



Consultation on “Review of Mobile Termination Rate”

The purpose of this consultation paper is to review the Mobile Termination Rates in Pakistan as per provisions in the Act, Telecom Policy, Rules and Interconnection Guidelines. Replies to the questions in this paper shall reach at the following address within 15 days (i.e. by **16th July, 2021**) of the publication of this paper.

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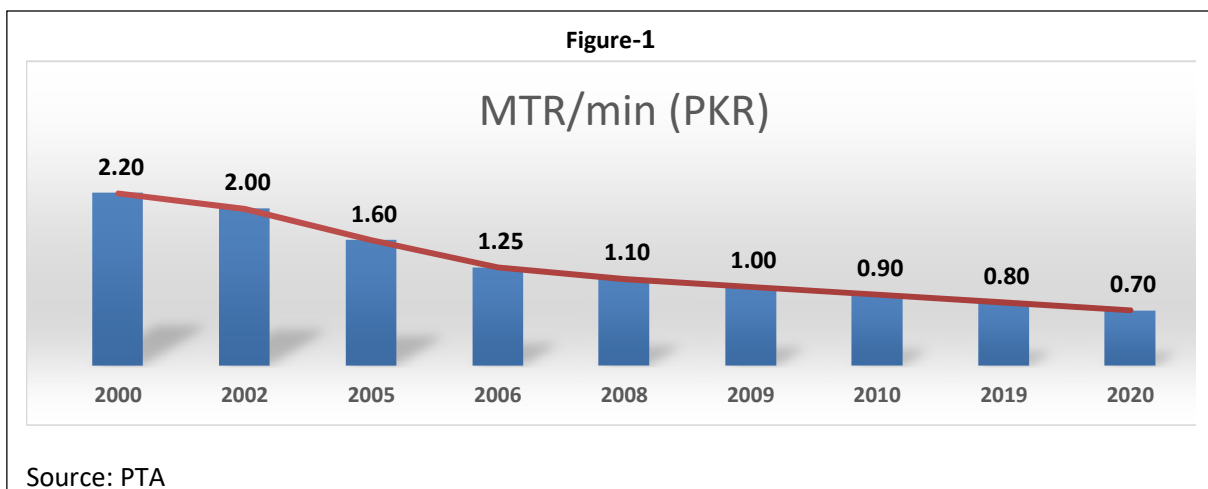
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1. Introduction

International Telecommunication Union (ITU) has defined termination rate as the “price charged by an operator for forwarding calls from other network customers to their own customers”. Similarly, Mobile Termination Rate (MTR) is the “price that a Cellular Mobile Operator (CMO) charges to another mobile operator for terminating its off-net calls on its network”. Generally, the end users are not aware of wholesale termination charges which are settled among the operators. Higher termination charges expect to favour larger players as compared to smaller operators; hence, role of regulator is important to provide a level playing field by rationalizing the termination rates in the telecom sector. Further, effective implementation of interconnection promotes competition in telecom sector.

2. Background

PTA determined MTR of Rs. 2.20 per minute w.e.f. 1st December 2000 after the implementation Calling Party Pays (CPP) regime and continued to reduce the same from time to time (Figure -1). The rate was revised downwards to Rs. 2.00 per minute in 2002 on the basis of international benchmarking for a period of two years. In July 2005, PTA determined fixed-to-mobile and mobile-to-mobile interconnection charges on the basis of Fully Allocated Cost (FAC) and international benchmarking. Resultantly, a glide path was given to the industry wherein MTR was reduced to Rs. 1.60 per minute from August



2005 to June 2006 and Rs. 1.25 per minute from June 2006 to June 2007. In 2006, PTA engaged services of renowned consultancy firm Ovum Plc. for determination of interconnection charges on the basis of Bottom-up Long Run Incremental Cost (LRIC) and Top Down Fully Allocated Cost (FAC). Based on the study results, PTA vide its Determination dated 14th May 2008, reduced MTR to Rs. 1.10 per minute from June 2008 to December 2008, Rs. 1.00 per minute from January 2009 to December 2009 and Rs. 0.90 per minute from January 2010. In September 2017, PTA floated a consultation paper on MTR review and requested CMOs for their comments and resultantly, PTA vide its Determination dated 16th November 2018, reduced MTR to Rs. 0.80 per minute from January 2019 to December 2019 and Rs. 0.70 per minute from January 2020 onwards.

3. Rationale & Objective

Pakistan's cellular mobile sector has undergone substantial changes in the past decade. The introduction of 3G, 4G LTE i.e. 'mobile broadband' is undoubtedly the foremost landmark. Cellular tele-density has reached 84.02% as of January 2021 and ARPU is around Rs. 214 per connection in FY 2020. Cellular mobile subscribers now stand at 183 million as of February 2021. More importantly, telecom revenues have jumped to Rs. 424 billion in FY 2020. There have also been significant regulatory and market developments. Mobilink and Warid have merged into a single entity thereby reducing the number of cellular operators to four. Consumer tariff structures have also changed drastically. Over the years, the differential in the on-net and off-net call rates has increased and operators are offering an increasing number of on-net offers including free on-net calls. MTR plays a critical role in driving the retail tariffs especially for off-net calls.

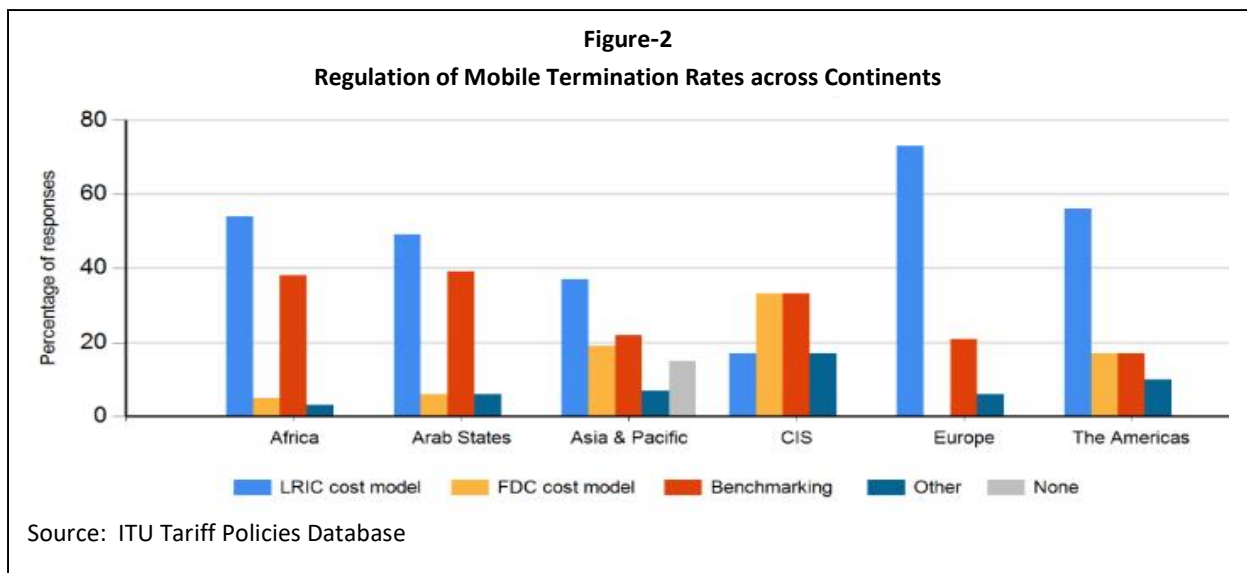
In view of the changing market structure of the cellular mobile segment, the last change in MTR was decided in 2018 based on international benchmarking. Adopting a glide path approach, **a further review of MTR is required as current MTR @ Rs. 0.70/min in Pakistan is still higher than the int'l benchmarking results in 2018 i.e. MTR @ Rs. 0.30 to Rs. 0.43 per minute as per PPP adjustment and Rs. 0.18 to Rs. 0.19 per minute as per ARPU adjustment. MTR in Pakistan is also higher compared to MTRs in regional**

countries. It has been noted that countries are continuously decreasing mobile termination rates. Further, PTA has also received requests from telecom operators to review the existing mobile termination rate.

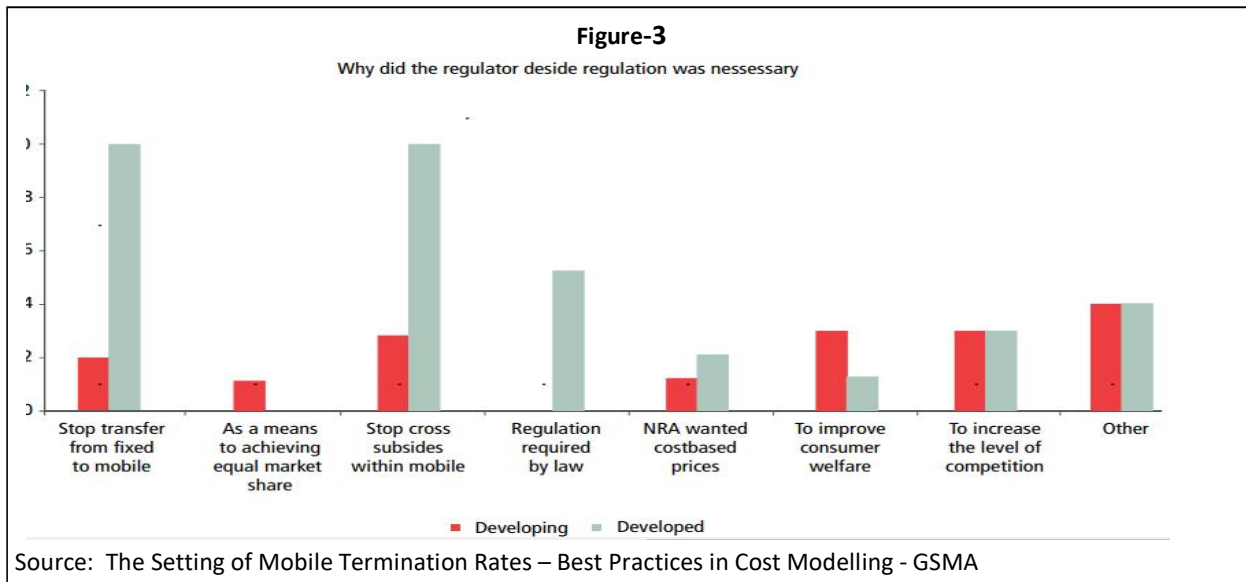
Clause 5.1.12 of the Telecommunication Policy states that the cost-based interconnection charges will be reviewed not less than once every two years. In the case of Pakistan, data on cost-based interconnection charges is not readily available. Accordingly, this consultation paper provides benchmarking analysis for the determination of MTR in Pakistan in line with clause 18.6 of the Interconnection Guidelines which allows PTA to establish interconnection charges on the basis of benchmarking when adequate cost information is not readily available.

4. International Best Practices on Determination of MTR

ITU advocates that interconnection charges should be regulated because of its natural monopoly characteristics as an operator has complete control on its own network. Majority of regulators are regulating mobile termination rates across all continents by using different methodologies, i.e. LRIC, Benchmarking, etc. (see Figure 2).

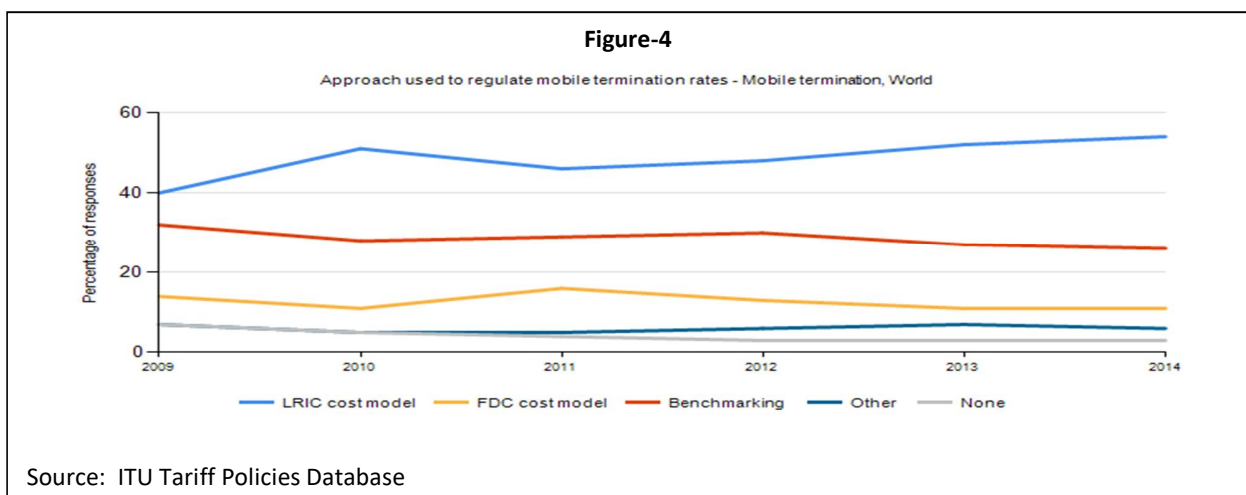


As per GSMA (see Figure-3), the regulators in developing countries considered it necessary to regulate MTR to increase the level of competition, improve consumer welfare, stop cross-subsidies, the need for cost-based practices and a means of achieving equal market share.



4.1 Methodologies

Regulatory authorities carry out review of mobile termination rates depending on their market situations and international best practices. There are a number of approaches adopted for determination of MTR but the selection of a particular methodology is the sole prerogative of telecom regulators depending on economic / telecom development of



their country and prevailing regulatory framework. Figure-4 shows the ITU's comparison of the approaches used by regulatory authorities to regulate MTRs around the globe. It clearly depicts that most commonly used approaches to determine MTR are Cost Model and Benchmarking; the same are discussed in detail below.

4.1.1 Cost Model

The suitability of cost-based pricing methods in interconnection to improve and sustain efficiency and competition in the telecom markets is well justified. A key difference between cost models is how prices are calculated using cost data, for example, a top-down approach takes the existing cost structure of a group of services, and allocates the costs incurred in producing each product (using accounting records). On the other hand, a bottom-up approach does not use actual accounting data, but rather a model to estimate the costs of producing each product using the most efficient means of doing so with current and estimated future technology. However, many important issues arise in the way costs are used to price interconnection. For example, how are costs measured and to what extent is common costs (or overhead) allocated? Due to complexity in modeling and allocation of costs, and involving a long process of data gathering and cost estimations; many countries have relied on alternate methods of determining MTR.

4.1.2 International Benchmarking

International Benchmarking is another commonly used method to determine MTR by regulators. Benchmarking provides a convenient and cost-effective way to determine MTRs in a mobile market. As highlighted above, ITU has suggested that benchmarking is the second most adopted approach around the globe to determine the MTR. Recently, in 2020, the Australian Competition and Consumers Commission (ACCC) has considered that international benchmarking is a more pragmatic approach to use in the interim while the ACCC further explores the possibility of cost modelling when 5G deployment is more advanced in Australia.

4.2 Continuous Reduction in MTR – an international best practice

It has been noted that countries are continuously reducing their MTRs over time considering reduction in cost related to interconnection and to ensure a level playing field and competition in mobile markets. Comparing the countries (included in the analysis for MTR Determination 2018), it is evident that the MTRs are declining in majority of these countries since the last MTR review in Pakistan. Table-1 below shows a few examples.

Table 1: Reduction in MTR/Min Rates

| Country | Earlier MTR | Existing MTR |
|----------------|---------------------------------|---------------------------------|
| Australia | AUD 0.017 (August 2015) | AUD 0.012 (October 2020) |
| Norway | NOK 0.043 (January 2019) | NOK 0.032 (January 2020) |
| Portugal | Eurocent 0.85 (August 2015) | Eurocent 0.36 (July 2019) |
| South Africa | R 0.12 (October 2018) | R 0.09 (October 2020) |
| Saudi Arabia | SAR 0.15 (February 2015) | SAR 0.022 (2017) |
| United Kingdom | GBP 0.495 (April 2017) | GBP 0.468 (April 2020) |
| India | Rs. 0.14 (January 2017) | Re. 0 (January 2021) |
| Bangladesh | Taka 0.18 (June 2017) | Taka 0.14 (August 2018) |
| Brazil | Reals 0.23 (2018) | Reals 0.018 (2020) |
| Germany | Euro 0.011 (2018) | Euro 0.009 (July 2020) |
| Italy | Euro 0.0098 (2018) | Euro 0.0076 (July 2020) |
| Malaysia | Ringgit 0.036 (2018) | Ringgit 0.01 (2020) |
| Mexico | Peso 0.07 (2018) | Peso 0.05 (2020) |
| Spain | Euro 0.007 (2018) | Euro 0.0064 (July 2020) |
| Tanzania | Shilling 5.20 (January 2020) | Shilling 2.60 (January 2021) |
| Pakistan | Rs. 0.80 (January 2019) | Rs. 0.70 (January 2020) |

5. Review of MTR in Pakistan

5.1 Methodology Selection

First time, PTA determined MTR using LRIC approach in 2008 in accordance with the relevant provisions in the Policy, Rules and Guidelines, whereas it chose Benchmarking Methodology in 2018. . Cost based model is an appropriate method for determining MTR, however, it is cumbersome to get cost based stats in Pakistan. Therefore, choosing an alternative approach i.e. international benchmarking is also justified in the current scenario for Pakistan where cost-based data is unavailable.

There are a number of countries that have adopted benchmarking methodology for determining termination rates. For example, Body of European Regulators for Electronic Communications (BEREC), in Dec 2020, has reported that seven European countries use benchmarking model for determination of their MTRs, namely Albania, Estonia, Iceland, Lithuania, Romania, Serbia and Kosovo.¹ Further, as per the ITU, benchmarks may be more appropriate in developing markets where the informational requirements of cost based approaches are too onerous for operators and regulators.²

Interconnection Guidelines, 2004 empowers PTA to determine termination rates on international benchmarking in the absence of cost-based estimates. Therefore, PTA proposes to determine MTR based on international benchmarking.

5.2 Benchmarking Analysis

In order to determine MTR for Pakistan through benchmarking, a bigger sample of 26 countries has been selected for this study considering a wide-spread selection from Asia-pacific and Europe and also a smaller sample of 8 countries, used previously in the consultation paper of 2017. Using standard benchmarking practice, MTRs of sample countries in their local currencies were converted to US cents, using PPP (purchasing

¹ Termination rates at European Level - BEREC

² ITU Arab Regional Workshop for Arab LDCs on Interconnection Regulation in IP based environment, Sudan, ,2015

power parity) adjustments applied to 60% of each country's MTR to allow for the differences in the relative cost of living between benchmark countries (see Table A2 in Annex A) ³. This proportion was based on a standard assumption used when benchmarking, that broadly 60% of the annualized costs of telecommunications operators are represented by labor costs and thereby reflective of local rates of pay and the cost of living.

For the sample of 26 countries, average benchmark MTRs have been calculated using mean and median of PPP adjusted MTRs and compared with the PPP adjusted MTR of Pakistan. Resultantly, proposed MTRs for Pakistan are calculated as Rs. 0.30 and Rs. 0.28 by mean and median benchmark respectively. Average Revenue per User (ARPU) in cellular mobile markets of the sample countries are between USD 1.37 to USD 30.96. For alternate benchmarking, the Authority has considered ARPUs of sample countries relative to Pakistan's ARPU. Using this benchmarking method, proposed MTR for Pakistan is between Rs. 0.24 (mean) and Rs. 0.12 (median). Therefore, current MTR in Pakistan @ Rs. 0.70 per minute is still on a much higher side compared to the above proposed MTR based on international benchmarking.

Table 2: Benchmark MTR for Pakistan – Sample of 26 Countries

| Proposed Pakistan MTR (in PKR) | | | | |
|--------------------------------|-------------------|------------------|-------------------|------------------|
| | PPP adjusted | | APRU adjusted | |
| | Average MTR / min | Median MTR / min | Average MTR / min | Median MTR / min |
| 2021 Consultation | 0.30 | 0.28 | 0.24 | 0.12 |
| 2018 Determination | 0.48 | 0.42 | 0.38 | 0.19 |

³ Ovum study in 2008 for PTA on the interconnection charges in Pakistan has also applied PPP adjustment to 60% of MTR price.

Keeping in view the sample of 8 countries (see Table A3 in Annex A) used in the consultation paper from 2017, following are the updated results. **Table 3: Benchmark MTR for Pakistan – Sample of 8 Countries**

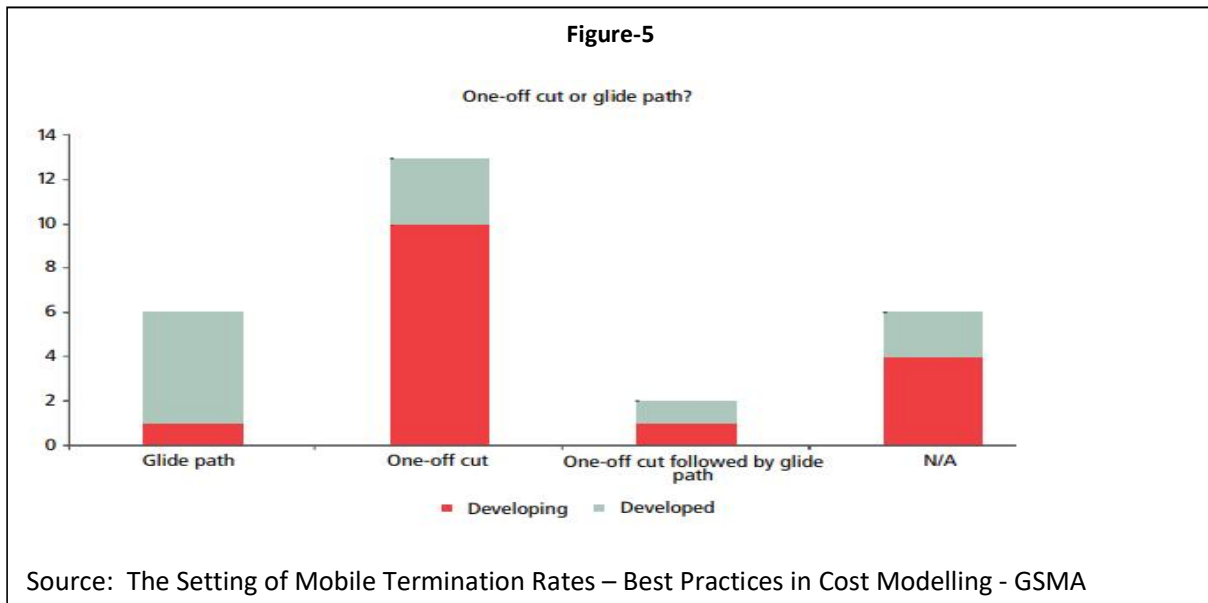
| Proposed Pakistan MTR (in PKR) | | | | |
|--------------------------------|---------------------|--------------------|---------------------|--------------------|
| | PPP adjusted | | APRU adjusted | |
| | Average MTR/ min | Median MTR/ min | Average MTR/ min | Median MTR/ min |
| 2021 Consultation | 0.32 | 0.28 | 0.16 | 0.15 |
| 2018 Determination | 0.43 | 0.30 | 0.179 | 0.190 |

Average benchmark MTRs have been calculated using mean and median of PPP adjusted MTRs and compared with the PPP adjusted MTR of Pakistan. Resultantly, MTRs for Pakistan are calculated as Rs. 0.32 and Rs. 0.28 by mean and median benchmark respectively. ARPU in cellular mobile markets of the sample countries are between USD 1.37 to USD 24.12. For alternate benchmarking, we have used ARPUs of sample countries relative to Pakistan's ARPU. Using benchmarking adjusted for ARPUs, proposed MTR for Pakistan is Rs. 0.16 (mean) and Rs. 0.15 (median). As evident from Table A3 of Annex A, countries have further reduced their MTR since 2018, resulting the decline of proposed Pakistan MTR in Table 2 based on the current benchmarking compared to that of 2018 determination i.e. proposed MTR for Pakistan based on PPP adjustment is between Rs. 0.28 - Rs. 0.32 compared to Rs. 0.30 to Rs. 0.43.

Considering MTR in USD of regional countries, Pakistan's MTR @ US cents 0.45 per minute is much higher than those of Bangladesh, India, Malaysia and Sri Lanka that turn out to be US cents 0.16, 0, 0.24 and 0.28 respectively.

There has been a long-term drive to push down interconnect rates to reduce end-user tariffs. In markets with lower or zero MTRs, it has been observed that mobile network usage increases accordingly, with mobile companies in such markets free to introduce service packages including features like unlimited calling.

As per GSMA study, as depicted in the figure-5 below, in the developing countries the most common outcome of MTR revision is the one-off cut instead of the glide path.



It is evident that reduction in MTR can fetch the following benefits:

- It is expected to reduce the variable cost of each operator allowing the benefit to be passed onto the customers in form of reduced tariffs.
- It is expected to help operators to offer better off-net call rates, reduce the current differentials of on-net and off-net rates, resultantly enhance competition and promote product innovation.
- It is expected to protect interests of smaller operators and prospective market entrants.
- It is helpful in achieving GOP initiative of Digital Pakistan by enabling operators to provide affordable ICT services for accelerated digitization ecosystem.

5.3 Cost Based Study of Operators in Pakistan

In order to review the Mobile Termination Rates, PTA requested CMOs to provide evidence of the cost of interconnection termination rates in line with clause 9.1.5 of the NGMS license and clause 5.5 of the Interconnection Guidelines, 2004. In this regard, PTA

received response from Ufone on MTR calculation using the Fully Allocated Cost (FAC) model. The study was conducted by Aetha Consulting and Mazars and the results revealed that MTR was calculated to be approximately PKR 0.20 per minute for 2019 (PKR 0.22 per minute for 2018), which is very close to the proposed MTR based on ARPU adjustments. This again reinforces the argument that current MTR @ Rs. 0.70 is much higher compared to the cost based results of a smaller operator. It may be noted that it is expected that the larger operators have even lower cost of MTR compared to Ufone. Therefore, an immediate downward review of MTR in Pakistan is required.

6. Issues for Consultation

The international benchmarking analysis undertaken in this paper shows that MTR calculated for Pakistan is between Rs. 0.28 to Rs. 0.30 as per PPP adjustment and between Rs. 0.12 to Rs. 0.24 as per ARPU adjustments. This shows that current MTR of Rs. 0.70/min in Pakistan is still much higher than the calculated MTR using benchmarking. Therefore, it is proposed that MTR in Pakistan may be determined @ Rs. 0.30 per minute w.e.f. 01st October 2021.

Annexure - A**Table A1: Summary of Countries included in Benchmarking (2020-21)**

| Country | Population (millions) | Inflation, average consumer price (%) | Subscribers (millions) | Mobile Penetration (%) | ARPU (\$) |
|----------------|-----------------------|---------------------------------------|------------------------|------------------------|-----------|
| Austria | 8.95 | 1.80 | 10.73 | 119.80 | 17.6200 |
| Australia | 25.88 | 1.30 | 27.88 | 99.50 | 24.1200 |
| Bangladesh | 170.06 | 5.90 | 165.57 | 101.50 | 1.5900 |
| Brazil | 212.78 | 2.90 | 207.04 | 78.50 | 4.5000 |
| Croatia | 4.01 | 0.80 | 4.40 | 106.60 | 12.3500 |
| Denmark | 5.82 | 0.90 | 7.24 | 125.50 | 18.6000 |
| France | 65.17 | 0.60 | 72.04 | 110.60 | 22.9700 |
| Germany | 83.10 | 1.10 | 107.20 | 128.40 | 13.3100 |
| Greece | 10.67 | 0.70 | 11.88 | 113.40 | 12.1700 |
| India | 1400 | 3.70 | 1,151.48 | 84.30 | 1.7700 |
| Italy | 60.23 | 0.60 | 80.58 | 133.10 | 13.9700 |
| Malaysia | 33.42 | 2.40 | 44.60 | 96.70 | 11.1000 |
| Malta | 0.51 | 1.10 | 0.63 | 144.10 | 16.2100 |
| Mexico | 130.26 | 3.30 | 121.37 | 95.10 | 6.4700 |
| Norway | 5.42 | 3.30 | 5.72 | 78.50 | 30.9600 |
| Philippines | 110.59 | 3.00 | 167.32 | 94.00 | 2.3400 |
| Portugal | 10.24 | 1.10 | 11.91 | 116.50 | 12.3800 |
| Spain | 46.54 | 0.80 | 55.27 | 118.30 | 18.4800 |
| Sri Lanka | 22.07 | 4.60 | 24.43 | 78.50 | 1.8600 |
| Sweden | 10.61 | 1.40 | 12.68 | 126.30 | 22.2400 |
| Thailand | 69.95 | 1.80 | 129.61 | 98.00 | 7.6800 |
| Tanzania | 59.73 | 3.70 | 47.69 | 82.20 | 2.0400 |
| Turkey | 85.18 | 11.90 | 80.79 | 96.80 | 5.2500 |
| Ukraine | 41.37 | 6.00 | 54.82 | 130.60 | 2.3600 |
| United Kingdom | 67.61 | 1.20 | 78.92 | 82.90 | 18.8500 |
| Pakistan | 220 | 8.80 | 180.00 | 84.02 | 1.3700 |

Table A2: Benchmarking Analysis – Sample of 26 Countries (2020-21)

| Country | MTR/min in local currency | MTR/min (PPP adjusted in US cents) | MTR/min US cents | MTR/min US cents (adjusted w.r.t. Pak ARPU) | ARPU (\$) | PPP Conversion Rate |
|----------------|---------------------------------|---|---------------------|---|--------------|---------------------------|
| Austria | 0.0080 | 0.6664 | 0.0690 | 0.0054 | 17.6200 | 0.7560 |
| Australia | 0.0119 | 0.8535 | 0.9070 | 0.5005 | 24.1200 | 1.4550 |
| Bangladesh | 0.1400 | 0.3149 | 0.1653 | 0.1424 | 1.5900 | 33.7680 |
| Brazil | 0.0180 | 0.5928 | 0.3186 | 0.0970 | 4.5000 | 2.3210 |
| Croatia | 0.0449 | 1.1035 | 0.6988 | 0.0775 | 12.3500 | 3.2720 |
| Denmark | 0.0384 | 0.5951 | 0.6083 | 0.0448 | 18.6000 | 6.5470 |
| France | 0.0074 | 0.9474 | 0.8706 | 0.0519 | 22.9700 | 0.7410 |
| Germany | 0.0090 | 1.1533 | 1.0588 | 0.1090 | 13.3100 | 0.7400 |
| Greece | 0.0062 | 0.9851 | 0.7318 | 0.0824 | 12.1700 | 0.5390 |
| India | 0 | 0 | 0 | 0 | 1.7700 | 22.1080 |
| Italy | 0.0076 | 1.0475 | 0.8941 | 0.0877 | 13.9700 | 0.6610 |
| Malaysia | 0.0100 | 0.4786 | 0.2410 | 0.2642 | 11.1000 | 1.5700 |
| Malta | 0.0040 | 0.6139 | 0.4759 | 0.0402 | 16.2100 | 0.5730 |
| Mexico | 0.0542 | 0.4500 | 0.2630 | 0.0557 | 6.4700 | 9.4370 |
| Norway | 0.0320 | 0.3405 | 0.3717 | 0.0164 | 30.9600 | 10.0070 |
| Philippines | 0.0140 | 0.0541 | 0.0288 | 0.0169 | 2.3400 | 19.7400 |
| Portugal | 0.0040 | 0.6130 | 0.4706 | 0.0521 | 12.3800 | 0.5650 |
| Spain | 0.0064 | 0.9338 | 0.7529 | 0.0558 | 18.4800 | 0.6070 |
| Sri Lanka | 0.50 | 0.6619 | 0.2513 | 0.1851 | 1.8600 | 53.4350 |
| Sweden | 0.0207 | 0.2372 | 0.2395 | 0.0148 | 22.2400 | 8.7790 |
| Thailand | 0.2700 | 1.6734 | 0.8637 | 1.3687 | 7.6800 | 12.2000 |
| Tanzania | 2.6000 | 0.2155 | 0.1121 | 0.0753 | 2.0400 | 914.2910 |
| Turkey | 0.0333 | 1.1894 | 0.4153 | 0.1084 | 5.2500 | 1.9530 |
| Ukraine | 0.1200 | 1.1234 | 0.4295 | 0.2493 | 2.3600 | 7.5660 |
| United Kingdom | 0.0047 | 0.6718 | 0.6411 | 0.0466 | 18.8500 | 0.6760 |
| Pakistan | 0.7000 | 1.1932 | 0.4527 | 0.4527 | 1.3700 | 41.4960 |

Table A3: Benchmarking Analysis – Sample of 8 Countries (2020-21)

| Country | MTR/min in local currency 2018 | MTR/min in local currency 2021 | MTR/min (PPP adjusted in US cents) | MTR/min US cents | MTR/min US cents (adjusted w.r.t. Pak ARPUs) | ARPU (\$) | PPP Conversion Rate |
|----------------|---|---|--|---------------------|--|--------------|---------------------------|
| Bangladesh | 0.18 | 0.14 | 0.3149 | 0.1653 | 0.1424 | 1.5900 | 33.7680 |
| India | 0.14 | 0 | 0 | 0 | 0 | 1.7700 | 22.1080 |
| Sri Lanka | 0.50 | 0.50 | 0.6619 | 0.2513 | 0.1851 | 1.8600 | 53.4350 |
| Thailand | 0.27 | 0.27 | 1.6734 | 0.8637 | 0.1541 | 7.6800 | 12.2000 |
| Australia | 0.017 | 0.012 | 0.8535 | 0.9070 | 0.0515 | 24.1200 | 1.4550 |
| Malaysia | 0.0365 | 0.0100 | 0.4786 | 0.2410 | 0.0297 | 11.1000 | 1.5700 |
| United Kingdom | 0.005 | 0.0047 | 0.6718 | 0.6411 | 0.0466 | 18.8500 | 0.6760 |
| Pakistan | 0.90 | 0.70 | 1.1932 | 0.4527 | 0.4527 | 1.3700 | 41.4960 |

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