D bundles are for more than 100 leased lines and cost 25% less than Volume C bundles.

If EPTC is making a profit on Volume C bundles, which cannot be confirmed without a cost analysis, this pricing structure raises a concern that commercial prices, which are the based price, are excessive. Alternatively, there may be cross subsidisation at play across the various bundles.

Figure 18: Monthly standard vs volume discount national leased lines and internet fees.



Source: ESCCOM

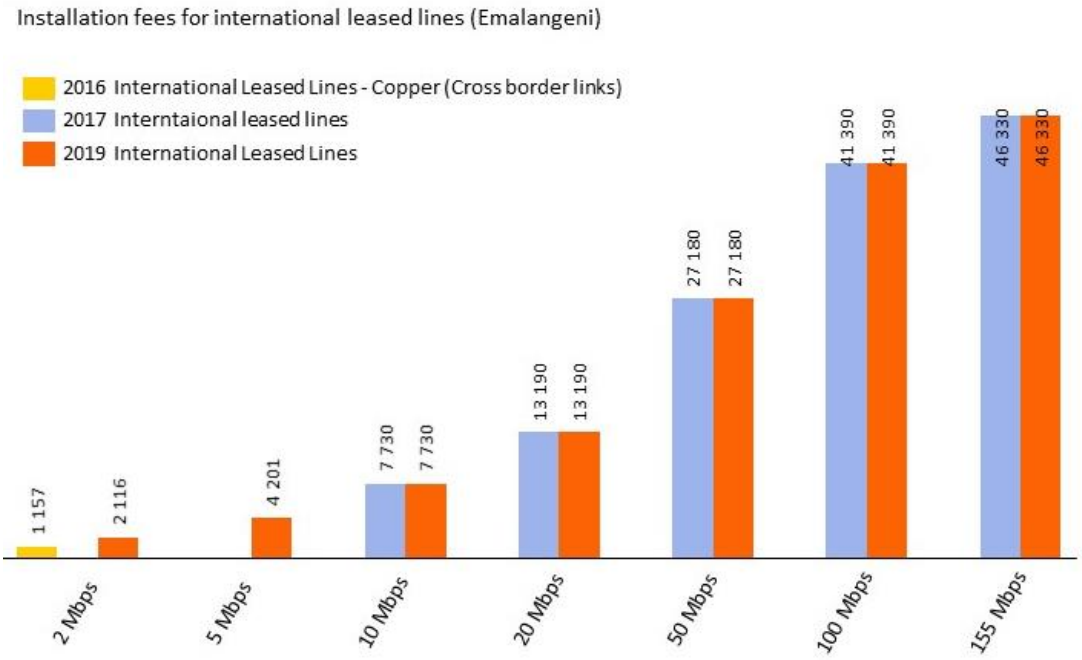
4.4 COMMERCIAL / RETAIL BUNDLES

Along with wholesale leased line and internet service access, EPTC provides international and national leased lines services at commercial (retail) rates. It competes with the MNOs and ISPs in the country in the provision of this service. This section highlights the installation, monthly usage and internet fees charged by EPTC for its commercial offerings as well as discounts introduced in 2018 for non-government organisations (NGOs) and learning institutions. The commercial rates are made up of the following fees:

- Once-off installation fees for the leased lines (international or national),
- Once-off installation fees for the shared or dedicated internet connection,
- Monthly leased line usage / rental fees; and
- Monthly shared or dedicated internet (bandwidth) fees.

The figures below indicate EPTC's commercial/ retail international and national leased lines installation fees. As already mentioned, international leased lines are provided for commercial customers (e.g. multinational banking, broadcasting companies etc.) to allow for sole access to all connections on that part of the electronic communications network that terminates, mostly, at the TERACO data centre in South Africa. National leased lines are dedicated circuits within the Kingdom.

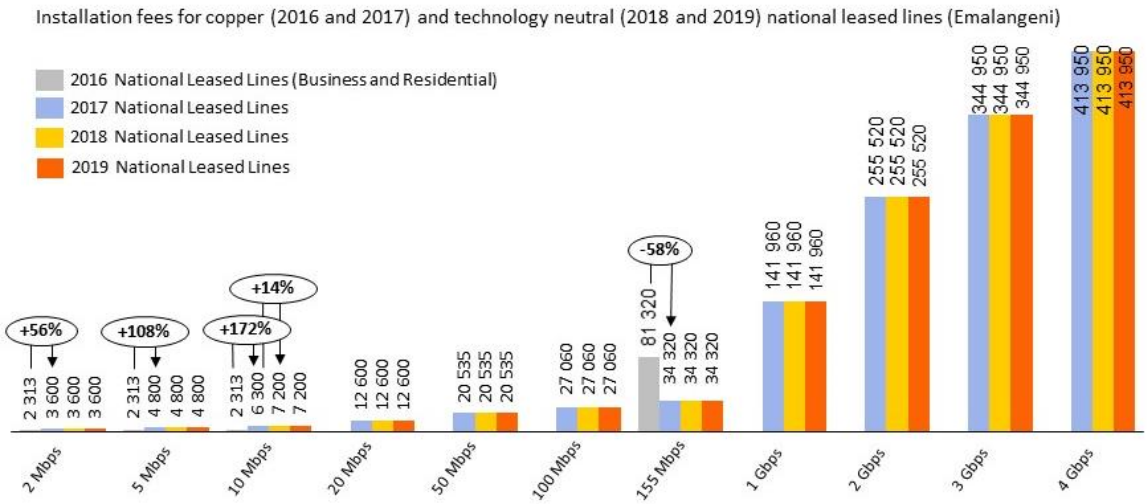
Figure 19: Installation fees for commercial international leased lines, 2016-2019.



Source: ESCCOM

In 2016 EPTC only offered international leased lines terminating at the border, the international leased line installation fees remained constant between 2017 – when the service was introduced – to 2019[10], ranging from E 7 730 for the 10 Mbps offering to E 46 330 for the STM-1 offering.

Figure 20: Installation fees for commercial national leased lines, 2016-2019.



Source: ESCCOM

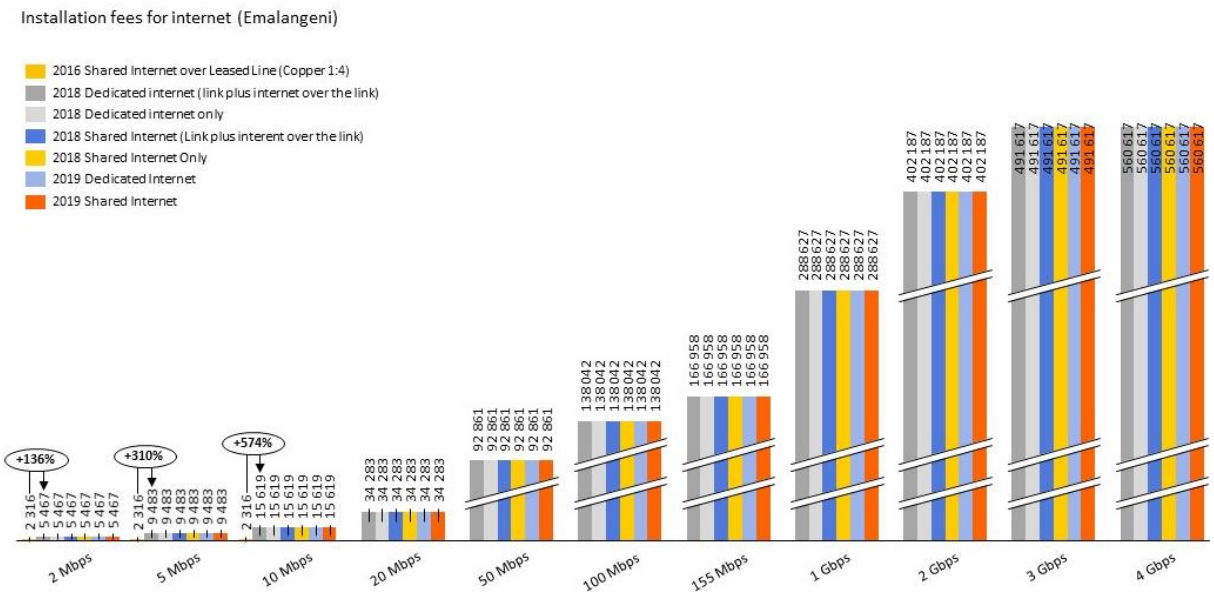
Installation fees for national leased lines have been slightly lower than for international leased lines, with a greater range of bandwidth offerings up to 4 000 Mbps. These installation fees increased by between

[10] *Although there was no data for 2018 international leased lines, it is assumed that the installation fees remained constant through to 2019 as is the case for national leased lines.*

56% to 211% between 2016 and 2017 for speeds up to 10 Mbps. Conversely, the much larger STM-1 offering decreased by 58% to E 34 320.

The figure below indicates the installation fees for the shared or dedicated internet connection offered at commercial rates from 2016 to 2019.

Figure 21: Internet installation fees, 2016 - 2019.



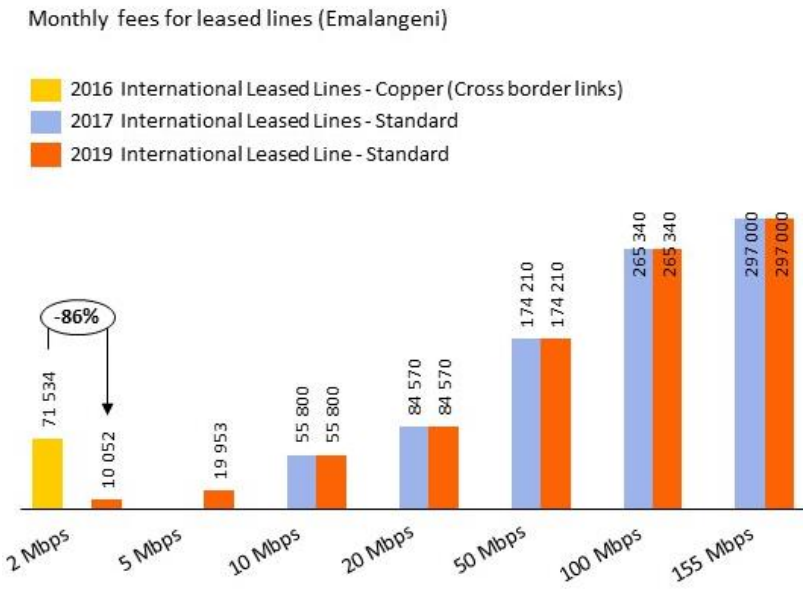
Source: ESCCOM

In contrast to the wholesale internet service pricing, commercial pricing includes installation fees for the internet service. Whereas this pricing element was included in 2016 for dedicated fibre links at a wholesale basis, it was removed in EPTCs wholesale pricing since 2017, with the introduction of national leased lines at wholesale levels. In 2016, the commercial internet installation costs were standardised at E 2 316 for the 2 Mbps, 5 Mbps and 10 Mbps, which increased by 136%, 310% and 574% by 2018[11]. From 2018, Installation costs are the same for each offering, regardless of whether the service is shared or used on a dedicated basis – these range from E 5 467 for 2 Mbps to E 500 617 for 4 000 Mbps.

The figures below show the monthly usage / rental fees for international and national leased lines.

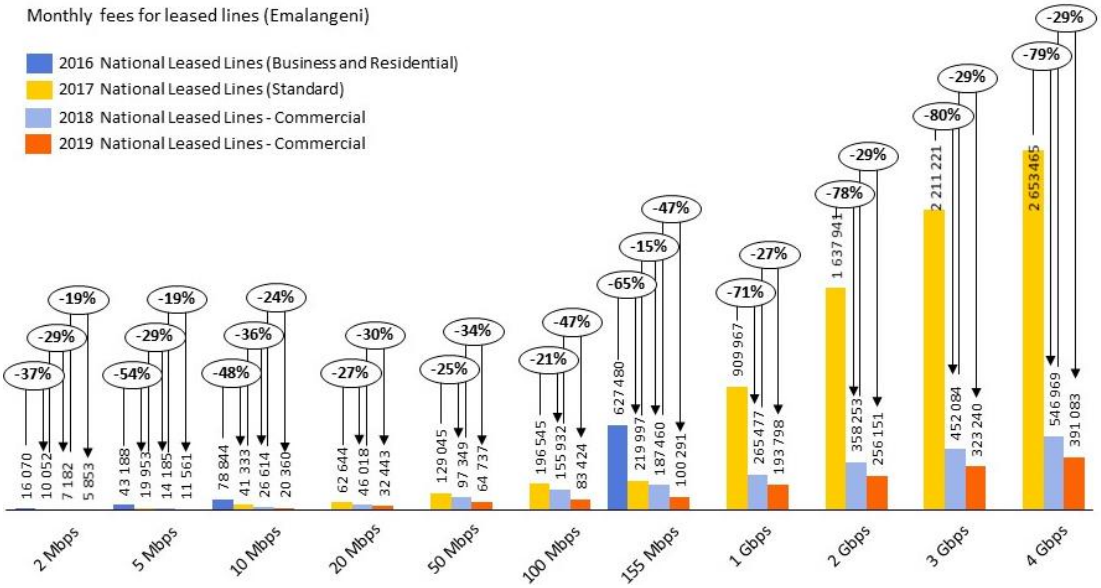
[11] *Although there was no data for 2017 internet installation fees, it is assumed that these rose to the 2018 rates, which remained through to 2019.*

Figure 22: Monthly usage fees for international leased lines, 2016-2019.



Source: ESCCOM

Figure 23: Monthly usage fees for national leased lines, 2016-2019.

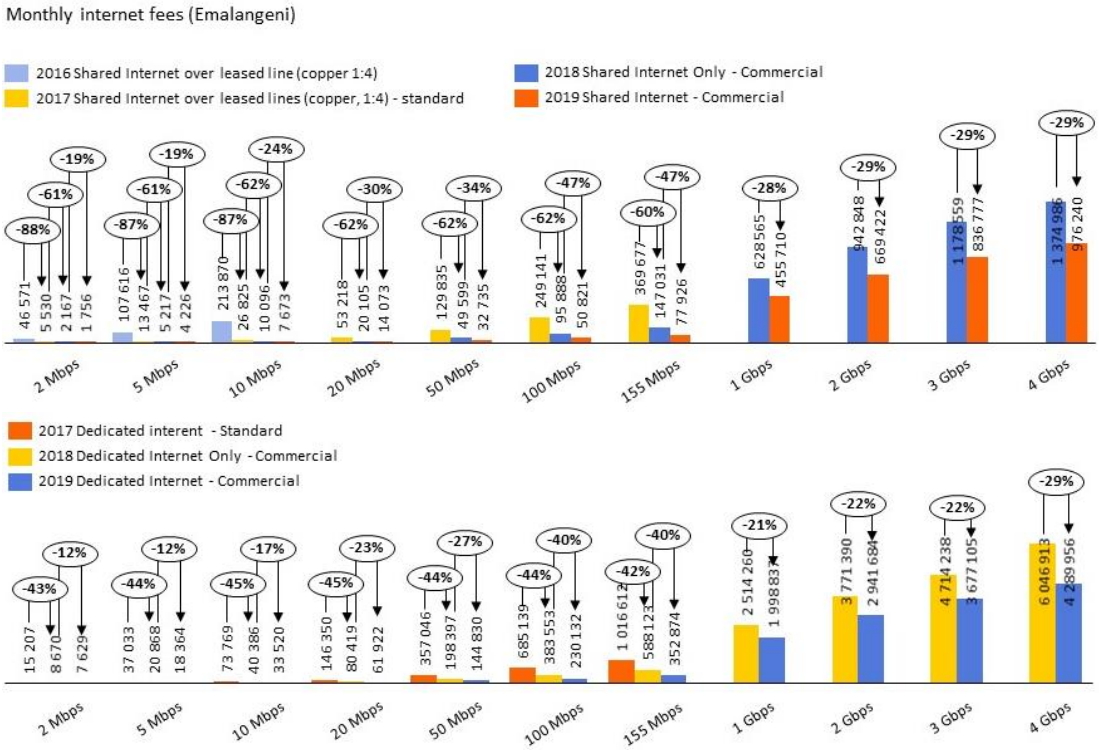


Source: ESCCOM

Monthly usage fees for 2 Mbps international leased lines decreased by 86% between 2016 and 2018. Since 2017, monthly fees for international leased lines remained constant, ranging from E 55 800 for 10 Mbps and E 297 000 for STM-1. National leased lines decreased by between 37% for the 2 Mbps offering and 65% for STM-1 between 2016 and 2017. These showed further reductions between 2017 and 2018 of between 15% for STM-1and 80% for the 3 000 Mbps offering. In 2019, monthly national leased line fees decreased by between 19% for 2 Mbps and 5 Mbps, and 47% for STM-1, with monthly fees for the analysed bandwidths ranging from E 5 853 for 2 Mbps and E 391 083 for the 4 000 Mbps offering.

The figure below shows the commercial monthly internet (bandwidth) fees for shared and dedicated internet services between 2016 and 2019.

Figure 24: Commercial Internet fees, 2016-2019.

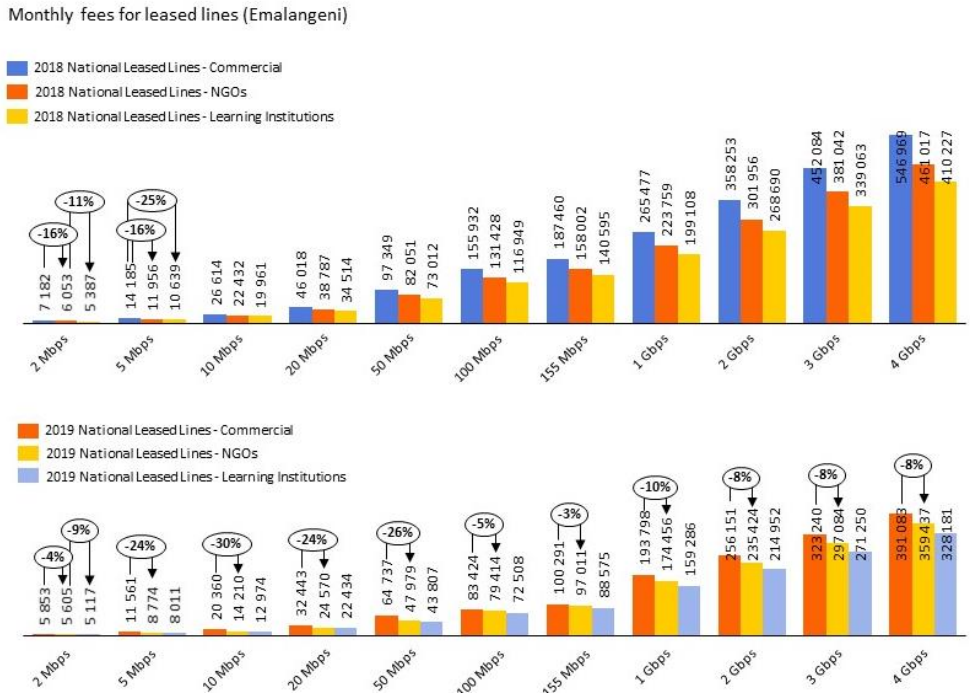


Source: ESCCOM

Monthly shared internet fees have decreased by 87% - 88% between 2016 and 2017 for the 2 Mbps, 5 Mbps and 10 Mbps. Between 2017 and 2018, shared internet fees decreased by between 60% to 62%, with further decreases, between 19% and 47% occurring in 2019. By the end of the assessment period, monthly shared internet fees for 2 Mbps decreased from the 2016 high of E 46 571 to E 1 756, while the highest bandwidth offering, 4 000 Mbps, was priced at E 976 420. Introduced in 2017, monthly dedicated internet fees are higher than those of shared internet. In 2018, dedicated internet fees decreased by between 42% to 44% from the 2017 figures. 2019 saw further decreases of between 12% and 40% for dedicated internet fees at commercial rates.

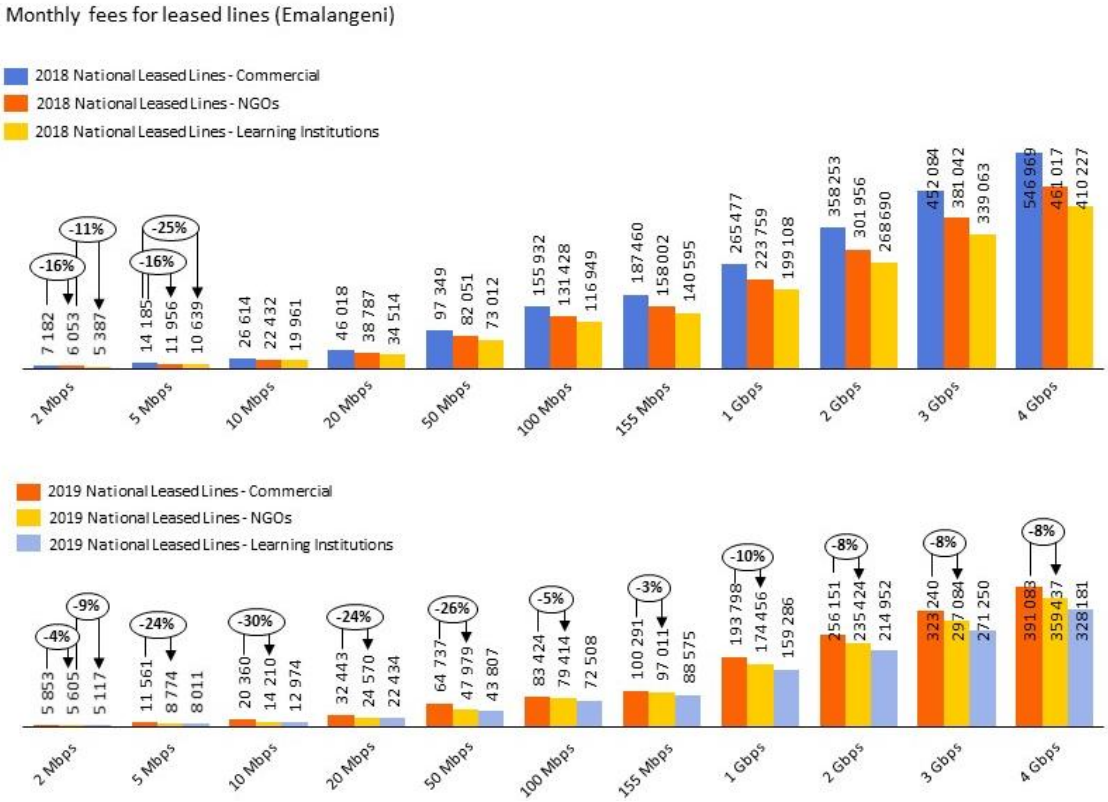
In 2018, EPTC introduced bundled pricing for its bandwidth and monthly leased line fees following the cancellation of its 12 month, 24 months and 36 months bundle offerings at the request of the Commission as part of its Electronic Communications Act (ECA) mandate to regulate pricing in a manner that maximises consumer benefit. Additionally, EPTC introduced discounted monthly leased line and internet (shared and dedicated) pricing for NGOs and learning institutions, as illustrated in the figures below.

Figure 25: Shared and Dedicated internet discounts for NGOs and Learning Institutions.



Source: ESCCOM

Figure 26: Monthly leased lines discounted rates for NGOs and Learning Institutions.



Source: ESCCOM

In 2018, both the monthly leased line fees and the internet fees (shared and dedicated) for NGOs were 16% lower than the commercial rates, while those for Learning institutions were a further 11% lower than those of NGOs and 25% lower than the commercial rates across the assessed bandwidth offerings – the latter being the same as the Volume A Bundle rate. In 2019, the commercial national leased line fees for NGOs were discounted by between 3% to 30% compared to the commercial fees, while the Learning Institution fees were discounted by 9% compared to the NGO fees.

NGO fees for shared internet were 1% higher than the commercial rates for bandwidth offerings of 100 Mbps and STM-1 in 2019, with the rest of the bandwidth offerings showing discounts of between 3% and 26% compared to the commercial rates.

The NGO fees for dedicated internet showed discounts of between 11% and 33% compared to the commercial rates, while Learning Institutions had discounts of 9% compared to the NGO fees for both dedicated and shared internet.

In general, although better than commercial rates, the discounts offered to NGOs and Learning institutions were similar to or less than those offered to ISPs and MNO's who were Volume Bundle A users. Volume Bundle A is the smallest discount offered by EPTC. It is not clear from the data provided whether the value derived is similar. A deeper discount on the NGO and Learning institutions' fees for leased lines and internet fees (dedicated and share) may undermine the investment sentiment in high-quality networks.

Programme 1 of the Universal Service Strategy is to prioritize connectivity for facilities. The objective of this programme is to facilitate broadband connectivity for schools and other government facilities) connectivity for future e-government projects and programmes using the most efficient last-mile technologies with broadband access with a minimum of 1 Mbps (downlink) for mobile broadband and 4 Mbps (downlink) for fixed broadband. Programme 4 provides for the support of the creation of regional ICT entrepreneurial activity assisted by NGOs and other institutions under the leadership of the ESCCOM/UAS Committee. The recommendation to boost the usage of leased lines and uptake in dedicated and shared internet is for the Commission to focus on offering the NGOs and learning institutions support through the UAS which is aimed at funding selected facilities through a subsidy that includes provision for monthly connectivity charges amongst others. The support for NGOs and learning institutions falls within the ambit of the USAF and have been highly prioritized as they represent bottom-up rather than top-down policy driven initiatives.

4.5 COMPETITIVE/COMPARATIVE BENCHMARKING

4.5.1 Context

Competitive wholesale benchmarking is particularly difficult because wholesale pricing is not published and is often heavily negotiated, resulting in discrepancies as there is a dearth of standardised like-to-like comparisons or standards. Despite this, the analysis benchmarks Eswatini's wholesale pricing with that of Botswana (a landlocked country) and Lesotho (a landlocked Kingdom) - both in the Southern African Development Community (SADC) that are comparable to Eswatini in terms of their internet value chain as indicated in *Figure 3*. Data was requested and obtained from the Botswana Communications Regulatory Authority (BOCRA) and Lesotho Communications Authority (LCA).

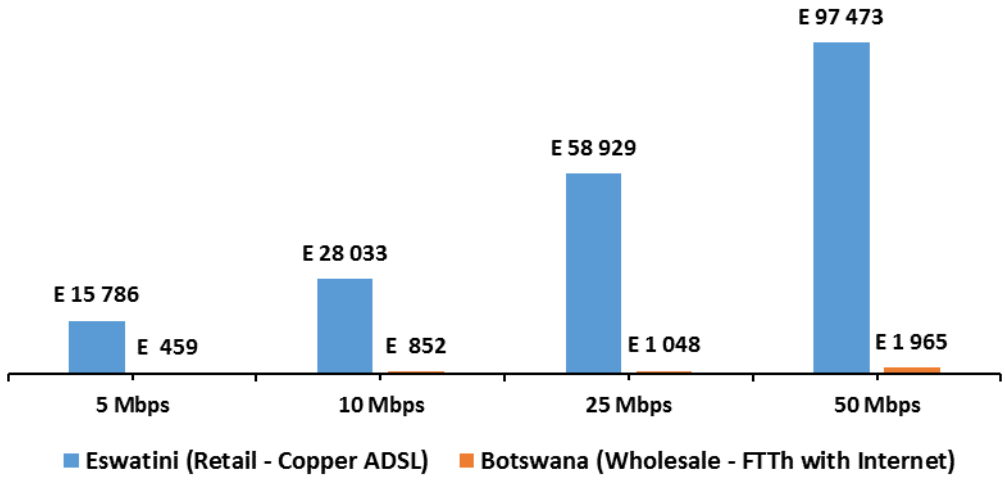
Further benchmarking is provided in *Appendix B*, noting the weaknesses inherent in wholesale price benchmarking that are mentioned above, purely for general information purposes.

4.5.2 Botswana Pricing

Although Botswana's ICT legislation allows for any operator in possession of a Network Facilities Provider (NFP) licence and a Services and Applications Provider (SAP) licence to provide wholesale services, the state-owned Botswana Fibre Networks (BOFINET) still dominates this market. Similar to EPTC, BOFINET[12] was established to provide what is termed Other Licenced Operators (OLOs) with wholesale solutions to address the costing challenges involved in the self-provisioning (by OLOs) of backbone infrastructure. BOFINET, although commercially driven, has a mandate of providing universal connectivity to all parts of the country, including areas with populations of less than 500 people and is restricted from operating in the retail market (cannot provide services to Corporate and Government). Furthermore, Botswana's Communications Regulatory Authority Act provides for cost-based pricing, which BOFINET applies in determining pricing for its wholesale services. The implementation of a cost based approach to pricing is an important difference between the two markets.

As a result of its universal service mandate and licence restrictions, BOFINET receives subsidies from the Botswana government to address this mandate. This section will thus compare the wholesale pricing for BOFINET with that of EPTC to provide a benchmark for Eswatini's wholesale services, noting the important distinction in the regulatory framework with respect to cost-based pricing being applied in Botswana.

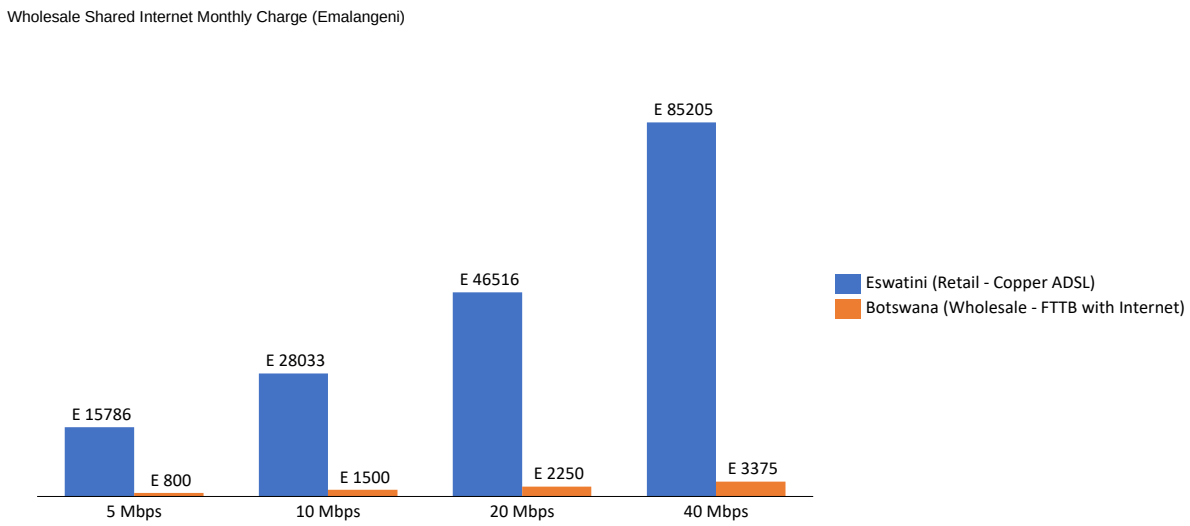
Figure 27.a: Wholesale Shared Internet Monthly Charge.



Source ESCCOM, BOCRA

[12] *BOFINET provides IPT (Internet Protocol Transit), National Leased Lines (NLL), FTTx (Fibre-to-the-home and Fibre-to-the-business), IPTV (Internet Protocol Television), IPLC (International Private Leased Circuit) and Public Wi-Fi to Other Licenced Operators, including MNOs and ISPs.*

Figure 27.b: Wholesale Shared Internet Monthly Charge



Source ESCCOM, BOCRA

When comparing the 2020 EPTC leased line and internet fees with BOFINET's 2020 leased line (and internet included) fees as shown in Figure 27 a and b above, it is evident that EPTC charges significantly more (at between 94% and 1 768% more) than BOFINET for similar bandwidths. BoFiNet provides last mile wholesale contented internet over fibre, fibre to the building with contented internet, to OLOS/ISPs at wholesale rate. EPTC on the other hand does not have last mile wholesale internet connectivity over fibre to the building but charges ISPs at retail price for last mile internet access over copper to households or business. This contributes to high costs of providing Fixed Broadband services for ISPs that that rely on EPTC's last mile fixed wired network to provide fixed broadband services making these ISPs that offer ADSL (i.e. Posix, Real Image) uncompetitive in the market against ISPs that use fixed wireless technology (i.e. Jenny Internet, Touch IT, VSAT). This has seen the market for ADSL declining significantly as consumers opt for more competitive fixed wireless broadband services. Most of these ISPs experienced a decline or stagnation in subscriptions and eventually market share and revenue.

In addition to national leased lines provided to Other Licenced Operators, BOFINET provides wholesale fibre services on a home-based (FTTH) and business-based (FTTB) ISP offering on a shared internet basis ranging from 1:10 contention for 40 Mbps Fibre-to-the-Business (FTTB) to 1:2 contention for all bandwidths (up to 50 Mbps) for Fibre-to-the-Home (FTTH). The installation fee for FTTH is 1 000 P[13], equivalent to E1 365 using the 2019 average exchange rate, while the installation fee for FTTB varies based on distance, amongst other factors. Due to the varying nature of BOFINET's FTTB installation fees, these are not compared with EPTCs. Although BOFINET strictly provides to OLOs, its FTTB monthly fees are compared to EPTCs commercial (i.e. retail) offering at the same bandwidths in the figure above.

13 1000 Pula = 1 365 Emalangeni based on 2019 average exchange rate.

The leased line and shared internet fees charged by EPTC were between 1 771% to 2 427% greater than the monthly fees for BOFINET's FTTB. Comparing BOFINET's most expensive 40 Mbps FTTB offering, at E 3 375 per month, is still lower than EPTCs lowest priced offering (of the compared bandwidths) of E 15 786.

Figure 27.c below shows a comparison of EPTC and BoFinet's dedicated wholesale internet monthly tariffs charged to ISPs in their respective markets. In the case of BoFinet's, uncontended wholesale Internet Protocol Transit (IPT) Tariffs were used to benchmark EPTC dedicated wholesale internet tariffs. Wholesale dedicated Internet prices charged by EPTC are significantly higher than BOFINET's prices by an average of 140% for dedicated internet bandwidth capacity between 2 Mbps to 600 Mbps, as shown in Figure 27.c below. 2 Mbps Dedicated Wholesale internet in Eswatini costs E10 818 compared to E2 066 in Botswana, 424 % higher. While dedicated 155 Mbps wholesale internet costs 141% more in Eswatini at cost of E310 549 compared to E128 860 in Botswana.

Figure 27.c : Wholesale Dedicated Internet Monthly Charge

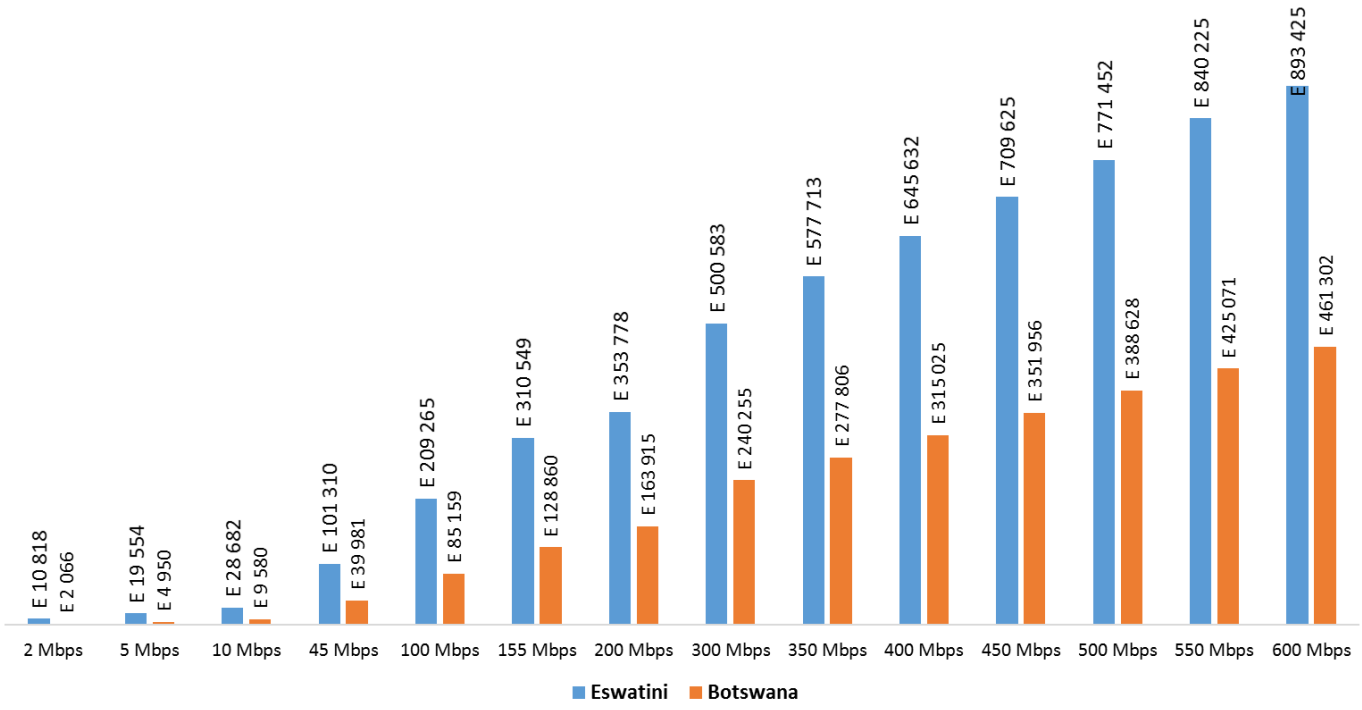
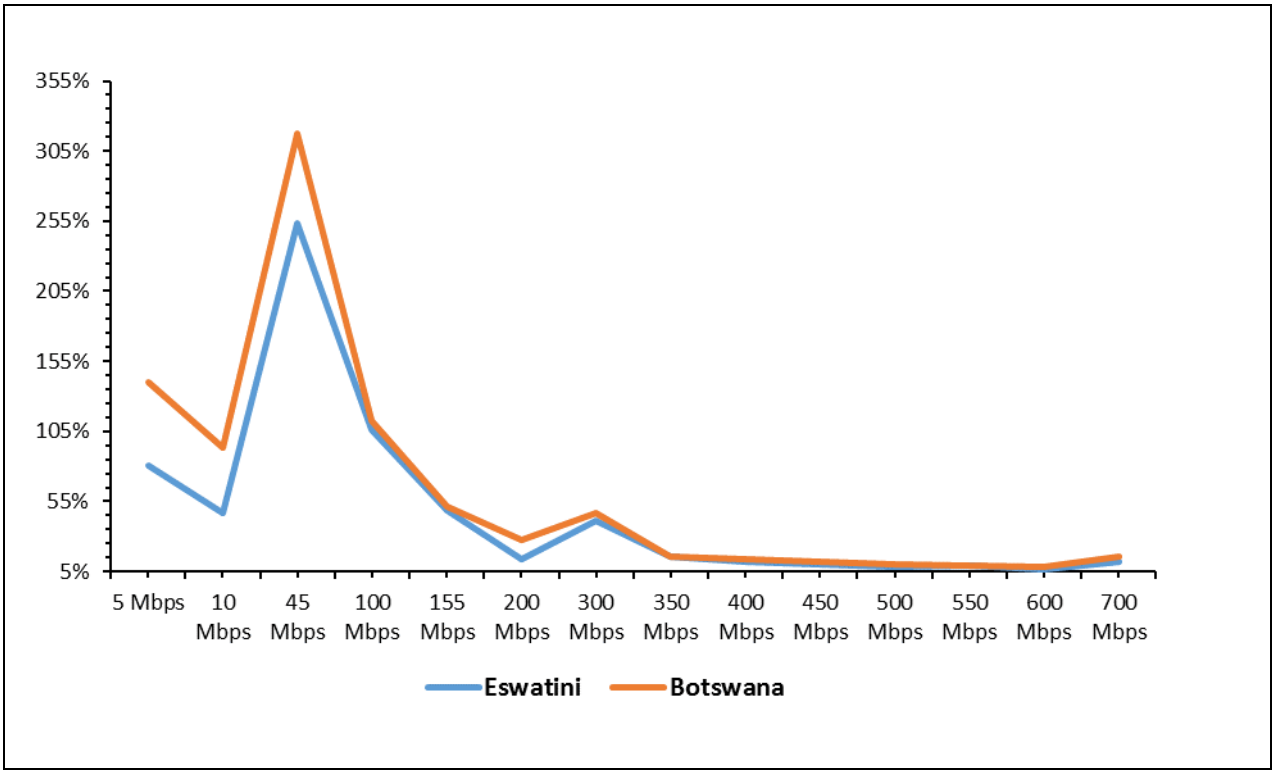


Figure 27.d below shows that despite significant difference in Prices of Wholesale Dedicated Internet Bandwidth, trends in the percentage price difference from lower bandwidth capacity to higher bandwidth capacities in Eswatini and Botswana markets follow the similar paths. Both markets have similar pricing approaches to bandwidth as observed in their respective trends. The pricing of Bandwidth between 2 Mbps and 45 Mbps follow the same trend, percentage price variance between Bandwidth capacity between 2 Mbps and 45 Mbps are significantly high at an average of 183% and 120% in Botswana and Eswatini markets respectively. Thereafter, there percentage price increase follows a downward trend, showing a deceleration in price increases between 45 Mbps and 200 Mbps in both markets, averaging 64% and 56% in Botswana and Eswatini markets respectively. The percentage price increase between 300 Mbps and 700 Mbps decelerates further, averaging 16% and 14%, respectively.

Figure 27.d: Wholesale Dedicated Internet Bandwidth Pricing % Variance Trend



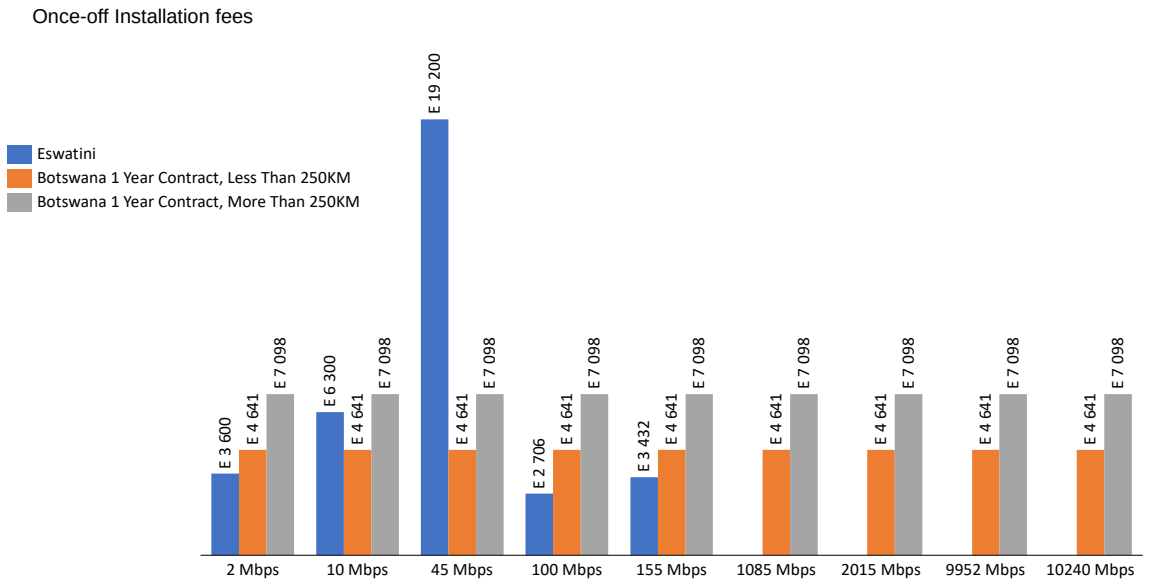
The figure below shows the once-off installation fee for national leased lines for BOFINET and EPTC and the monthly leased line fees charged by both operators[14] based on the distance from the core network offerings provided by BOFINET[15].

14 The average exchange rate of 1,36466 for 2019 between the Eswatini Lilangeni and the Botswana Pula is used throughout. The 2019 rate is chosen because of distortions in the first few quarters of 2020 caused by COVID-19.

Source: currencies.zone

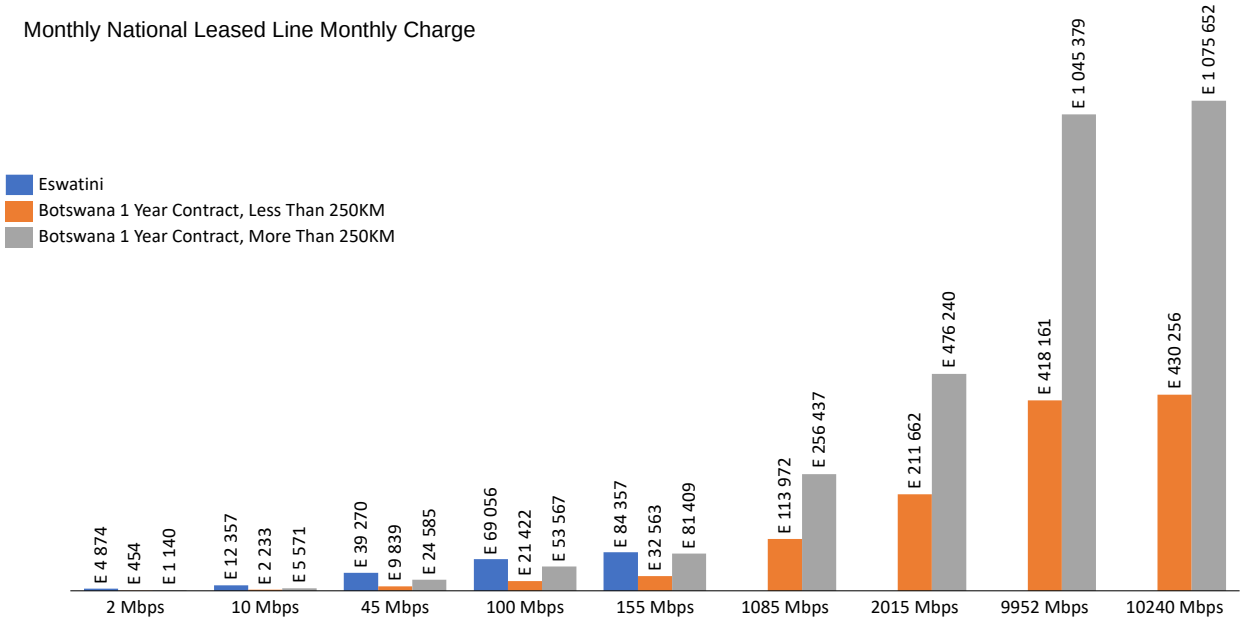
15 The 1085 Mbps pricing from BOFINET is compared to the 1100 Mbps for EPTC, with the 2015 Mbps pricing from BOFINET compared to the 2000 Mbps pricing for EPTC.

Figure 28.a: Once-off Installation fees



Source ESCCOM, BOCRA

Figure 28.b: Monthly National Leased Line Monthly Charge



Source ESCCOM, BOCRA

As can be seen in the **Figure 28.a** and **28.b** above, BOFINET charges different installation and monthly leased line fees depending on the distance from the core network, but these do not vary with the bandwidth required by an ISP,

which is the case for EPTC. The EPTC installation fee of E 3 600 for 2 Mbps was 28% lower than the E 4 641 charged by BOFINET for the monthly fees for leased lines less than 250 km from the core network[16]. The installation fees for 10 Mbps, 45 Mbps, were 35% and 75% higher than those of BOFINET's national leased lines for distances smaller than 250 km from the core network. BOFINET's installation fees for distances over 250 km are 53% higher than the fees for distances smaller than 250 km.

4.5.3 Lesotho Pricing

The Lesotho telecoms market is structured around two vertically integrated operators, Econet Telecom Lesotho (EcoTel) and Vodacom Lesotho. These Operators supply facilities to two independent network services license holders, which compete against them in the retail internet network service market. EcoTel Lesotho and Vodacom Lesotho operate international gateways that connect them to high-speed undersea cables through their affiliated companies, Liquid Telecom which is part of Econet Wireless International, and Vodacom South Africa respectively[17]. The government of Lesotho invested in the EASSy cable through a special purpose vehicle, the West Indian Ocean Cable Company, the Lesotho Communications Authority holds the shares in trust. Not only does this pose as a conflict of interest to the regulator but also has led to the inefficient use of the capacity in the market to stimulate fierce competition and drive down prices[18].

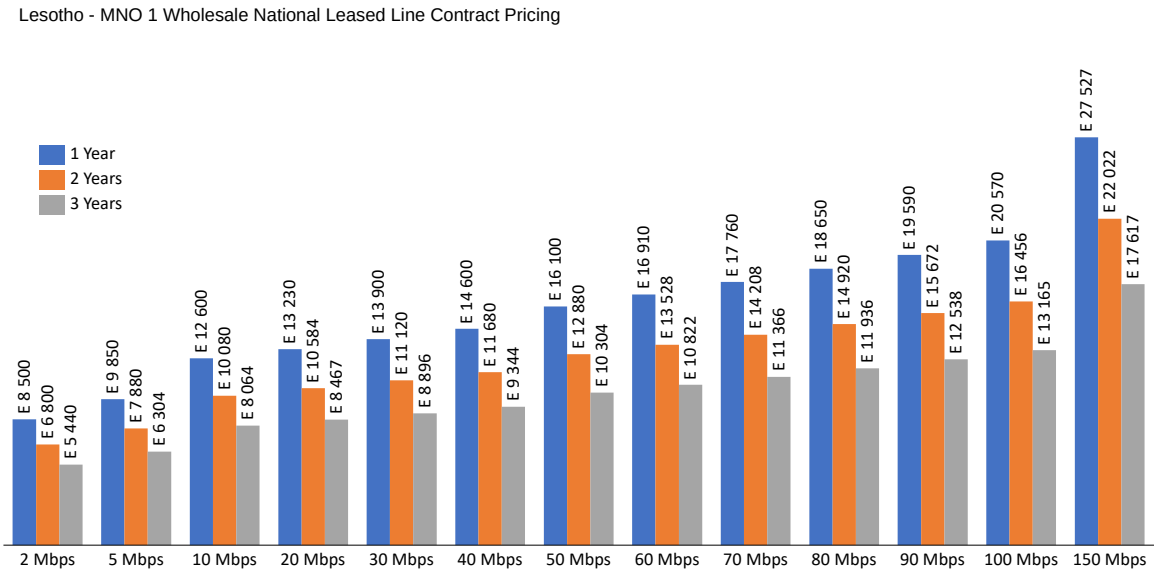
Lesotho operates on cost-plus-recovery basis pricing, while Botswana applies the cost-based pricing mechanism. Evidently, it is imperative that a specific cost calculation mechanism or pricing methodology should be recommended and regulated by the Commission as this allows for transparent and standard cost determination. The pricing model at wholesale is based on a reduced price for longer contract levels. This is because Lesotho has a surfeit of data provision in relation to the overall demand, especially from corporates. Hence, this surplus is offloaded through bulk offers, coupled with contracts lengths which offer certainty at all levels of the value chain.

The figures below outlines the pricing mechanism applied by EcoTel, which are all technology neutral and exclusive of VAT charged at 15%. While data is dearth to provide further understanding into the pricing mechanism, it is understood that EcoTel follows a "per segment basis" negotiated bandwidth structure and fees. EcoTel uses this pricing for the two ISPs that it provides wholesale services to, charging them different installation and monthly rates. The data does not provide a distinction between the three tiers EcoTel provides for ease of comparison with the leased lines, dedicated internet and bundles that EPTC offers. The prices have been converted using the 1:1 ratio that the Lesotho Loti shares with the Eswatini Emalangeni. The data at hand does not provide for the dark fiber long term contractual agreement through an IRU, this is partly owing to the fluid and variable nature of IRU agreements; these vary with different off-takers, as well as with duration. IRUs generally are cheaper the longer the term is, they are also costed differently to a normal leased line due to the mutual benefits linked to the agreement such as capital investment and asset discounting.

Figure 29a below depicts wholesale leased line pricing for MNO1, on contract basis ranging from 1-year to 3-years. These contracts were offered bulk discount for longer contracts as well as higher price decreases for higher capacities. The least price change of 20% was for the 10 Mbps capacity. The 22% price differentials on the contracts have remained the same over the different bandwidth capacities.

[16] EPTC pricing is compared to the less than 250 km pricing due to the geography of Eswatini, reported to be 175 km from north to south and about 130 km from west to east at its largest dimensions. Source: Brittanica.com
17 The State of ICT in Lesotho – Research ICT Africa
18 The State of ICT in Lesotho – Research ICT Africa

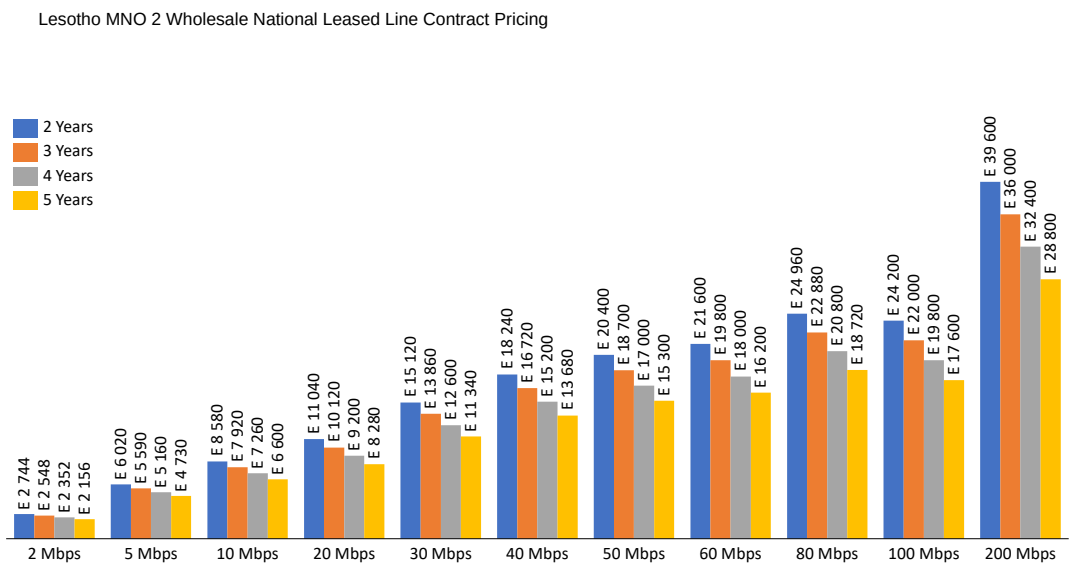
Figure 29.a: Lesotho - MNO 1 Wholesale National Leased Line Contract Pricing (1-3yr)



Source: LCA

Below is the second component of the service offering for MNO 2. This offering provides contracts from 2-year to 5-year, which are short to medium-term and therefore assumed not to be the dark fiber offered on an IRU agreement. The longer the contract period, the less the prices charged. As mentioned above, the pricing model is based on a reduced price for longer contract levels, hence the 5-year contract has the highest discount of an average of 10% over all the capacity levels.

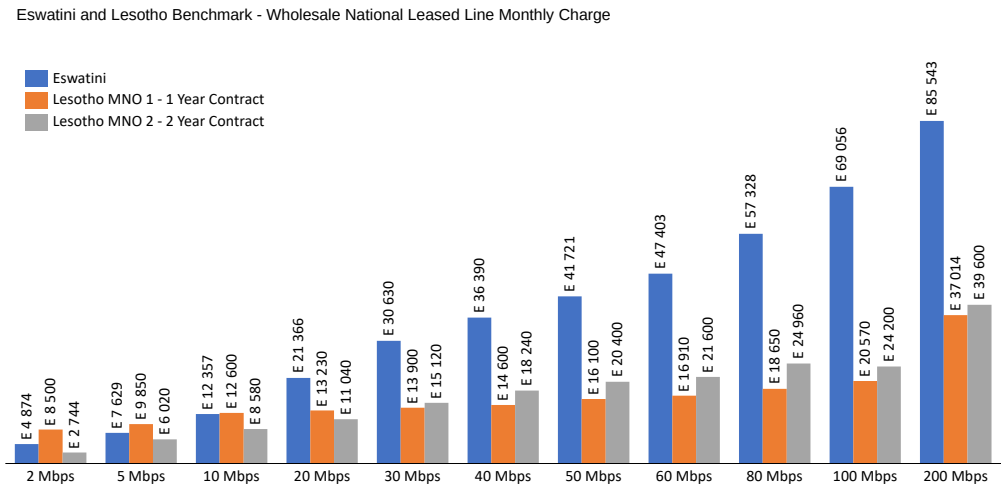
Figure 29.b: Lesotho MNO 2 Wholesale National Leased Line Contract Pricing



Source: LCA

Figure 30 below shows a comparison of available wholesale Leased Line monthly prices (non-contractual) in the Eswatini market against available monthly prices in the Lesotho market, from the two MNOs only available on fixed-term contract basis. Eswatini wholesale prices for leased line capacities between 2 Mbps and 10 Mbps are lower than MNO 1 prices by an average of 22%, compared to MNO 2 prices Eswatini prices within that same capacity range are significantly higher by an average of 49%. Prices for capacities between 20 Mbps and 200 Mbps are significantly higher in Eswatini compared to both available pricing from the two service providers, MNO 1 and MNO 2 in the Lesotho Market by an average of 156% and 119% respectively. MNO 1 in Lesotho in the benchmark has the lowest prices in the Lesotho market.

Figure 30: Eswatini and Lesotho Benchmark - Wholesale National Leased Line Monthly Charge



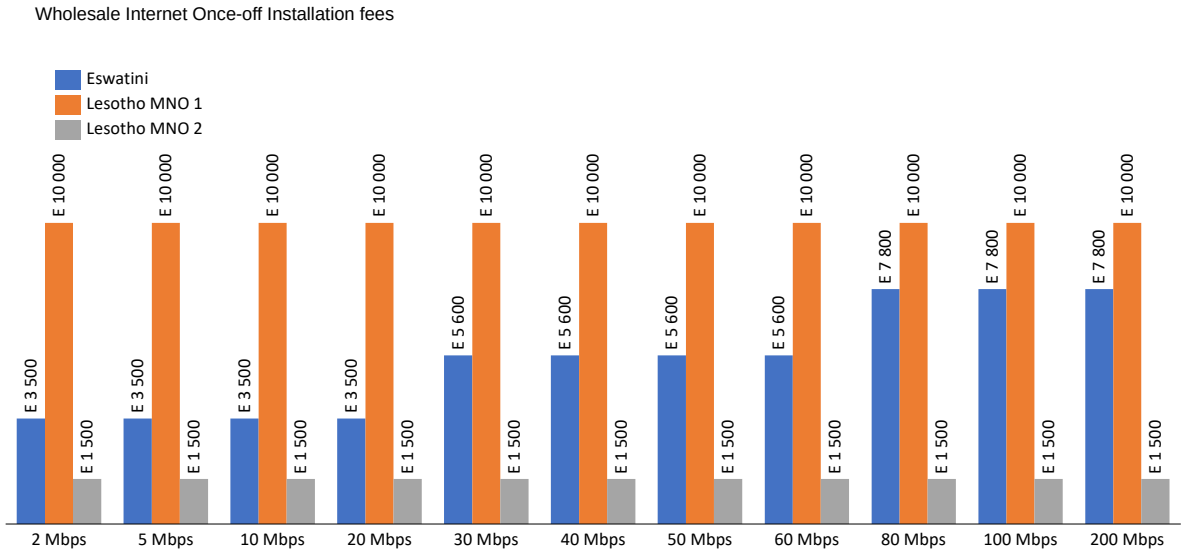
Source: LCA

The lower pricing of wholesale leased lines in Lesotho compared Eswatini could be a reflection of the discounted pricing on longer fixed term contracts, compared to non-contract pricing in Eswatini.

The graph below depicts the comparison of the monthly fee charged by EPTC and MNO 1 and MNO 2. Evidently, the pricing for MNO 1 is higher than that of MNO 2. Where MNO 1 and MNO 2 prices increase gradually, EPTC pricing increases on an average of 15% per capacity. Wholesale prices between MNO 2 and EPTC appear to be in sync at the lower levels with parity among EPTC and MNO 2 prices from 2Mbps to 20Mbps.

The **Figure 31** below compares the once-off installation fees charged by both MNO 1, MNO2 in Lesotho market and EPTC in Eswatini market. MNO 1 and MNO 2 charge a constant rate of E 10 000 and E3 500 respectively, regardless of the capacity and contract period. EPTC installation costs on the other hand, vary by a range of capacity, 2 Mbps – 20 Mbps at cost of E3 500; 30 Mbps – 60 Mbps at E5 600; and 80 Mbps – 200 Mbps at E7 800. Effectively, Lesotho has lower installation costs available in the market compared to Eswatini based on MNO 2 installation cost comparison.

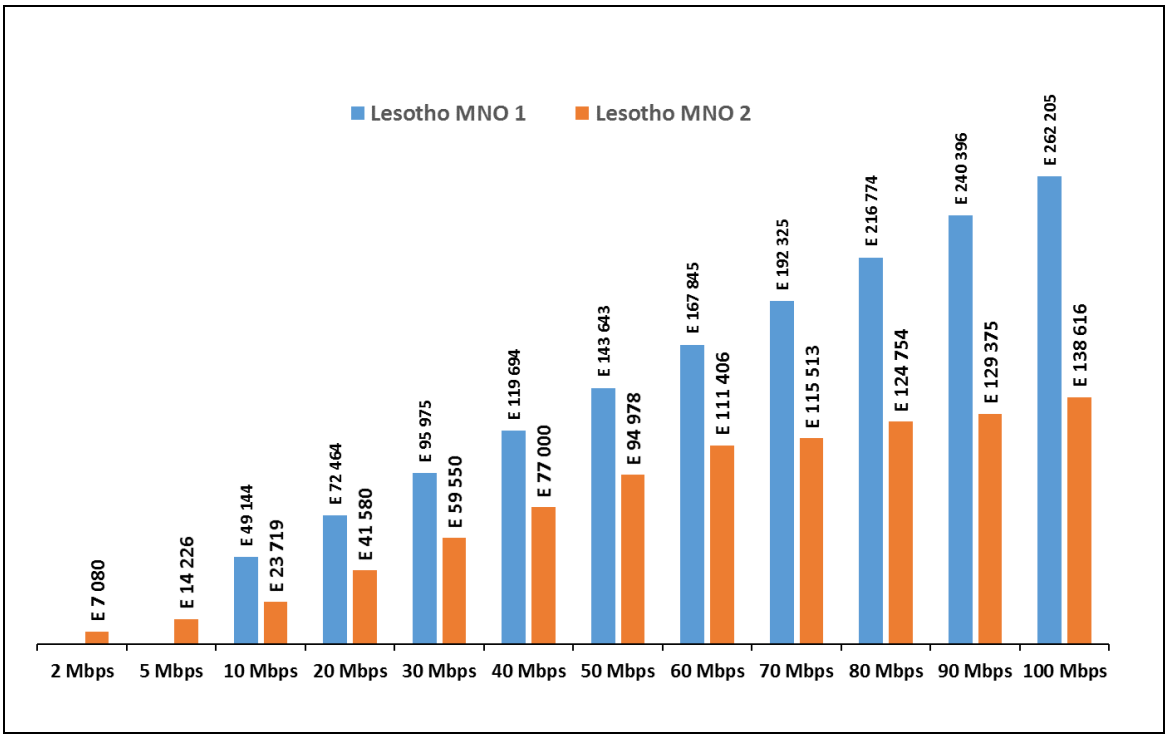
Figure 31: Wholesale Internet Once-off Installation fees



Source: LCA

Wholesale dedicated internet prices available in the Lesotho market on non-contractual basis are shown in Figure 32 below. MNO 2 with bandwidth capacity from 2 Mbps to 100 Mbps has the lowest prices available in the market, lower by an average of 41% compared to MNO 1.

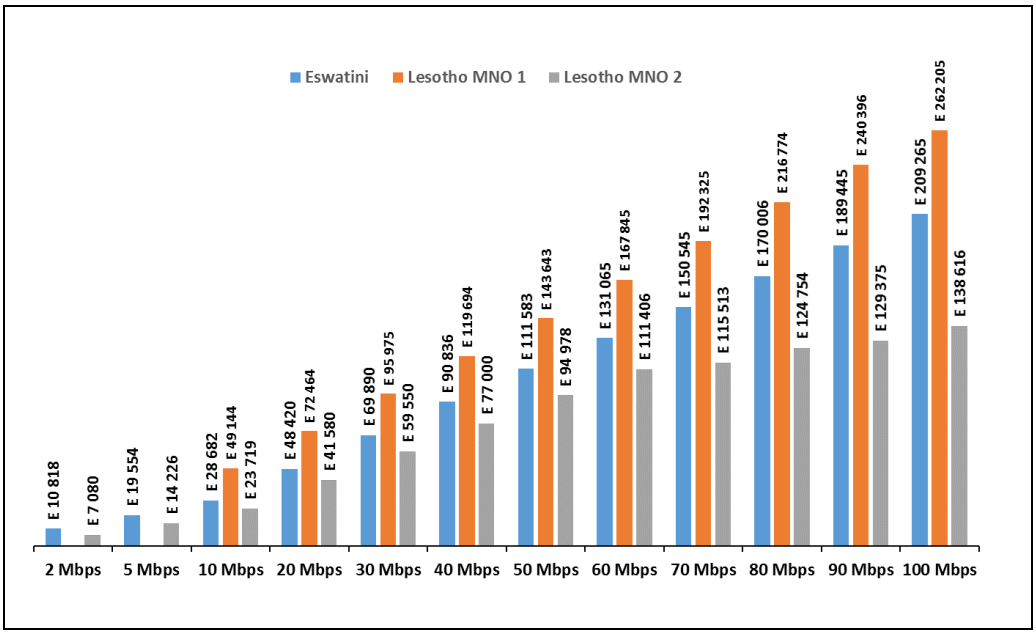
Figure 32: Lesotho Wholesale Dedicated Internet Pricing



Source: LCA

Wholesale dedicated internet prices in Eswatini benchmarked against the lowest available prices in the Lesotho market are higher, by an average of 27%. This based on a comparison of Eswatini prices with the lowest price available in the Lesotho market, offered by MNO 2 as shown in Figure 33 below.

Figure 33: Eswatini and Lesotho Wholesale Internet Price Benchmark



Source: LCA

4.6 KEY FINDINGS

4.6.1 Botswana

Notwithstanding the challenges in competitive wholesale benchmarking, Eswatini's wholesale pricing has been compared with data received from BOCRA based on pricing from its main wholesale operator, BOFINET. BOFINET differentiates its national leased lines based on the distance from its core network or nodes and FTTB offerings based on bandwidth. EPTC on the other hand, varies both leased lines and dedicated internet pricing based on the bandwidth only. The wholesale pricing in Eswatini is significantly higher than that of Botswana, a country that is both a SADC member and landlocked such as Eswatini. Botswana has introduced competition in its wholesale market and has applied cost-based pricing to its wholesale services.

When comparing the 2020 EPTC leased line and internet fees with BOFINET's 2020 leased line (and internet included) fees, it is evident that EPTC charges on average between 854% and 140% more than BOFINET for similar bandwidths.

4.6.2 Lesotho

Despite the differences in the two markets, Eswatini was still able to find comparable data to competitively benchmark the prices between Lesotho and Eswatini. The report adopted the data from MNO2 as the benchmark, which were the lowest prices. The installation fees for the Lesotho MNO 2 remained the same, possibly owing to a more sophisticated technology in use, however, the Eswatini prices were not far off. The Eswatini prices varied with bandwidth and could be grouped into pricing for the lower bandwidth, medium bandwidth and highest bandwidth.

4.7 KEY INSIGHTS AND RECOMMENDATIONS

The wholesale analysis highlights that wholesale leased line bandwidth prices decreased for both dedicated and shared (at commercial level) offerings, with installation costs showing an initial increase from dedicated fibre links (to align to technology neutrality) prior to a general decrease between 2017 and 2019.

The comparative benchmark found that the wholesale pricing in Eswatini is significantly higher than that of Botswana, a country that is both a SADC member and is being landlocked such as Eswatini. Botswana has introduced competition in its wholesale market and has applied cost-based pricing to its wholesale services. It is also worth noting that the operations of BOFINET are subsidised by the Botswana government, as such although the prices are lower than Eswatini it would not be the Commissions goal to match these prices like for like when EPTC operates as a private entity.

The report finds that EPTC has kept a similar pattern in price changes to Botswana, meaning that although the prices may be slightly higher, EPTC has maintained market related price changes and is comparable with peer countries.

BOFINET differentiates its national leased lines and FTTB offerings based on the distance from its core network or nodes, while EPTC varies this pricing based on the bandwidth. When comparing the 2019 EPTC

leased line and internet fees with BOFINET's 2020 leased line (and internet included) fees, it is evident that EPTC charges between 854% and 2 286% more than BOFINET for similar bandwidths.

However, the installation fees are lower and consistent in Lesotho; this could be due to the MPLS technology which does not require hardware changes when adjusting speeds. MPLS is more of a software adjustment hence the consistent installation fees. Furthermore, the limited user in the market also means that there is no incentive or scope for competitive installation prices.

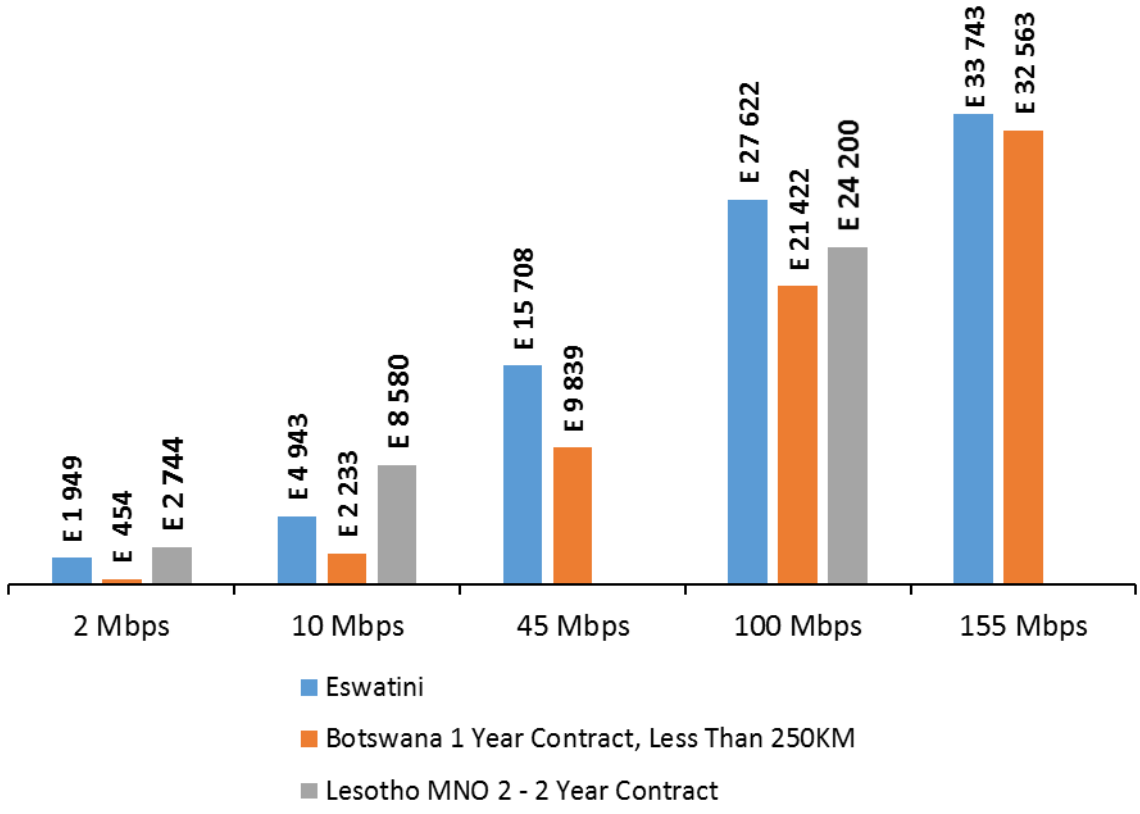
Lesotho operates on cost-plus-recovery basis pricing, while Botswana applies the cost-based pricing mechanism. Evidently, it is imperative that a specific cost calculation mechanism or pricing methodology should be recommended and regulated by the Commission as this allows for transparent and standard cost determination. Both BoFiNet and the Lesotho are precluded from selling capacity directly into the retail market, this is only done by licensed Network Operators. Bandwidth prices, where we have like for like comparison, were more expensive in Lesotho year on year. The prices are higher, while country conditions for Lesotho and Eswatini are similar in that both are landlocked countries. This could be due to operational inefficiencies and limited market demand in Lesotho.

Further cost-based analysis may reveal the actual impact of the Price Transformation Programme on the wholesale layer of the cost elements. The comparative analysis indicates that leased line bandwidth costs are still higher in Eswatini than in comparative Botswana, which has introduced competition at the wholesale level and uses a cost-based approach to wholesale pricing.

Apart from the Regulatory intervention, which may take some time to prove effective due to specialized skill required to implement; the Commission may consider extending the approach of the Price Transformation Programme and negotiating a glide path reduction of various costs. The following Price Transformation Recommendations can be made:

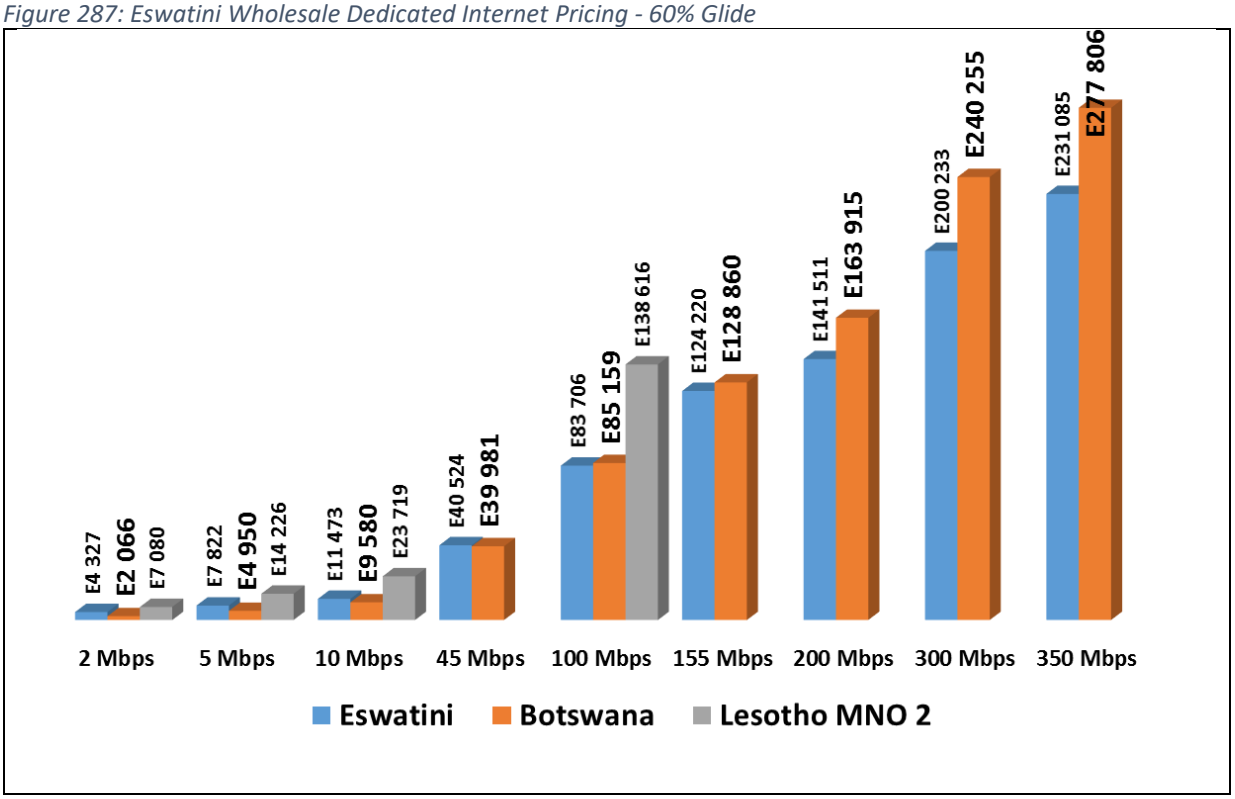
- It is recommended that the Commission review the calculation of installation costs with EPTC; first the Commission needs to establish how this cost is arrived at after which the Commission may suggest that EPTC emulate the approach used in Lesotho where a flat fee is charged across all bandwidth speeds. Furthermore, upon understanding the make-up of the installation cost. It is envisioned that this will significantly lower prices, due to the area coverage of the country. While Botswana's bill per distance pricing mechanism may not be suitable for Eswatini, BOFINET's pricing for less than 250 km is recommendable as a pricing guide. As depicted in the figure below, if Eswatini applies a 60% from over a three year period in the form of glide path, the Eswatini prices would closely align to those of Botswana and come in slightly cheaper than Lesotho. The Commission can implement this glide path in a conservative 33% and 25% in the first two years and a subsequent 20% in the third annual decline in the short term, this would result in a 60% percentage reduction of the 2020 prices over a three-year period. The glide path reduction impact is depicted in the graph below.
  It is worth noting that Botswana prices are government sub-sidised as such matching the pricing like for like would be to the disadvantage of ETPC who operate as a private licensee. As such decreasing the variance between the two countries is a step in the right direction for Eswatini, these prices may be reviewed annually to just measure variance in the prices.

Figure 27: Eswatini Wholesale National Leased Line Pricing - 60% Glide Path



Source: ESCCOM, estimation by Pygma Consulting

Figure 287: Eswatini Wholesale Dedicated Internet Pricing - 60% Glide



Source: ESCCOM, estimation by Pygma Consulting

Considering that the retail and wholesale market are vertically integrated it is recommended that a glide path reduction be implemented in the wholesale market. The effectiveness of the glide path within the wholesale market will inform the retail price ceiling and floor the Commission will prescribe to the retail market.

The following regulatory recommendations can be made:

- Private sector investment in network infrastructure is encouraged and or privatization of the government's stake in telecommunications companies.
- BofiNet and Lesotho are only able to sell the wholesale capacity to retail players and not end users; this allows for separation of markets and concentration of competition in each market. The Commission should consider regulatory measures that will limit cross subsidization such as accounting separation of wholesale operations
- The introduction of competition on the wholesale level could introduce efficiencies and assist the Kingdom in reducing wholesale costs further, thereby driving the retail prices lower.
- It is recommended that EPTC provide last mile fixed internet broadband (ADSL) connectivity services to ISPs at Wholesale price and not at retail price as it is currently the case.

5. RETAIL ANALYSIS AND BENCHMARKING

5.1 METHODOLOGY

5.1.1 Prepaid Mobile Voice and SMS Pricing

The RAMP Index uses the OECD methodology to examine the cost of making a set basket of calls over a monthly period in each country. Prices are converted to USD for ease of comparison across the countries. Mobile call baskets include a pre-determined number of calls and SMS messages each month. The analysis makes use of the OECD 30 call basket which is weighted at a total of 50 prepaid calling minutes per month and 100 SMSs per month. Unlike the OECD, which only examines prices of dominant operators in each market, the RAMP Index uses data for all operators in the market, which makes RIA's basket more reflective of consumer options available in the market. The price baskets are calculated based on the advertised lowest voice/SMS prices. The RAMP Index methodology is subject to availability of the data, which consists of advertised prices from MNO websites collected on a quarterly basis.

5.1.2 1GB prepaid tariffs

In terms of the 1GB benchmarking measure, this is guided by the OECD methodology, together with reputable ICT measurement studies such as the GSMA Intelligence, to ensure that this study follows internationally recognized standards. The rationale is that 1GB of data valid for a month gives a good measure of the sizable amount of data a consumer can reasonably use within a month. Furthermore, 1GB data cost (on a prepaid basis) is used as a proportion of monthly income to be able to measure how affordable mobile data is. The baskets are converted to a uniform currency (USD) to allow for comparison across African markets. The RAMP Index methodology is subject to availability of the data, which consists of advertised prices from MNO websites collected on a quarterly basis.

5.1.3 Retail Benchmarking Data Limitations

The RAMP Index is an effective and recognised measure for conducting pricing analysis in African markets. Notwithstanding this, there are a few data limitations which are noted herein for completeness. The limitations include:

- Collecting prices on mobile telecommunication products can be challenging due to product differentiation in the industry. Mobile phone consumers face different tariff plans, and they are billed based on destination and timing of the calls, for instance, phone calls can be classified as on-net or off-net, off-peak or peak, and subscribers can make use of over-the- top (OTT) services, social media bundles, SMS, and data services in addition to voice communication offerings.
- The RAMP Index data is dependent on advertised prices from individual MNO websites, as such it only captures the information published on the MNOs websites. There are situations where it is not possible to gather new data if the MNOs website is not updated during the collection period.
- The RAMP Index does not capture advertised data bundles which do not fit its definitions.
    - The RAMP Index does not capture post-paid data (which is less prevalent in most African markets) or packages on promotion which may be cheaper than prepaid prices (which tend to be short term in any event).
    - The 1GB measure is not necessarily a true reflection on how people use data, since in order to maximise their discretionary income, most subscribers will opt for cheaper alternatives such as OTT bundles, social media bundles, or a MiFi device with data offerings.

It is well known that currently, the use of social media (such as Facebook, Twitter, WhatsApp and Instagram) is a driver of Internet uptake on the Continent, which allows users to form virtual networks and access information, entertainment and educational content. The RIA Index and related analysis does not capture social media bundles which are likely to be purchased by those who face income constraints but have access to an appropriate internet enabled device; it is noted however that this allows these subscribers to compensate for the high cost of data in many African countries. Therefore, the concept of capturing the lowest priced bundle may not necessarily represent the plethora of available offers or demonstrate the factors that affect subscriber's choice architecture. Thus, this implies that consumers are less likely to consider all available options to rationalize choosing one offer over another.

The RAMP Index uses the lowest priced bundle offered by a mobile operator as a benchmark for cross country level pricing analysis, however this price does not necessarily represent the national MNO prices as that operator may not have the largest market share to be representative of the entire country. Furthermore, the validity of data may be compromised, that is, for instance Zambia legislated in favour of non-expiring data bundle, MTN and Airtel now offer non-expiry data; Operator can no longer cap the use of the data to a certain period from date of purchase. Lastly, the RAMP Index uses the quarterly average exchange rate to represent all prices in USD and for ease of comparison, hence the fluctuations on a quarterly basis may result in price discrepancies. All of the limitations mentioned above, are addressed when doing the analysis of the data.

In instances where Eswatini local currency is used, the USD / SZL conversion rate applied as per the table below

Table 3: Eswatini Quarterly Exchange Rate, 2017Q1 - 2019Q4
Source: RIA, 2019

Eswatini Quarterly Exchange Rate, 2017 - 2019	
Quarter	Exchange Rate
2017_Q1	13,21
2017_Q2	12,90
2017_Q3	13,16
2017_Q4	13,62
2018_Q1	11,95
2018_Q2	12,62
2018_Q3	14,29
2018_Q4	14,29
2019_Q1	14,01
2019_Q2	14,36
2019_Q3	14,68
2019_Q4	14,68

Case Study: Benchmark Countries Mobile 1GB Prices in 2020 (USD)

Against the backdrop of the Price Transformation Program, which came to an end in March 2020, there were further sector wide regulatory interventions undertaken by the Commission to ensure that all communications services are provided in a manner that will best promote economic and social development. One of the key outcomes of these interventions was the reduction of mobile data bundle prices in the second quarter of the 2020/21 FY. MTN Eswatini reduced the price of 1GB monthly data bundle from E150 to E99 in September 2020.This price reduction was launched together with an accompanying extra 1GB night bundle and an introduction of data bundles that do not expire – a first in the kingdom. This price reduction is a significant milestone for the kingdom, as it places it amongst its regional peers pricewise.

Methodology

The data used in this analysis was obtained from the Communication Regulator of Southern Africa (CRASA) in 2020 for all countries but Lesotho. Lesotho did not form part of the study that CRASA had undertaken, and as such, the kingdom's data prices were not included. Since the data was collected using the OECD ICT Price Basket Methodology[19], the same principles were applied in the case of Lesotho. The data price for Lesotho was obtained from Vodacom Lesotho's website, as the operator with the largest market share. The price used in the analysis is per 900MB prepaid, has a validity of 30days or longer and is the closest estimate to 1GB. The prices were collected in their respective countries' local currencies and converted into US dollars using the exchange rate from September 2020[20], when MTN price reduction took place.

Comparative Benchmarking – 2020 Prices

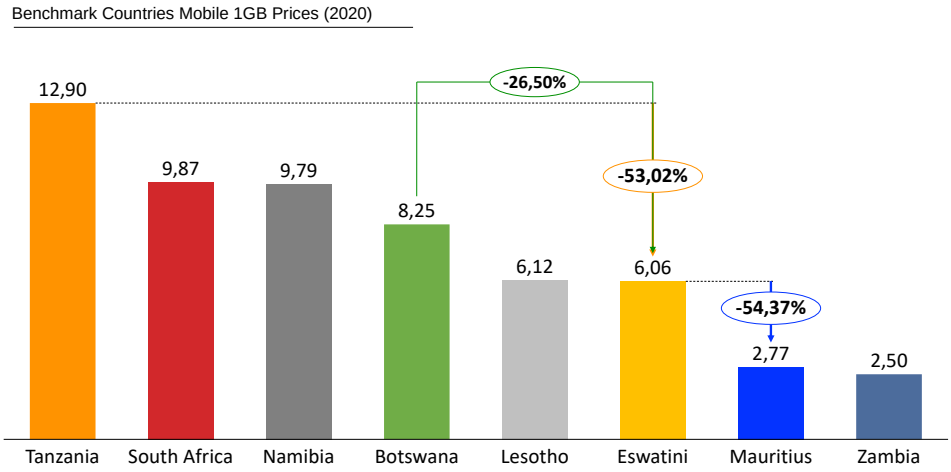
The figure below depicts the comparison of the price of Mobile 1GB data amongst some of the SADC countries. The data reveals that the post MTN Eswatini's price reduction, Eswatini is now 53% cheaper than the most expensive country, Tanzania. When compared with Botswana Eswatini is 27% cheaper. As a result, Eswatini is more expensive than only two of the comparable countries, Mauritius and Zambia. The advanced retail market in Mauritius has the benefit of direct access to undersea cables, therefore is able to maintain lower than regional average mobile data prices. The lowest price is seen in Zambia, this resulted from the fierce pricing reduction that Zambian operators embarked on in 2018 as an attempt to prohibit a fourth operator to enter the market.[21]

[19] https://www.itu.int/en/ITU-D/Statistics/Pages/definitions/pricemethodology.aspx

[20] https://www1.oanda.com/currency/converter/

[21] https://researchictafrica.net/publication/zambian-data-prices-fall-by-more-than-70-but-internet-use-remains-below-20/

Figure 29: Benchmark Countries Mobile 1GB Prices in 2020



Source: CRASA

Key Insights and Recommendation

The Price Transformation Programme ended in 2019, however, due to the vertically integrated nature of the wholesale and retail markets, it was expected that there would be some delayed changes in the market. The impact of the Price Transformation Programme, together with other regulatory and market changes has led to the further decrease in the pricing for the 1GB prepaid data bundle in the year 2020. This decrease in pricing has placed Eswatini below comparable regional peers, with Eswatini having the lowest 1GB pricing in the region.

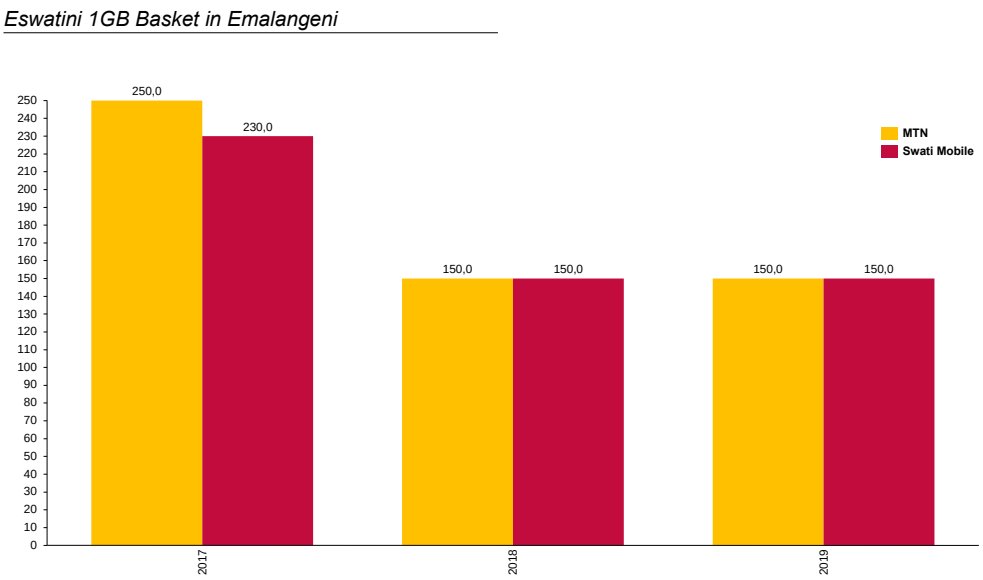
At the back of this, it is recommendable that the Commission should consider the Botswana price of USD 8,25 as a *pricing* ceiling *for Eswatini* and *a USD 4,77 as the floor. The USD4,77 is derived from the pricing in* Mauritius of USD 2,77, *we add an extra USD2,00 to offset the geographic and wholesale advantage that Mauritius has in the market by adding the extra USD2,00.*

5.2 INTERNAL BENCHMARKING

The benchmarking exercise presented below provides some insight into the efficiency of the Price Transformation Programme and the effects of market competition on retail pricing. This benchmark report supports the situational analysis conducted as deliverable two of this project. The pricing that is considered in this section is retail prepaid Voice/SMS and data pricing.

With the increase in competition through the introduction of Eswatini Mobile ("ESM") in 2017, there was a reduction in both voice and data services pricing. The introduction of one additional Mobile Network Operator (MNO) in many markets has proven to be significant enough to stimulate competition – ESM's entry was no different. In 2017, after ESM launched, MTN's 1GB mobile data prices fell from USD 33,4 to USD 26,3 within a quarter. MTN promptly reduced its tariffs to closely match ESM's lower market entry mobile tariff offers, demonstrating that it will not be easily displaced by the new market entrant. MTN, the incumbent, had and continues to have the larger market share, the advantage of economies of scale and scope, and the financial resources to compete aggressively with the newcomer.

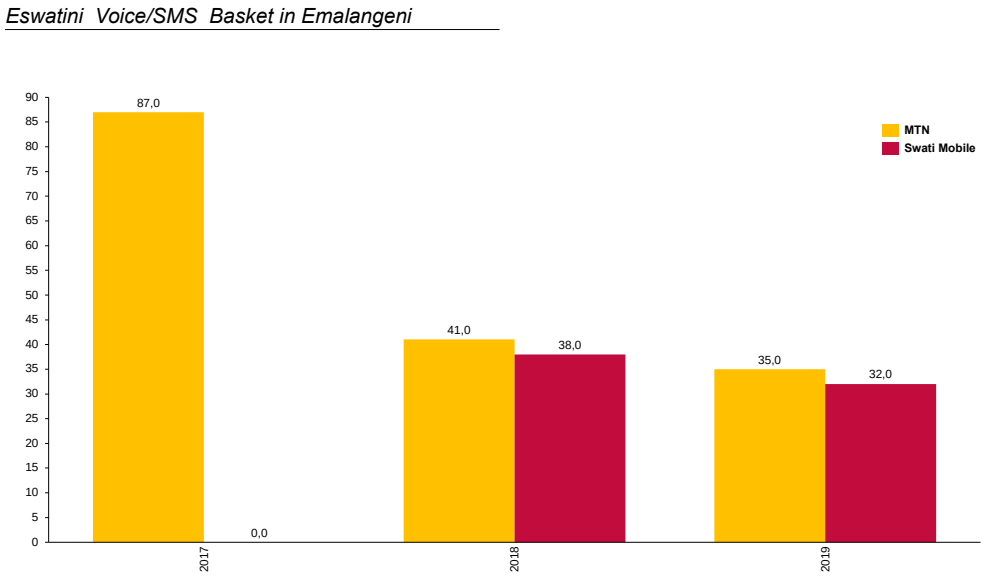
Figure 30: Eswatini Telecoms Operators 1GB Mobile Data Prices (E)



Source: ESCCOM

Between 2017 and 2019, MTN's 1GB mobile data offer became 40 percent cheaper, dropping from E 250 in 2017 to E 150 (USD 10,38) as the lowest price offer for a 1GB prepaid mobile data basket in the fourth quarter of 2019. This retail price reduction could only have been made possible through a concomitant reduction in wholesale costs. As mentioned in the wholesale analysis, dedicated wholesale bandwidth costs decrease by between 35% for up to 2 Mbps to 45% for 10 Mbps, 20 Mbps and 50 Mbps offerings during the period of assessment.

Figure 31: Eswatini Telecoms Operators Voice/SMS Basket Prices (E)



Source: ESCCOM

A similar downward trend is observed for the voice/SMS price basket. To compete with ESM's lower market entrance tariffs, MTN's voice/SMS prices were reduced by 60 percent from E 87 in 2017 to E 32/ USD 4,52 for the lowest priced Voice/ SMS basket offering in 2019. Again, this was a clear indication that competitive pressure can have a positive impact on pricing – thus the introduction of retail competition increased choice for consumers, as well as lowered prices.

5.3 COMPETITIVE/COMPARATIVE BENCHMARKING

A comparison of the mobile voice/SMS and data services pricing for Eswatini and African peers gives the Commission an indication of the level of competition in the sector whilst providing it with key information on the impact of the Price Transformation Programme on the average consumer. This section will first provide an overall assessment of Eswatini's key ICT indicators and voice/SMS and data pricing against the selected benchmark countries, then follow in the Annexure with a deeper dive into each of the countries.

5.3.1 Overall Country-Level Assessment

5.3.1.1 Benchmark countries – key indicators

Table 4: Eswatini benchmarked against SADC countries with similar population size

Eswatini benchmarked against Botswana, Lesotho, Namibia and Mauritius for Usage (ARPU and bandwidth per internet user) and Uptake (Active sim, Individual Internet user and Active Mobile broadband subscriber – per 100 inhabitants)				
	Country-level Indicator	Traffic light	Comparison average	Source
Average revenue per user (blended ARPU) (USD) (Compared with Botswana only)	7,31		6,91	MTN Quarterly Update for the period ended 31 March 2020[22]
International bandwidth per internet user (kbit/s)	8,5		45,5	ESCCOM, 2019 ITU – Measuring the Information Society Report, 2018
Uptake				
Active Sim cards per 100 inhabitants	94		104,44	ITU, 2018
Individual Internet users per 100 inhabitants	47		46,5	ITU, 2018
Active Mobile-broadband subscribers per 100 inhabitants	62		58,55	ESCCOM, 2019 ITU – Measuring the Information Society Report, 2018

Table 5: Eswatini benchmarked against countries with competitive mobile telecommunications markets

Eswatini benchmarked against Kenya, Zambia and Tanzania for Usage (ARPU and bandwidth per internet user) and Uptake (Active sim, Individual Internet user and Active Mobile broadband subscriber – per 100 inhabitants)				
	Country-level indicator	Traffic light	Comparison average	Source
Average revenue per user (blended ARPU) (USD) (Compared with Zambia only)	7,31		2,14	MTN Quarterly Update for the period ended 31 March 2020[23]
International bandwidth per internet user (kbit/s)	8,5		36,73	ESCCOM, 2019 ITU – Measuring the Information Society Report, 2018
Uptake				
Active Sim cards per 100 inhabitants	94		72,7	ITU, 2018
Individual Internet users per 100 inhabitants	47		19	ITU, 2018
Active Mobile-broadband subscribers per 100 inhabitants	62		29,9	ESCCOM, 2019 ITU – Measuring the Information Society Report, 2018

[22] *https://www.mtn.com/investors/financial-reporting/quarterly-trading-update/*
[23] *https://www.mtn.com/investors/financial-reporting/quarterly-trading-update/*

Table 6: Eswatini benchmarked against where MTN is the dominant operator

Eswatini benchmarked against Rwanda and Uganda for Usage (ARPU and bandwidth per internet user) and Uptake (Active sim, Individual Internet user and Active Mobile broadband subscriber – per 100 inhabitants)				
	Country-level indicator	Traffic light	Comparison average	Source
Average revenue per user (blended ARPU) (USD)	7,31		2,67	MTN Quarterly Update for the period ended 31 March 2020[18]
International bandwidth per internet user (kbit/s)	8,5		8,1	ESCCOM, 2019 ITU – Measuring the Information Society Report, 2018
Uptake				
Active Sim cards per 100 inhabitants	94		68	ITU, 2018
Individual Internet users per 100 inhabitants	47		23	ITU, 2018
Active Mobile-broadband subscribers per 100 inhabitants	62		29,2	ESCCOM, 2019 ITU – Measuring the Information Society Report, 2018

5.3.1.2 Usage

The **Average Revenue Per User (ARPU)** is measured by dividing the total revenue of an operator by its total number of subscribers/ users[24]. The ARPU used in this analysis was sourced from the MTN Quarterly Update for the period ended on 31 March 2020[25]. This data is a challenge to source and compile as different operators report under different financial periods, use different methods to calculate their ARPU and lastly use different exchange rates to present the data in USD. For the sake of data integrity and consistency, only the country within which MTN operates and has reported the latest year-end ARPU, is used as a regional proxy and compared to MTN Eswatini. Moreover, comparing MTN Eswatini to other countries' MTN operates in fits this analysis best as ESM has not reported its ARPU numbers.

It is notable in Tables 2, 3 and 4 above that Eswatini's ARPU of 7,31 is higher than all the comparison averages. The country with the closest ARPU to that of Eswatini is Botswana at USD 6,91. A high ARPU is indicative of high revenue generated from high prices and fewer subscribers, which in most cases happens to be the high-income earners. A high ARPU is suggestive of low competition. High pricing (and high ARPUs) closes out the provision of and access ICT services by lower-income consumers. High prices generally serve as a disincentive to the purchase of commodities and services and although MTN Eswatini has reduced its prices during the period of assessment, it is still expensive and even unaffordable to the majority of the consumer based on affordability data nationally, and in comparison, to other countries.

The **International Bandwidth Per Internet User (kbit/s)** measures the total used capacity of international bandwidth, in megabits per second (mbit/s), then converted to kbit/s and divided by the number of Internet users. Eswatini's 8,5 international bandwidth per internet user is lower in comparison with seven of the nine countries it is benchmarked against. Rwanda and Uganda report a collective comparison average of 8,1 which is the lowest of all the countries in this benchmark. Access triggers usage and in Eswatini this is hindered by the high prices charged for ICT services. The low international bandwidth per internet user score also exposes the Eswatini underdeveloped ICT infrastructure.

[24] *https://www.investopedia.com/terms/a/arpu.asp*
[25] *https://www.mtn.com/wp-content/uploads/2020/05/Quarterly-update-for-the-period-ended-31-March-2020-FINAL.pdf*

The rule of thumb is that a decrease in price leads to an increase in use, so the impact Eswatini Internet use is far below the average Internet use in like countries, namely Botswana, Namibia and Lesotho.

5.3.1.3 Uptake

The indicators Active Sim cards per 100 inhabitants, Individual Internet users per 100 inhabitants and Active Mobile-broadband subscribers per 100 inhabitants all measure the uptake of ICT services.

Active Sim cards per 100 inhabitants

Eswatini performs ahead of most of the benchmark countries and has seen an increase over the assessment period in active SIM cards and individual internet users, both per 100 inhabitants. However, the increase in active SIM cards per 100 inhabitants could be attributed to the multiple SIM phenomenon that is prevalent in many predominantly prepaid markets. This phenomenon could have been exacerbated when ESM entered the market. ESM subscribers bought a SIM care in response to the operator's offer of an escape from the prevailing high data and voice/SMS prices; however, MTN Eswatini still managed to retain its consumer base through offering better quality services. In such an instance, a consumer would hold two SIM cards.

Individual Internet users per 100 inhabitants

Eswatini recorded 47 individual internet users per 100 inhabitants, performing better than all the group countries comparisons, and the African average of 28,2 in 2019. While this high uptake of internet is impressive, Eswatini is far from reaching the global standards of internet saturation. Mauritius recorded 59 users, coming at the top and Kenya was the lowest at 18 users of the internet per 100 inhabitants. The uptake of internet is determined by socio-economic factors such as age, level of education and disposable income. The high number of internet user is in alignment with that of active sim-cards per 100 inhabitants, suggesting that the multiple SIM phenomenon could influence how the uptake is depicted.

Active Mobile-broadband subscribers per 100 inhabitants

In 2019, the number of active mobile-broadband subscriptions per 100 inhabitants for Africa stood at 34[26]. Of the benchmarked countries, Tanzania recorded the lowest mobile broadband penetration at 8,7 percent. However, Tanzania's poor performance of mobile-broadband in not suggestive that the country's telecommunications sector is underdeveloped and or under preforming. Tanzania hosts the latest broadband technologies as a result of the arrival of the submarine cables in early 2009 and the industry is specifically underpinned by forward-thinking regulatory environment[27]. Botswana leads with 66,9 followed by Eswatini with 62, while Mauritius and Namibia tied at the third place, recording 59 mobile broadband subscribers per 100 – all surpassing the African average. Statistics from ITU confirm that although affordability is of outmost importance in encouraging telecommunications services update, it is not the only important factor. Other factors such as low levels of education, lack of relevant content, lack of content in local languages, lack of digital skills, and low-quality internet connection may also prevent effect use of ICTs. The Kingdom is confronted by all if not most of these factors.

5.3.1.4 Internet use and mobile phone subscriptions

Mobile phones have been recognised as the most successful technology for connecting people who previously had no access, especially in rural and remote areas.[28] Since mobile phones have the potential

[26] *https://www.statista.com/statistics/249837/mobile-broadband-subscriptions-per-100-inhabitants-by-region/*
[27] *https://www.itu.int/en/ITU-D/Statistics/Documents/publications/misr2018/MISR-2018-Vol-2-E.pdf*
[28] *Kalvin Bahia and Stefano Suardi, "The State of Mobile Internet Connectivity 2019," 2019, https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2019/07/GSMA-State-of-Mobile-Internet-Connectivity-Report-2019.pdf.*

to improve the livelihoods of poor communities by providing them with access to services that were previously unavailable, such as mobile phone-based financial, agricultural, health and educational services, as well as access to simple communications. It is crucial that there is an appropriate measure to quantify mobile phone access and uptake; as there is evidence that the conduit to achieving high Internet use lies in mobile broadband.[29]

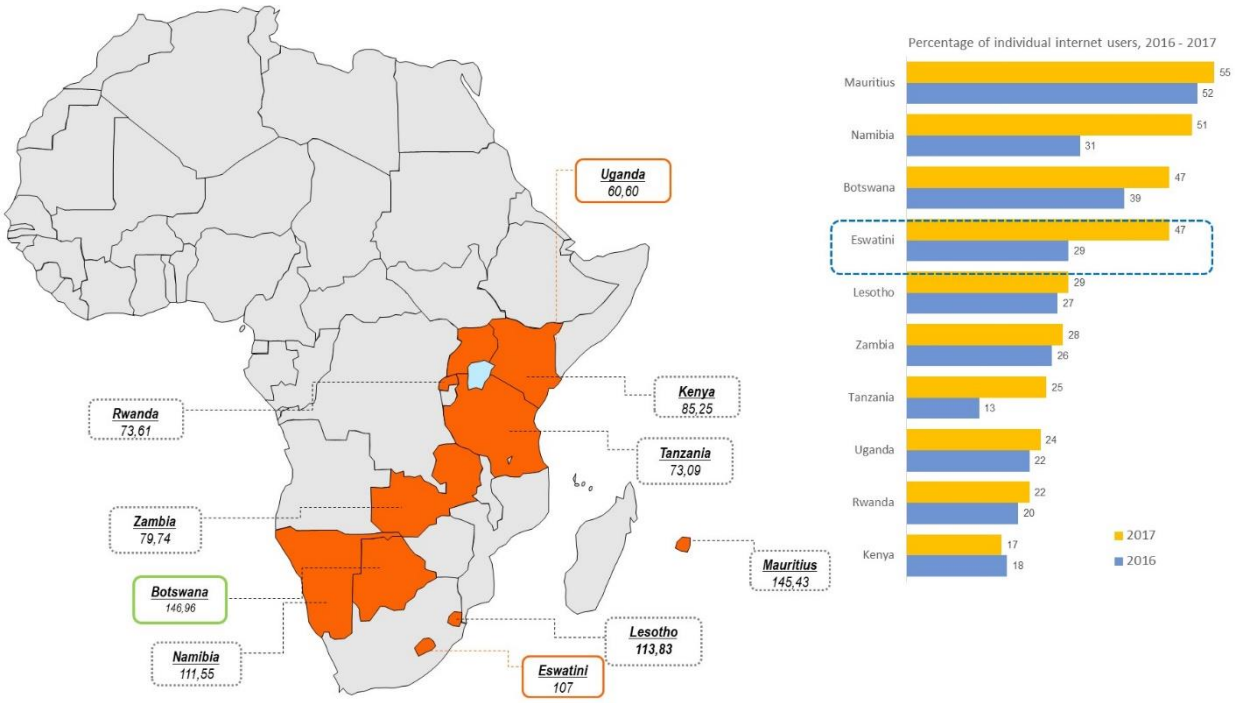
ITU statistical data (2018) reveals that Africa is the region with the lowest Internet usage rates, lowest active mobile-broadband subscriptions, and mobile cellular subscriptions per 100 inhabitants, at 28 percent, 34 percent and 80,1 respectively. However, the ITU reports that mobile phone penetration in many African countries has surpassed 100 percent, which can be attributed to a number of factors such as inactive pre-paid accounts and the multiple SIM cards phenomenon. This phenomenon is common in many African countries, where mobile subscribers often use multiple SIM cards to buffer against high off-net charges or to benefit from promotions. In these markets, the only way to accurately determine unique subscribers (or disaggregated users on the basis of gender, education, income, and rural and urban areas), is through nationally representative demand-side surveys, since they provide more reliable in-depth Internet usage and mobile penetration figures in a prepaid mobile market, which is disaggregated to reveal those who are most vulnerable in society. Demand-side surveys also provide insight on demand-side market dynamics and support strategies to stimulate demand. Lastly, demand side surveys provide valuable regulatory information on unmet needs, perceived barriers, and inequality challenges that citizens face in adopting mobile phone services and internet access, which is not available in supply side data. As a region, the African ITU data shows that internet usage rates are above the 20 percent penetration rate believed to be the critical mass necessary to enjoy the network effects associated with economic growth and development[30], but due to the large variations between countries and between cities and rural areas, some African countries will leverage the network effects more than others.

The Kingdom boasts a mobile phone penetration of 107 (by SIM card), which is above the regional average of 84 (for 2018), placing the Kingdom on the fifth place of the ten countries under review. At 146,96, Botswana recorded the highest mobile phone subscriptions per 100 inhabitants while Uganda recorded the lowest rate at 60,60 – amongst the benchmark countries.

Over the two-year period (between 2017 and 2018), the selected countries all experienced a general increase in internet usage. Eswatini had the highest percentage increase of individual Internet users, which increased from 29% in 2016 to 47% in 2017, and 107% in 2019 this is a noteworthy development since increased internet usage is positively correlated with economic growth[31]. The top five countries in the benchmark with the highest internet usage in 2017 (Botswana, Mauritius, Lesotho, Namibia and Eswatini) are also the countries where mobile penetration is higher than the regional average of 80,1 – this makes sense given that in Africa internet is access primarily using a mobile phone. A matter of interest is that although Kenya has a mobile phone subscription of 85,25, the country has the lowest internet usage in the overall country grouping, this implies that the state does not facilitate an efficient regulatory and policy environment to leverage the positive welfare impacts of the internet. MNOs are driven by commercial agendas and are not expected to drive the wider development agenda, unless regulated to do so.

Figure 32: (Left) Benchmark countries' mobile phone penetration, 2018 and (Right) Percentage of individual internet users, 2016 – 2017.

[29] *Alison Gillwald, Mariama Deen, and Onkokame Mothobi, "THE STATE OF ICT IN LESOTHO (2016)," 2017, https://researchictafrica.net/wp/wp-content/uploads/2018/01/2017_The-State-of-ICT-in-Lesotho_RIA_LCA.pdf.*
[30] *Lars-Hendrik Roller and Leonard Waverman, "Telecommunications Infrastructure and Economic Development: A Simultaneous Approach," American Economic Review 91, no. 4 (September 2001): 909–23, https://doi.org/10.1257/aer.91.4.909.*
[31] *Mohammad Salahuddin and Jeff Gow, "The Effects of Internet Usage, Financial Development and Trade Openness on Economic Growth in South Africa: A Time Series Analysis," Telematics and Informatics 33, no. 4 (November 1, 2016): 1141–54, https://doi.org/10.1016/j.tele.2015.11.006.*



Source: ITU, 2019

The GSMA Mobile Connectivity Index reveals that amongst the benchmarked countries, after Zambia, Eswatini performs poorly. The Kingdom is classified as "emerging" and has an overall index score of 35,86, slightly below the regional average of 38,42. According to the GSMA, in 2019, Eswatini's overall index rank suggests that mobile Internet adoption ranges between 20 percent and 30 percent[32]. In the overall country grouping, Eswatini has the lowest content and services score, this means the development of locally relevant content and services is an area that requires more focus to drive increased mobile internet adoption.

[32] *Bahia and Suardi, "The State of Mobile Internet Connectivity 2019."*

5.3.2 Biggest and Smallest MNOs

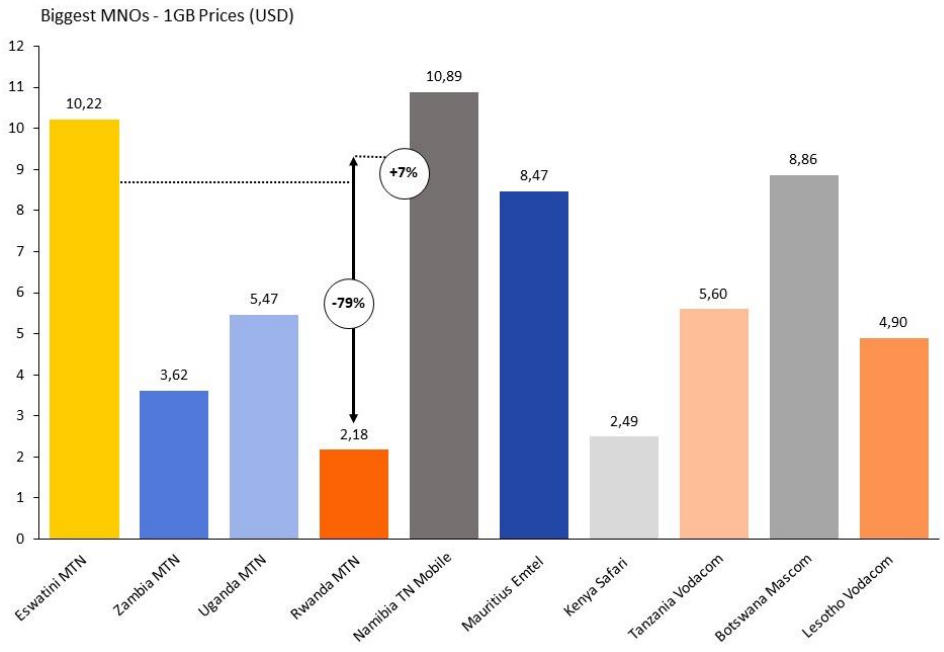
Table 7: Mobile Connectivity Index

COUNTRY	CLUSTER	INDEX SCORE	ENABLER SCORES			
			Infrastructure	Affordability	Consumer Readiness	Content and Services
Mauritius	Advanced	65,48	57,4	63,37	71,93	70,27
Kenya	Transitioner	50,79	52,86	44,88	59,08	47,49
Botswana	Emerging	49,36	46,78	49,41	68,18	37,67
Namibia	Emerging	45,20	52,37	43,67	69,78	26,17
Rwanda	Emerging	42,96	63,49	33,79	48,12	33,00
Tanzania	Emerging	40,99	36,93	34,45	55,51	39,96
Lesotho	Emerging	40,23	57,19	38,10	64,11	18,79
Uganda	Emerging	40,01	39,88	34,08	49,23	38,29
Eswatini	Emerging	35,86	37,71	40,5	58,88	18,40
Zambia	Discoverer	33,81	37,05	24,91	57,71	24,55
REGIONAL AVERAGE		**38,42**	**38,85**	**36,76**	**49,39**	**31,2**

Source: GSMA, 2019

Africa is characterised by diverse markets with varied ICT sector dynamics. Some markets are developed and operational at the back of greater government intervention, competitive ICT sector and effective regulatory landscape. On the other hand, some markets are barely regulated, and infrastructure investment is left as a burden on the MNOs. It is therefore, of interest to assess how the market leaders in the nine (9) benchmark countries fair in comparison with MTN Eswatini, and how the smallest MNOs compare with ESM. This section highlights only the price comparisons without diving into details behind the price points. This is provided for in the individual country's analysis in the Annexure.

Figure 33: Biggest MNO in benchmark countries 1GB Mobile Data Prices (USD)

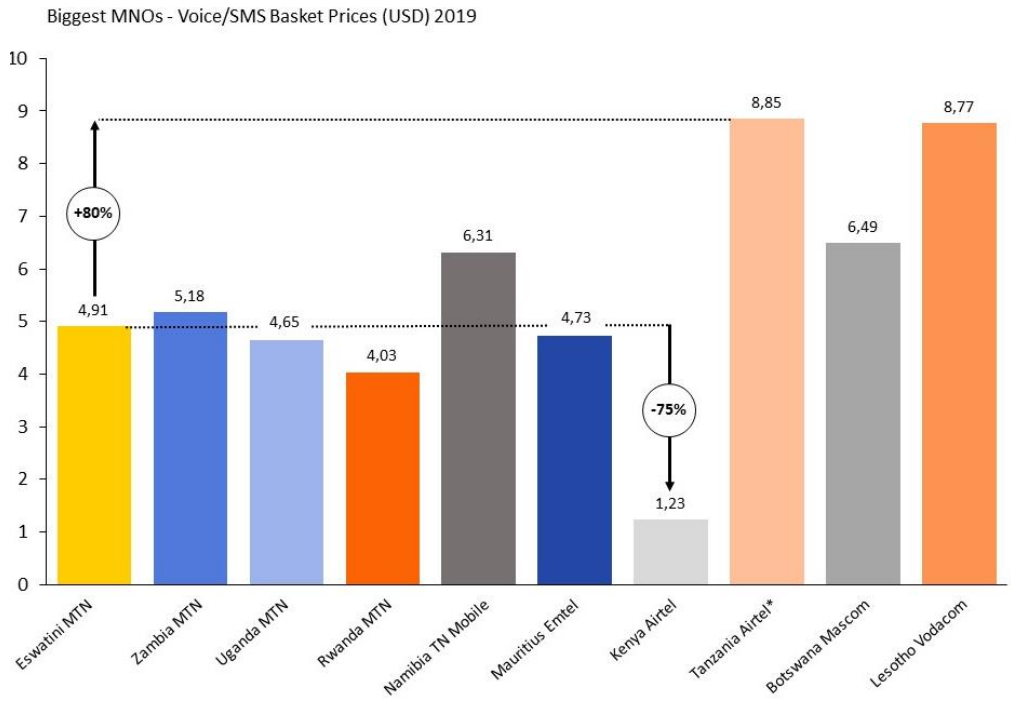


Source: RIA African Mobile Prices (RAMP) Index, 2019

The figure above depicts the 1GB mobile data prices for all the market leaders in the 10 benchmark countries in 2019. MTN Eswatini is indexed against the lowest priced and most expensive MNO. The data reveals that MTN Eswatini is 79% more expensive than the lowest priced market leading MNO, which is MTN Rwanda and it is 7% cheaper than Namibia TN Mobile, which is the most expensive market leader.

When comparing ESM against the smallest MNOs in the benchmark countries, the data revealed that ESM is priced at 88% more than Namibia MTC, which has the lowest priced 1GB mobile data amongst its peers. ESM offers the 1GB mobile data at the most expensive price within this comparison. Compared to the second most expensive MNO, ESM offers its 1GB mobile data at 14% more than Smile Uganda. Smile specializes in only 4G-LTE technology, with the aim to provide consumers with the country's fastest and most reliable SuperFast 4G LTE mobile broadband services[33]. This market positioning rationalises Smile's price point.

Figure 34: Biggest MNO in benchmark countries Voice/SMS Basket Prices (USD)



Source: RIA African Mobile Prices (RAMP) index, 2019

As mentioned in the Methodology. The voice/SMS basket is calculated on 30 calls split into 50 minutes based on user split between networks and peak / off-peak /off-off peak times, and 100 SMSs[34]. As prescribed by OECD, several tariff elements are calculated based on the number of calls rather than minutes, hence the definition of voice usage in calls rather than minutes[35].

MTN Eswatini is placed in the median in comparison with the biggest MNOs in the benchmark countries. *Airtel Tanzania was used in place of Vodacom since did not release its voice/SMS prices for 2019. MTN Eswatini is 80% cheaper than Airtel Tanzania, and 1,23% more expensive than Vodacom Lesotho which is the lowest priced voice/SMS basket offering within this comparison.

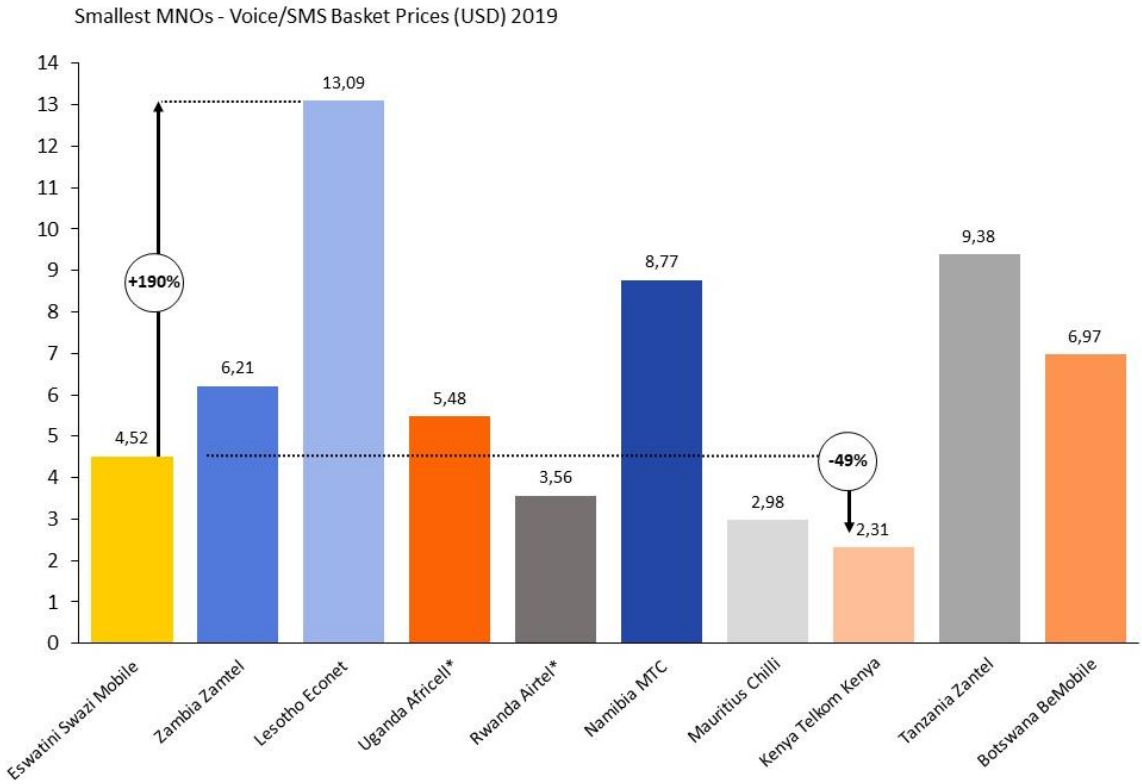
[33] *https://smilecoms.com/operations/#uganda*
[34] *https://researchictafrica.net/ramp_indices_portal/*
[35] *https://researchictafrica.net/ramp_indices_portal/*

The notable trend is that the Eswatini MNOs price per 1GB is more expensive than the voice/SMS basket in comparison with the benchmark countries. The figure above shows that ESM's voice/SMS pricing is 190% cheaper than the most expensive voice/SMS basket offering by Econet Lesotho, the smallest MNO in that market. Looking at the largest MNO, ESM is placed somewhat in the median, not the most expensive and yet not the lowest priced. Telkom Kenya has the lowest prices , offering the voice/SMS basket at a price 49% lower than ESM.

5.3.3 Pricing Assessment

5.3.3.1 Benchmarking against all nine (9) selected countries

Figure 35: Smallest MNOs in benchmarked countries Voice/SMS Basket Prices (USD)



Source: RIA African Mobile Prices (RAMP) Index, 2019

With the exception of Namibia and Uganda, the lowest 1GB data price basket offered in all the other countries has declined over the three-year period, which suggests that the mobile data market is gradually reaching maturity in most countries. This is most likely due to technological progress, ICT infrastructure upgrades and investments, uptake of relatively affordable devices, and an enabling policy and regulatory environment that encourages competition in the market.

Despite the general gradual decline in 1GB data prices that correlates with the reduction in technology prices, Eswatini consistently recorded the highest comparative prepaid 1GB data basket price offer relative to the other countries; on the other extreme Tanzania recorded the lowest comparative price basket in 2017 and 2019.

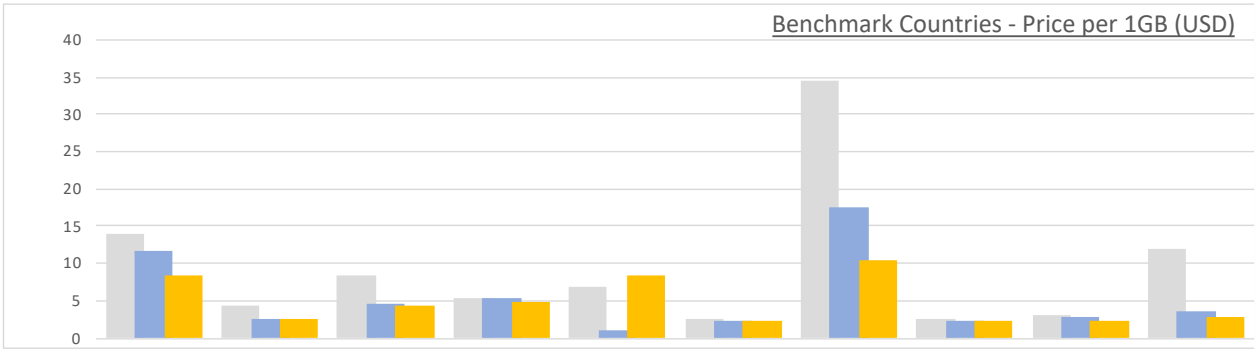
In 2017, Eswatini's annual average price for a 1GB data basket was USD 34,41, fourteen (14) times higher than the annual average of USD 2,43 offered in Tanzania. The discrepancy in prices between Tanzania and

Eswatini can be attributed to the differences in the level of effective competition in the mobile telecommunications market (Tanzania had at least 7 mobile operators during the period) and the level of effective growth enabling regulation of the respective countries, further detail on this assessment is provided in the detailed country level benchmark analysis. Competition is a key aspect of driving down prices.

- Namibia's unusually low 1GB prepaid mobile price in 2018, can be attributed to the launch of a new product, Aweh Go which was offered by MTC as a new cheaper product that replaced Aweh Super.
- In Zambia, a new entrant, Uzi was expected to join the market to compete with the incumbents and this led to a short-lived price war that resulted in a 70 per cent decline in data prices. However, Uzi's licence was withdrawn after the operator failed to launch as per agreed terms[36], which is also discussed further in the country-level analysis.

At the end of the three-year review period, Eswatini's 1GB prepaid mobile price basket was nearly 50 percent cheaper at USD 10,38 as depicted in the figure below. Despite the significant decrease, data prices in the Kingdom remain the most expensive amongst peers.

Figure 36: Annual average of the lowest priced 1GB prepaid mobile data price by country (USD)



	Botswana	Kenya	Lesotho	Mauritius	Namibia	Rwanda	Eswatini	Tanzania	Uganda	Zambia
2017	14,07	4,42	8,32	5,42	6,79	2,58	34,43	2,43	2,95	11,82
2018	11,75	2,48	4,6	5,44	1,14	2,35	17,43	2,2	2,69	3,53
2019	8,5	2,47	4,32	4,75	8,5	2,23	10,38	2,18	2,18	2,72

Source: RIA African Mobile Prices (RAMP) Index, 2019

5.3.3.2 Comparison to the other territories analysed

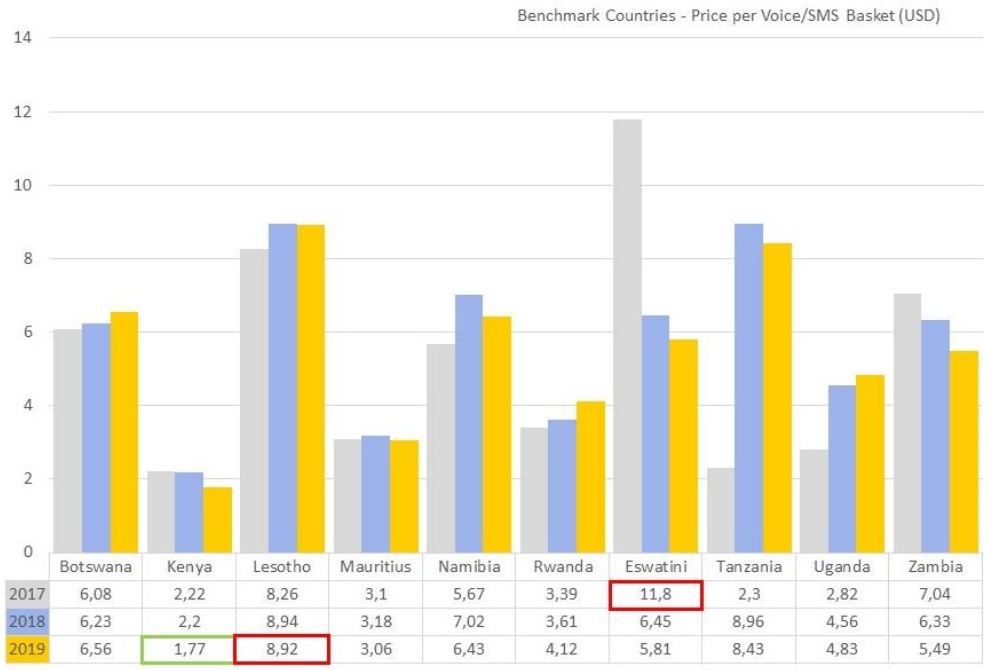
The figure below reveals that at the country level, the prepaid price of a voice/SMS basket does not exhibit any notable general trend. Eswatini's prepaid price voice/SMS decreased, while the offers in Botswana, Rwanda and Uganda increased during the period under review. In 2017, Eswatini recorded the highest annual average offer for a voice/ SMS basket at USD 11,80, while Kenya had the lowest offer at USD 2,22.

In 2019, at USD 8,92, Lesotho recorded the highest price for a voice/SMS basket, while Kenya recorded the lowest price at USD 1,77. In the same period, Eswatini recorded a reduced annual average price from the previous year of USD 5,81. Tanzania's average quarterly prices increased between 2017 and 2018 due to changes in availability of the lowest priced product in the market; Vodacom's Ongea Deilee was the lowest

[36] *Onkokame Mothobi, "Uzi's Failed Attempt to Enter Zambian Market Leads to More than 70% Fall in Data Prices," 2019, https://researchictafrica.net/wp/wp-content/uploads/2019/11/Zambia_SNT_RAMP_policy_brief_2-2019.pdf.*

priced product in the period, averaging USD 2,30 until it was discontinued in 2018, which resulted in Airtel Tanzania recording the lowest priced offer of USD 8.96 in 2018.

Figure 37: Annual average of the lowest priced voice/SMS basket by country (USD)



	Botswana	Kenya	Lesotho	Mauritius	Namibia	Rwanda	Eswatini	Tanzania	Uganda	Zambia
2017	6,08	2,22	8,26	3,1	5,67	3,39	11,8	2,3	2,82	7,04
2018	6,23	2,2	8,94	3,18	7,02	3,61	6,45	8,96	4,56	6,33
2019	6,56	1,77	8,92	3,06	6,43	4,12	5,81	8,43	4,83	5,49

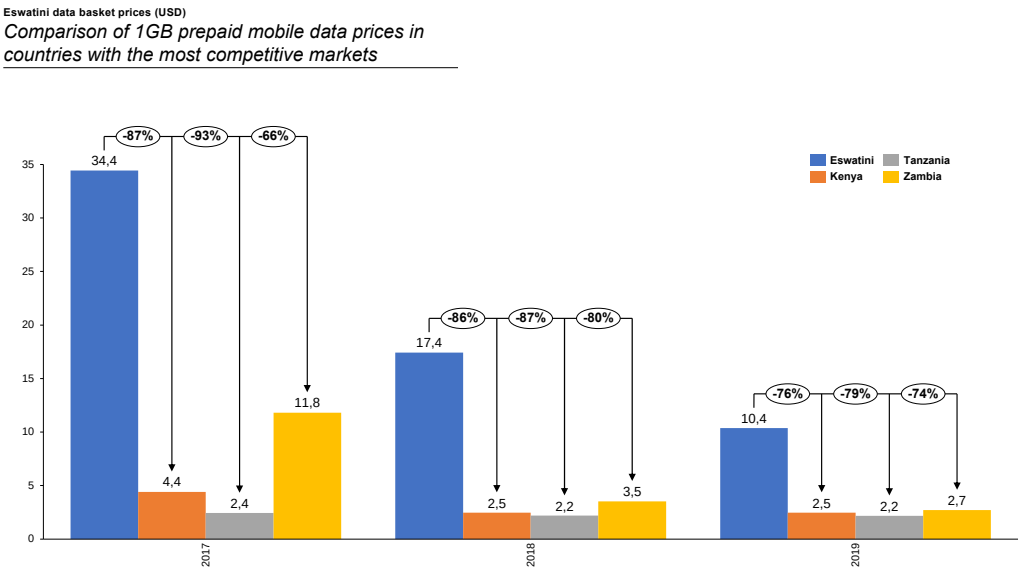
Source: RIA African Mobile Prices (RAMP) Index, 2019

5.3.3.3 Benchmarking against Competitive Mobile Markets

Kenya, Zambia and Tanzania, were selected as comparators in the most competitive market category because they offer amongst the lowest mobile operator service prices on the continent. However, it should be noted that they are not direct comparators to Eswatini given the variations in cost structures of their ICT sectors and competition in these markets (as all of these countries have more than three fairly mature and multinational MNOs).

In effective competitive markets, operators use a variety of strategies to increase profits, market share, and sales volumes through; pricing, product innovation, distribution, and promotions. These strategies allow MNOs with smaller market share to exert pricing pressure on the dominant market players, which lowers prices and spurs innovation in the mobile sector. This has positive spill over effects for subscribers' mobile services uptake, social development and economic growth, and the potential to bridge the digital divide. This country level assessment analyses the lowest country level data and Voice/SMS price levels in the countries that have the most competitive markets in Africa.

Figure 38: Comparison of 1GB prepaid mobile data prices in countries with the most competitive markets.



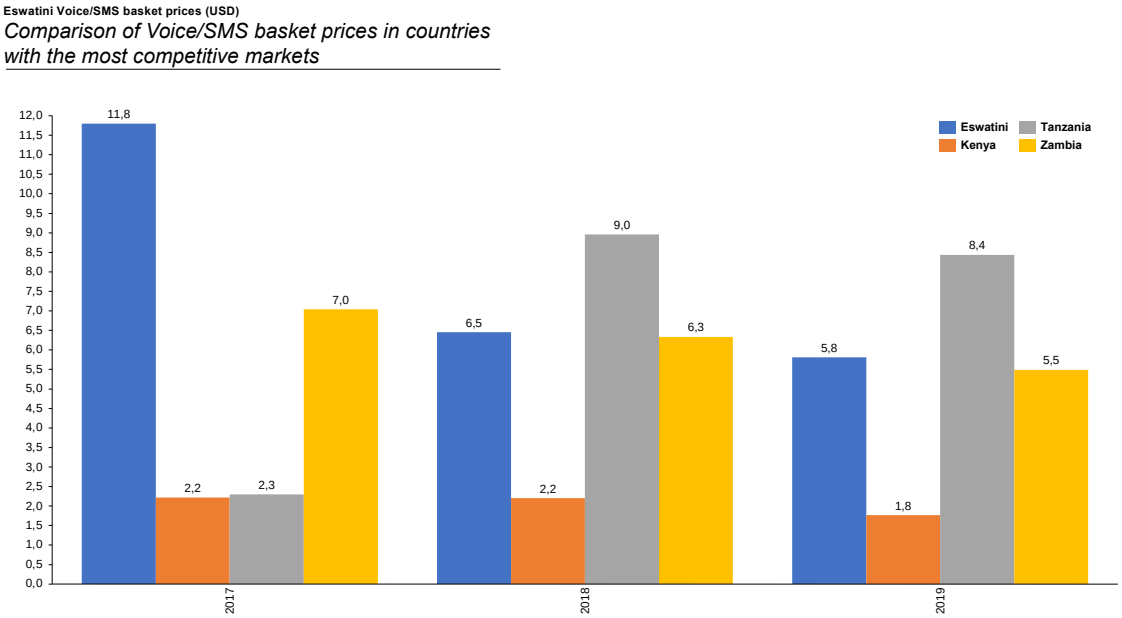
Source: RAMP, 2019

Based on the lowest priced 1GB data price basket offered in every country in the group, which may differ across operators, the figure above above indicates that throughout the review period, Eswatini recorded the highest prepaid 1GB mobile data price when compared to the other markets in this grouping. Despite the reduction in prices by more than 50% in early 2018, the 1GB price in Eswatini was still five times higher than that in Tanzania (which had the lowest priced prepaid 1GB mobile data price basket offer in the period under review). The decline of prices in Zambia mirrors the trend in Eswatini – seeing a notable price decrease over the course of the three-year period. In 2019 Zambia, Kenya and Tanzania all recorded a 1GB price averaging USD 2,46; while Eswatini's 1GB price was USD 10,40, four times higher than the offers in the other countries in this "competitive market" grouping.

Noteworthy is that Tanzania, a large, least developed country (LDC) faces many more challenges than the Kingdom to serve its citizens in a cost-effective way, such as poor mechanisms to standardize the ICT sector, many operators with weak investments prospects, a lower Gross national Income (GNI) per capita, and a significant current account deficit, amongst others. Notwithstanding these challenges, Tanzania consistently recorded the lowest 1GB price basket.

In 2017, the average annual prepaid voice/SMS basket price in Eswatini was almost six times higher than the lowest priced annual basket price, which was recorded at USD 2,13 in Kenya. ESM's launch in 2017 effectively reduced the Kingdom's voice/SMS mobile price from USD 11,8 to USD 6,5 in 2018. In the last year of the review period, Eswatini's voice/SMS price basket was relatively competitive at USD 5,8 placed slightly higher than Zambia. Tanzania took a price in both 2018 and 2019, pricing its voice/SMS basket as the most expensive within this grouping.

Figure 39: Comparison of Voice/SMS basket prices in countries with the most competitive markets.



Source: RAMP, 2019

Figure 40: Summary of Eswatini and comparison average prices (USD)

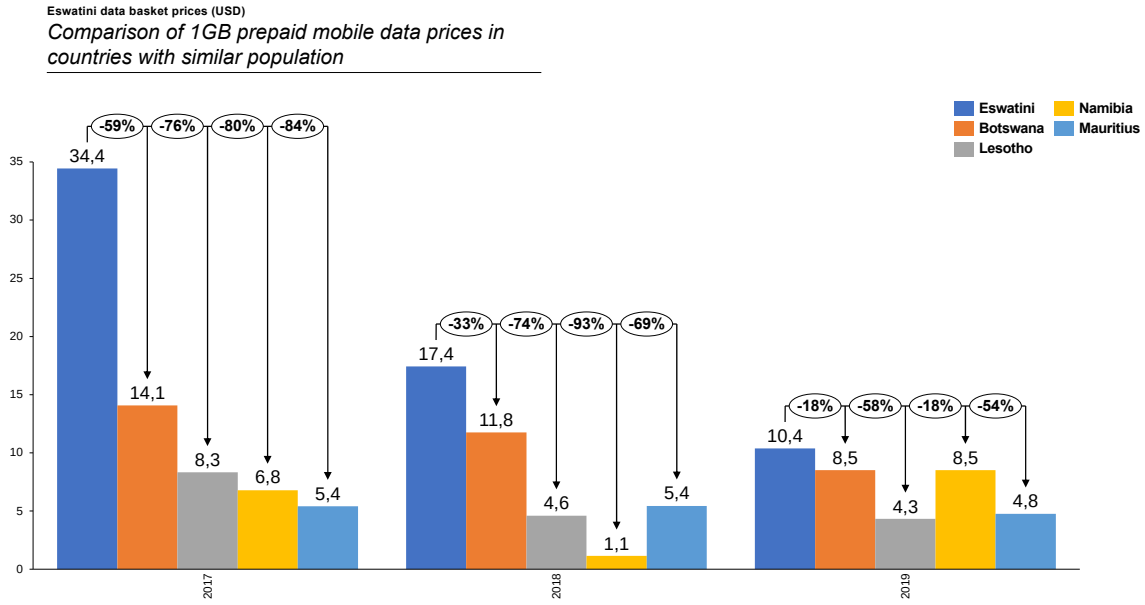
Eswatini benchmarked against Kenya, Zambia and Tanzania for Prepaid voice/SMS basket and Mobile Data Prices in 2019				
Affordability	Country-level Indicator	Traffic light	Comparison average	Source
Mobile prepaid voice and SMS basket (USD)	5,81		5,23	RIA
Mobile prepaid 1GB data basket (USD)	10,38		2,46	RIA

Source: PYGMA Consulting, 2019

5.3.3.4 Benchmarking against SADC Region

This country level assessment analyses the lowest country level data (1GB) and Voice/SMS basket price levels in the SADC countries that have a similar population size to Eswatini. Mauritius, Namibia, Botswana and Lesotho have similar population sizes of below 2 million. The countries are mostly prepaid markets and are heavily influenced by South African mobile sector costs and trends. These countries also have sparse populations and with the exception of Mauritius, are part of the Southern African Customs Union (SACU), which partially explains the strong economic ties to South Africa.

Figure 41: Comparison of 1GB prepaid mobile data prices in countries with similar population

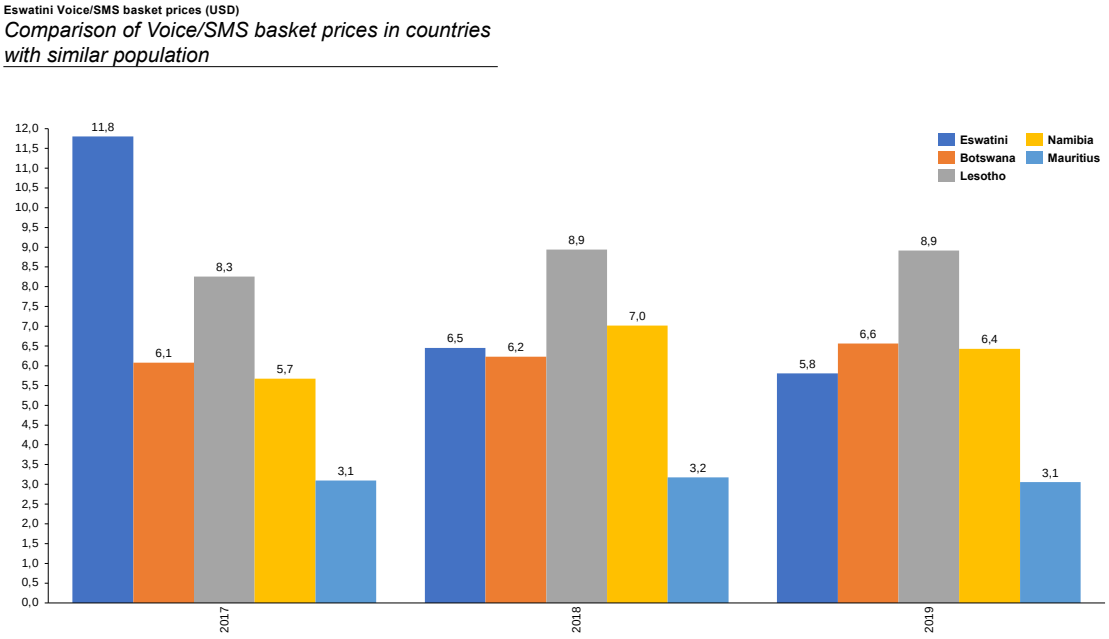


Source: RAMP, 2019

At the end of the review period, Eswatini's lowest 1GB prepaid mobile data price basket is still comparatively higher than the other countries in this SADC peer grouping. Despite a clear reduction of prices in Eswatini in the review period, at USD 10,38 the Kingdom's lowest data basket price in 2019 is eight times higher than the lowest priced offer for 1GB of USD 1,25 in Namibia. Like Eswatini, both Namibia and Lesotho have duopolistic markets, but the relatively lower data prices in Namibia and Lesotho can be attributed to the fact that both countries have benefited from extensive continental infrastructure cross-border networks and participation in several undersea cable construction projects.

Interestingly, Lesotho's mountainous topography seems not to have hindered ICT infrastructure investments in the country, which suggests a degree of liberalisation in the market that attracted FDI in the industry; although given the duopolistic market structure, Lesotho's current regulatory and policy framework is still not sufficient to drive digital use and access.

Figure 42: Comparison of Voice/SMS basket prices in countries with similar population.



Source: RAMP, 2019

In contrast to the trend in data prices, at the end of the review period, after Mauritius, Eswatini's voice/SMS basket price was the lowest priced offer at USD 4,52. The overall impact of Eswatini Mobile's launch was a decrease in the voice/SMS price basket offered in the Kingdom by 50% and this resulted in Eswatini having amongst the lowest voice/SMS price baskets when compared with other countries in the SADC peer grouping

Figure 43: Summary of Eswatini and comparison average prices (USD)

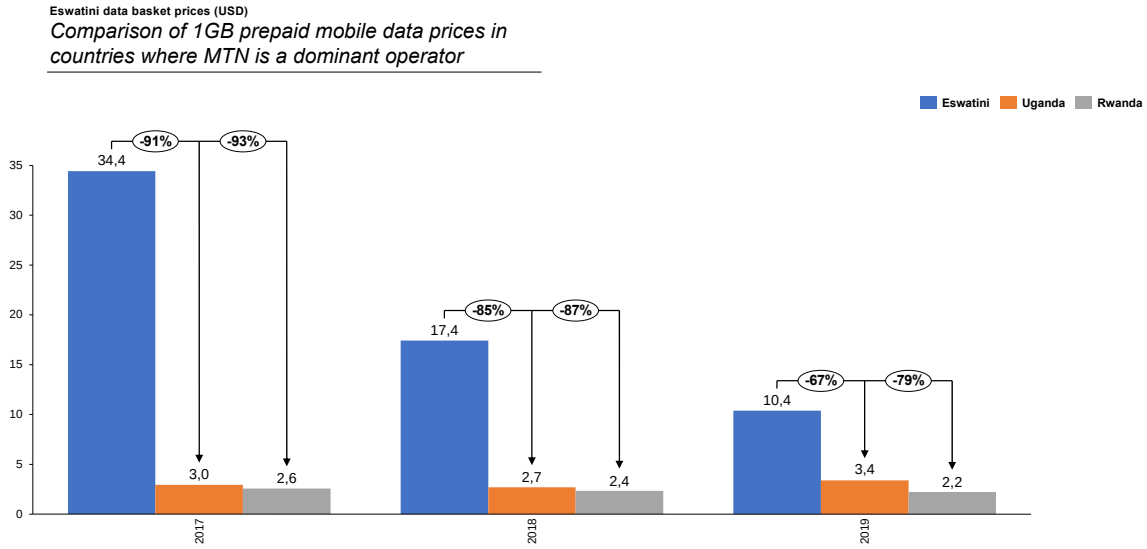
Eswatini benchmarked against Botswana, Lesotho, Namibia and Mauritius for Prepaid voice/SMS basket and Mobile Data Prices in 2019				
Affordability	Country-level indicator	Traffic light	Comparison average	Source
Mobile prepaid voice and SMS basket (USD)	5,81		6,42	RIA
Mobile prepaid 1GB data basket (USD)	10,38		6,52	RIA

Source: PYGMA Consulting, 2019

5.3.3.5 *Benchmarking against markets where MTN is a dominant operator*

As MTN is the MNO with the biggest market share in Eswatini, it is important to note the prepaid mobile price baskets offered by MTN in other markets in which it operates in the region, namely Rwanda and Uganda. In comparison to Eswatini, Rwanda and Uganda have relatively more liberalised and competitive markets with more mature regulatory and policy frameworks. As the largest operator in each of the three markets, it is useful to observe MTN's behaviour in more competitive markets. This analysis provides insights on how the MNO tends to respond to the arrival of new entrants.

Figure 44: Comparison of 1GB prepaid mobile data prices in countries where MTN is a dominant operator.

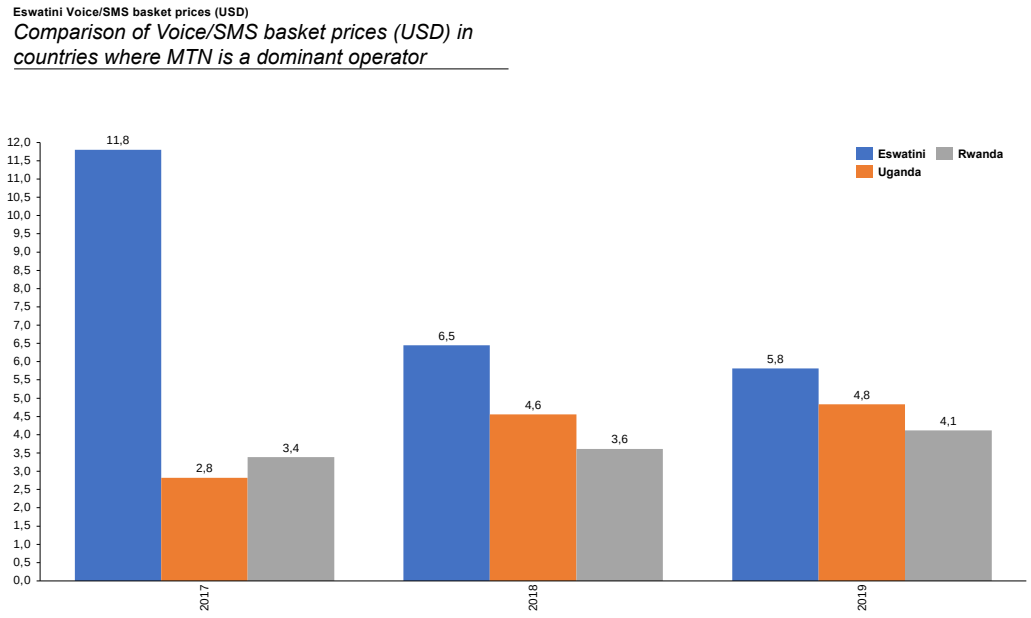


Source: RAMP, 2019

In terms of Eswatini's 1GB prepaid mobile data price basket offer, the country performs poorly relative to other countries in the grouping of countries where MTN operates, as seen in the Figure above. At the beginning of the period under review, Eswatini's 1GB prices were recorded at USD 34,4, Uganda at a significantly lower USD 3,0 and Rwanda at USD 2,6. Eswatini's prices were five times more expensive than Rwanda, which offered the lowest prices in 2019.

Arguably due to ESM's launch in the market, MTN Eswatini's offer gradually decreased to USD 10,4 in 2019. In the same period, Rwanda decreased its pricing further, albeit at a marginal rate. At USD 2,2for 1GB, Rwanda's price was the lowest offer in the grouping at the end of the review period. Amongst other factors, the discrepancy in 1GB data prices between Rwanda and Eswatini can be attributed to the differences in the degree of the enabling ICT policy and regulatory environment and ICT infrastructure investment in each country.

Figure 45: Comparison of Voice/SMS basket prices (USD) in countries where MTN is a dominant operator.



Source: RAMP, 2019

Figure 46: Summary of Eswatini and comparison average prices (USD)

Eswatini benchmarked against Uganda and Rwanda for Prepaid voice/SMS basket and Mobile Data Prices in 2019				
Affordability	Country-level indicator	Traffic light	Comparison average	Source
Mobile prepaid voice and SMS basket (USD)	5,81		4,48	RIA
Mobile prepaid 1GB data basket (USD)	10,38		2,82	RIA

Source: PYGMA Consulting, 2019

The figure above reveals the significant drop in Eswatini's voice/SMS price basket in 2017, that coincides with Eswatini Mobile's launch in the Kingdom. At the end of the review period Eswatini had a more competitive Voice/SMS basket price, that correlated with the offers of other countries in this grouping. By end of 2019, Eswatini recorded a voice/SMS price basket of USD 5,8. The price variation between Eswatini's offer and the lowest offer in the group of USD 4,1 which was recorded by Rwanda was marginally lower. In this area Eswatini appears to have made relatively good progress.

MTN's prepaid voice and SMS basket is moderately priced in Eswatini, only slightly higher than in Uganda and Rwanda as also seen in the biggest MNO comparison above. The 1GB tells a different story - as at 2019, the price of 1GB in Eswatini was USD 10,38 while in Rwanda and Uganda was on average USD 2,82. The difference is significant. As with the other country comparisons, Eswatini's voice/SMS average price is closer to the country comparison average than the 1GB price which is far much higher.

5.5 KEY FINDINGS

Amongst the ten (10) countries analysed for the benchmark (including Eswatini) key indicators are:

- The Kingdom ranked fifth in terms of mobile phone subscriptions per 100 inhabitants (93,53), based on the latest ITU data (2017).
- At 47%, the country ranked third for the percentage of individual internet users and had the highest percentage increase in this category (from 29% in 2016 to 47% in 2017).
- In terms of the Mobile Connectivity Index, Eswatini's 35,86 index score ranked higher than only Zambia out of the benchmarked countries.
- The Kingdom's low infrastructure and content and services were shown to be below the regional average, which suggests that the Kingdom lacks high-performance mobile internet network coverage and that there is weak availability of secure online content and services that is accessible and relevant to the local population.

In terms of pricing:

- Although data prices as represented by the 1GB price, have decreased in the Kingdom between 2017 and 2019, the country consistently recorded the highest comparative prepaid 1GB data basket price offer than the other countries, at USD 10,38 in 2019 while the country with the lowest priced data offerings, Tanzania, averaged at USD 2,18 in the same year. Eswatini's 1GB price was the highest across all peer group categories.
- Eswatini's voice/SMS prices also decreased in the assessment period and were comparable to regional peers across all peer groups. The average offer for a prepaid Voice/SMS basket was USD 5,81. This was marginally higher that the pricing in competitive markets (Kenya, Zambia, Tanzania) and MTN markets (Rwanda, Uganda. The prepaid voice/SMS basket in Eswatini is lower priced than in peer SADC countries.

While the prepaid voice/SMS basket is reasonable, data prices are high. This suggests that there are significant obstacles that hinder Internet demand and adoption (access and usage). To mitigate these obstacles, Eswatini should consider implementing policies and regulation that facilitate wide-spread Internet access and use, which stimulates Internet demand. As mentioned in other parts of the report, it is a given that a country's level of development and geographical characteristics will affect Internet demand facilitation strategies, for instance, the topography and whether a country is landlocked or not affects ICT infrastructure deployment. Lastly, effective competition in the wholesale and retail markets can lead to price reductions. Eswatini has seen data and voice/SMS price decreases as MNO's offer lower prices to compete for market share with the entry of by Eswatini Mobile's in the market as a disrupter. Despite the change in market dynamics, MTN still maintains its dominance and ESCCOM should consider the price related remedies available to reduce pricing, in particular data pricing which is high across all the peer groups that were analysed.

5.6 KEY INSIGHTS AND RECOMMENDATIONS

The overall sentiment from the peer country retail pricing analysis is that the effectiveness of competition on price reduction is evident, and therefore encouraged. The comparative analysis indicates that technological progress that has spurred including ICT infrastructure upgrades and investments, uptake of relatively affordable devices, and an enabling policy and regulatory environment that encourages competition in the market are the factors underpinning the price reduction across the African markets. In light of the declining global relevance of voice and SMS, it is important that ESCCOM and the operators in Eswatini focus on data and specifically broadband pricing in the next round of reviews. This said, voice and SMS pricing remain relevant as a significant portion of the population do not have access to smartphones or 3G and 4G data at affordable rates.

The wholesale and retail markets are vertically integrated; it is recommended that any intervention with pricing begin at the wholesale market, with modest decline in the retail market. With this background, the following recommendations can be made:

- The Price Transformation Programme ran from 2016 till 2019, and this study focuses on that period in particular. However, as we know that vertically integrated markets, as wholesale and retail are, take some time to show trickle down effects and changes in the lower market (retail) may go on sometime after the end of the actionable period. This has been the case with Eswatini as well, as we see that the 2020 pricing has dropped significantly from the 2019 pricing, placing Eswatini well below regional peers in terms of data costs. The pricing submitted for 2020 shows that Eswatini's 1GB data basket at USD 6,06 is significantly lower than Botswana, Namibia, and Lesotho at USD8,25, USD9,79 and USD 6,12 respectively.
- The Voice/SMS backset for Eswatini came in as the sixth lowest pricing in a comparison of 10 countries, lower than its regional peers Botswana and Namibia. This shows that this market product has adjusted to the developments and changes in the market and has become a lot more affordable for the average end user.
- The Universal Access and Service Strategy has a primary mandate and pillar to increase affordability to all citizens; the Commission together with the UAS Strategy can implement e-Rate pricing for schools, health centers, institutions of higher education and training centers, Tinkhundla Centres, Libraries, and Police Stations.
- It is understood that the Commission' has no mandate to prescribe retail pricing, however, it will be regulatory sound for the Commission to present the price ceiling and a price floor. By implementing a pricing ceiling and floor the Commission ensures that market remains effectively and efficiently competitive, the Operators remain sustainable, and that no predatory pricing may be done by operators who have economies of scale. To this end, it is recommended that a price ceiling of USD 8,25 be implemented and price floor of USD 4,77; these prices should be reviewed annual to ensure that they are still applicable to the market and the region. Negotiating these proposed pricing points will assist the Commission to determine whether the vertically integrated wholesale market is influencing the retail prices or if there are other market forces at play. Furthermore, by setting a ceiling and a floor the Commission can monitor the impact of the Wholesale market on retail, at which the retail market prices reach the floor pricing the Commission would have achieved reasonable affordability throughout the nation.
- In its quest to reform the market, the Commission should consider the regulatory tools available in section 28 of the ECA (transparency obligations, cost-based pricing obligations, cost accounting obligations). It is noted that all of the markets (both wholesale and retail) assessed in this study have a cost-based pricing regime, and most have regulatory accounting requirements of varying forms.

6. CONCLUSION

This report investigated the wholesale and retail telecommunications prices in the Kingdom in an effort to assess the impact of the Price Transformation Programme, which saw the reduction in wholesale prices. The report further investigated the wholesale (subject to data availability) and retail prices of data and prepaid voice/SMS baskets in Eswatini in relation to other peer group countries in Africa.

At a wholesale level, the negotiations that resulted in lower wholesale prices have resulted in decreased national leased line bandwidth costs, while international bandwidth costs increased only for the 2019 year. While installation fees for international leased lines remained steady, installation fees for national leased lines increased. This could indicate cross-subsidisation between installation fees and monthly bandwidth prices. It is important that ESCCOM obtain an understanding of EPTC's costs throughout the broadband value chain and identify any potential anticompetitive behaviour that the operator may be undertaking (anticompetitive cross subsidies, excessive pricing, etc) – the application of section 28 of the ECA can assist the Commission to achieve this.

At a retail level, the introduction of ESM stimulated competition resulting in a decrease in overall prices in the Kingdom between 2017 and 2019. Prepaid voice and SMS prices dropped and are now comparable to Eswatini's regional peers. However, the country consistently recorded the highest comparative prepaid 1GB data basket price offer relative to other countries, averaging at USD 10,38 in 2019 compared to the country with the lowest priced data offerings, Tanzania, which averaged USD 2,18 for a 1GB bundle in the same year. Given that the wholesale and retail markets are vertically integrated, we have included an analysis of the 2020 market prices. As can be expected in the, the impact of the decreases in the wholesale market have continued to be seen in the retail market even after the end of the review period. The 2020 1GB prepaid basket for Eswatini came in lower than all three comparable regional peers, making it the 3rd lowest 1GB prepaid basket out of 7 countries.

The table below presents key findings and recommendations for wholesale and retail levels services in Eswatini, based on the results of the Benchmarking Study. Following these tables are the two wholesale recommendations in a graphical representation; two approaches to price reduction are presented and one shall be implemented at the discretion of the Commission.

PRICE BENCHMARKING	
Wholesale Benchmarking	
Key Findings	**Insights and Recommendations**
• **Installation costs for international leased lines remained constant for the assessed bandwidth offerings, with the monthly (usage) rates also constant between 2017 and 2018, increasing in 2019 by 52% for**	**Price Transformation Recommendations** • It is recommended that installation costs be reviewed downward and that a flat flee be charged across all bandwidth speeds. It is envisioned that this will significantly lower

the 10 Mbps and by 35% for STM-1 and STM-4 bandwidth offerings.

- **Installation fees for national copper leased lines increased by between 56% and 172% between 2016 (when they were offered at commercial rates) and 2017 (upon the introduction of a wholesale national leased line offering). Between 2017 and 2019, national leased line installation fees remained largely constant for each bandwidth offering as EPTC moved towards technology-neutral pricing from 2018.**
- **Monthly usage fees for copper-based national leased lines decreased by 74%, 80% and 40% in 2017, 2018 and 2019, respectively. Following the introduction of technology-neutral national leased line pricing in 2018, fibre-based customers' usage fees increased, to align with copper-based national leased line pricing.**
- **2019 bundle offerings (monthly national leased line and monthly internet fee bundles) were discounted by between 10% and 18%. Volume discounts of between 17% and 40% were introduced in 2019 for customers with multiple connectivity needs.**
- **Commercial installation costs for national leased lines, shared and dedicated internet remained the same during the assessment period**
- **Commercial monthly usage fees decreased by up to 86% (leased lines) and 62% (internet). In 2018 further discounts were also introduced for NGOs and Learning Institutions.**
- **Wholesale pricing in Eswatini is significantly higher than that of Botswana, despite both countries being landlocked with similar pricing constraints. For example, BOFINET's current leased line (and internet included) fee are between**

prices, due to the area coverage of the country.

- It is recommended that a glide path reduction of 60% be implemented over a three-year period , as there is evidently a need for cost reduction.
- Since the retail and wholesale markets are vertically integrated it is recommended that a glide path reduction be implemented in the wholesale market. The effectiveness of the reductions within the wholesale market will inform the retail price ceiling and floor to be prescribed to the retail market.

Regulatory Recommendations:

- Private sector investment in network infrastructure is recommended and or privatization of the government's stake in EPTC.
- It is recommended that the regulatory tools available in section 28 of the ECA be used to impose accounting separation license conditions and regulatory measures on licensees with vertically integrated operations. This is to promote and ensure more transparency in pricing and cost oriented pricing of wholesale and retail broadband services.
- It is recommended that competition be introduced in the wholesale market (e.g. Licensing of Eswatini Electricity Company (EEC) network infrastructure). This could introduce efficiencies and competition that could contribute towards reducing wholesale costs further, thereby driving the retail prices lower.
- In promoting fair competition and eliminating all forms of discriminatory pricing in the broadband market, a review of EPTC's pricing for last mile fixed internet broadband (ADSL) connectivity services to ISPs is recommended. It is recommended that this service to ISPs be priced or charged

854% and 2 286% lower than EPTC's for similar bandwidths. • **The installations fees for Lesotho are significantly lower, and more consistent. This could be owing to the technology used or that there is limited scope for competitive installation prices with a limited market.** • **Unlike BoFinet EPTC does not have wholesale prices for last mile internet connectivity (e.g. ADSL). ISPs are currently charged at retail price. This contributes to high costs of providing Fixed Broadband services for ISPs that that rely on EPCT's fixed wired network to provide fixed broadband services making these ISPs that offer ADSL (i.e. Posix, Real Image) uncompetitive in the market against ISPs that use fixed wireless technology (i.e. Jenny Internet, Touch IT, VSAT for last mile connectivity. This has seen the market for ADSL declining significantly as consumers opt for competitively priced fixed wireless broadband services. Most the ISPs experienced a decline or stagnation in subscriptions and eventually market share and revenue.**	at wholesale rate and not at the current commercial rate.
Retail Benchmarking	
Key Findings	**Insights and Recommendations**
• **The Wholesale and Retail markets are vertically integrated markets, meaning changes in the wholesale market have a trickle impact on the retail market. Any changes in the wholesale market will have an impact on the retail market, the market relation is to be considered in all retain market regulatory interventions.** • **Data prices decreased in the Kingdom between 2017 and 2019, improving the pricing for citizens and moving the country closer to achieving its universal service and access goals**	• The Price Transformation Programme ran from 2017 till 2019, and this study focuses on that period in particular. However, as we know that vertically integrated markets, as wholesale and retail are, take some time to show trickle down effects and changes in the lower market (retail) may go on sometime after the end of the actionable period. This has been the case with Eswatini as well, as we see that the 2020 pricing has dropped significantly from the 2019 pricing, placing Eswatini well below regional peers in terms of data costs. The pricing submitted for 2020 shows that Eswatini's 1GB data basket at USD 6,06 is significantly lower than

• **In short case study analysis, we see that the prices for the 1GB data basket continued to decrease in the year following the end of the Price Transformation Programme. This is evident of the trickle down and delayed impact that the vertically integrated wholesale and retail markets. Furthermore, this decrease in prices has placed Eswatini lower than its regional peers in terms of the cost of a monthly 1GB prepaid bundle.** • **Eswatini's voice/SMS prices decreased between 2017 and 2019. Eswatini's voice/SMS basket was comparable to that of its peers at USD 5,81.**	Botswana, Namibia, and Lesotho at USD 8,25, USD 9,79, and USD 6,12 respectively. • The Voice/SMS backset for Eswatini came in as the sixth lowest pricing in a comparison of 10 countries, lower than its regional peers Botswana and Namibia. This shows that this market product has adjusted to the developments and changes in the market and has become a lot more affordable for the average end user. • The Universal Access and Service Strategy has a primary mandate and pillar to increase affordability to all citizens; the Commission together with the UAS Strategy can implement e-Rate pricing for schools, health centers, institutions of higher education and training centers, Tinkhundla Centres, Libraries, and Police Stations. • Retail prices should be determined by market forces. However, in the case of Dominant player it would be regulatory sound for the Commission to impose a price ceiling and a price floor in order to ensure that the market remains effectively and efficiently competitive. This Price Celling and Floor is to be determined by the Commission the at appropriate time.

Figure 47: Eswatini Wholesale National Leased Line Pricing - 60% Glide Path

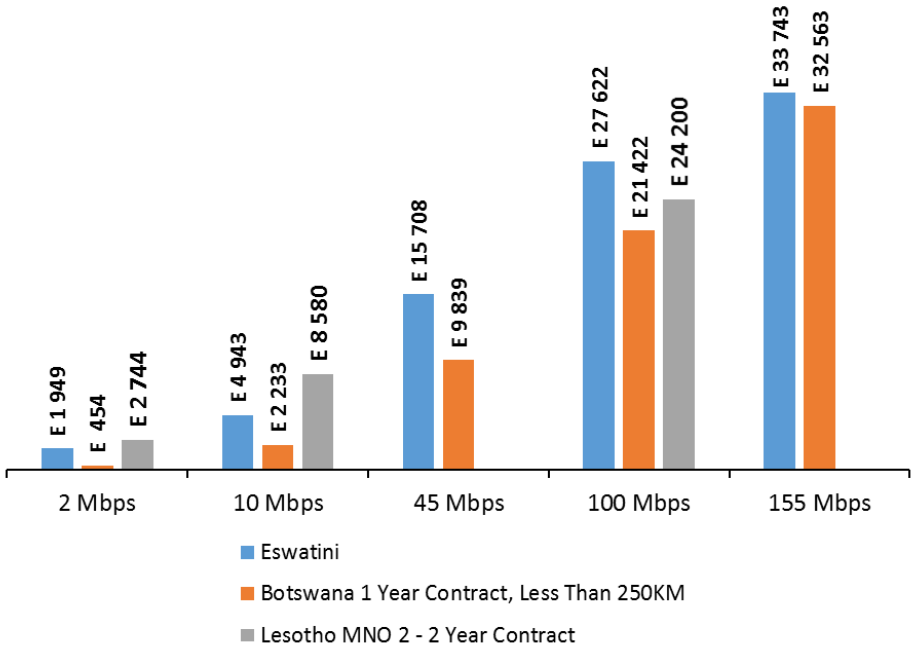
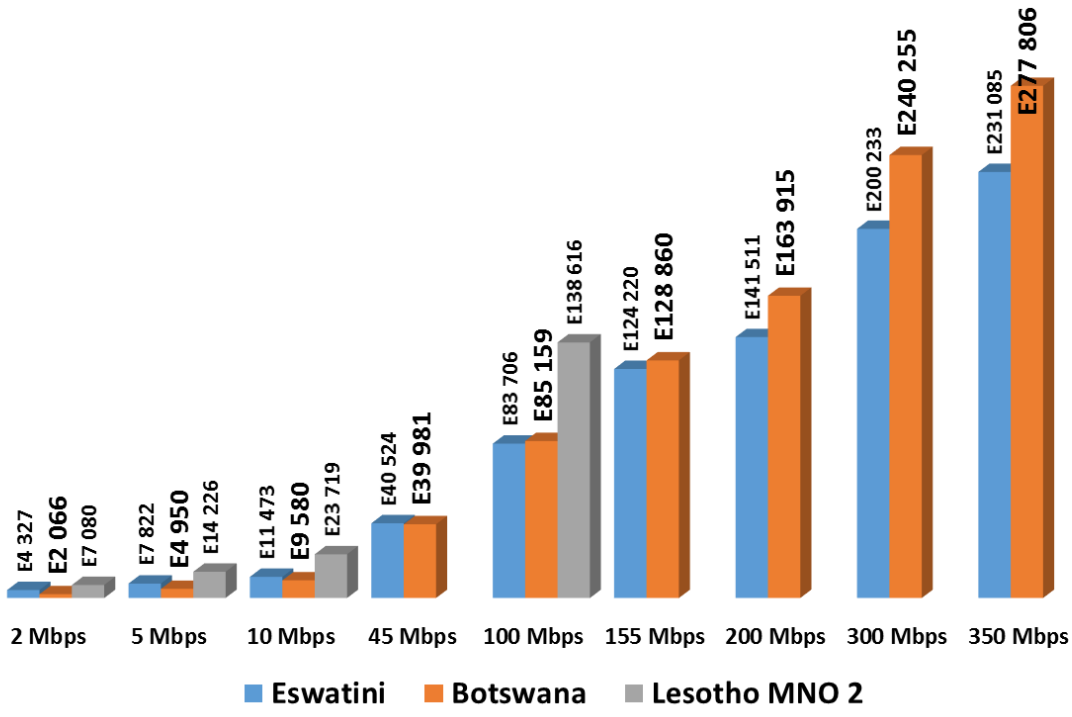


Figure 48: Eswatini Wholesale Dedicated Internet Pricing – 60% Glide Path



Overall, this Report recommends that Eswatini should continue to put in place measures to reduce prices in the wholesale market; it is recommended that the Commission look at negotiating a single flat installation fees applicable across the board regardless of speed and secondly that a glide path or 50% reduction be implemented. The Commission is encouraged to create a more enabling regulatory and policy framework to encourage a competitive and transparent wholesale and retail pricing environment. This can be achieved through the adoption of regulatory prescripts for accounting separation. In the retail market is it recommended that the Commission establish a price ceiling and floor for both the voice/sms basket and the 1GB prepaid basket as this would protect the market against cannibalizing itself and ensure sustainability of pricing. Lastly, it is recommended that the Commission implement an e-Rate that would allow for further subsidies for key national institutions such as healthcare facilities, schools, higher education and training centres, government offices, and ports of entry.