



# Strengthening Competition Policy Implementation in Pakistan

## **MARKET AND REGULATORY ASSESSMENT OF MOBILE TELECOMMUNICATIONS IN PAKISTAN**

July 2019

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## Table of Contents

<i>I. Market Characteristics</i> .....	5
A. The performance of the mobile telecoms sector in Pakistan does not yet reflect the country's potential.....	5
<i>II. Key Regulatory Restrictions to Competition in the Mobile Telecom Sector in Pakistan</i>	21
A. Key Regulators in Pakistan .....	21
B. Strengthening the Framework to Encourage Entry, Expansion and a Level Playing Field Between Services-Based Competitors.....	29
C. Strengthening the Framework to Encourage entry, Expansion and a Level Playing Field Between Facilities-Based Competitors.....	32
D. Mobile spectrum allocation and assignment have been slow and unable to match the evolution of technology, even when there is availability of spectrum .....	36
E. Cross-cutting Bottlenecks in Pakistan's Mobile Telecom Value Chain that Hinder Service- and Facilities-Based Competition.....	40
<i>III. Entry Points for Reform of the Mobile Telecommunications Sector</i> .....	49
Annex I: The MCPAT Framework .....	51

## I. MARKET CHARACTERISTICS

1. **Drawing on the World Bank Group’s Markets and Competition Policy Assessment Toolkit (MCPAT), this Report aims to respond to the country’s reform needs in the mobile telecommunications sector and to identify actionable pro-competition solutions to enhance the results of ongoing Government initiatives in this sector** (see Annex I for a description of the MCPAT framework). In particular, this Report reviews the mobile telecommunications market characteristics and regulatory framework and its effectiveness in promoting functioning markets that deliver competitive outcomes and a more efficient resource allocation in Pakistan. It discusses key bottlenecks that hinder services- and facilities-based competition in the mobile telecommunications markets, and possible avenues for reform. It further identifies and proposes least restrictive alternatives to those rules which stifle competition in the economy.

A. The performance of the mobile telecoms sector in Pakistan does not yet reflect the country’s potential

2. **Pakistan’s Telecommunications Policy from 2015 (“Telecommunications Policy”) put forward a policy vision where quality telecommunications services are affordable and universally available and provided through open, competitive markets.**<sup>1</sup> The importance of the digital economy for the country was more recently reaffirmed in the Digital Pakistan Policy from 2017 (“Digital Policy”) with sets the key goal of creating a digital ecosystem where infrastructure and institutional frameworks enable the rapid delivery of innovative digital services, applications and content. This policy should represent a shift towards a holistic Information and Communications Technologies (“ICT”) strategy that can act as a broad enabler of every sector of socio-economic development.<sup>2</sup>
3. **Pro-competitive interventions are paramount to achieve Pakistan’s goals for the mobile telecommunications sector.** They can help Pakistan in playing a bigger role in the digital economy: deploying ICT throughout the country, bridging the urban/rural divide and benefiting consumers through lower tariffs and improved quality of service.
4. **Pakistan could benefit from its market and become a regional leader in mobile communications.** Mobile telecommunications contribution to GDP was on average 1.6% during 2006-2017.<sup>3</sup> In the last quarter of 2017, Pakistan’s mobile market ranked 8<sup>th</sup> worldwide as per the number of subscriptions<sup>4</sup> (see Figure 1), with China and India Russia, Brazil, and Japan being ahead of Pakistan.

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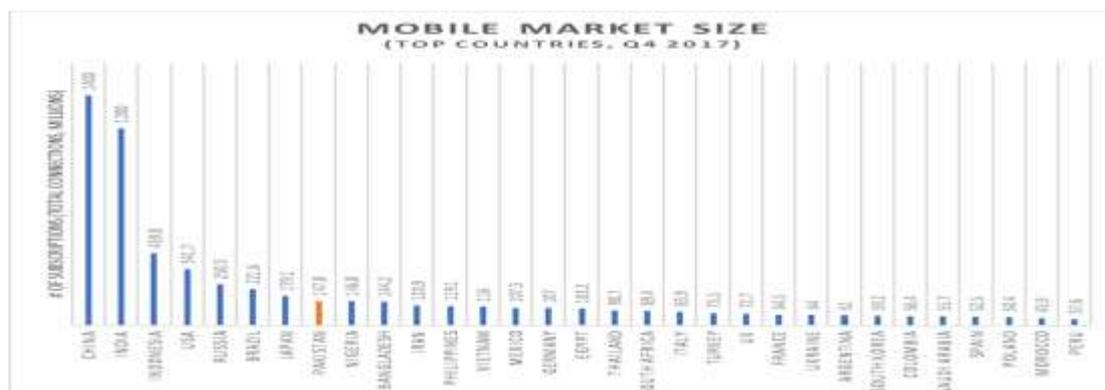
<sup>1</sup> Ministry of Information Technology (MoIT), Government of Pakistan, Telecommunications Policy, 2015.

<sup>2</sup> MoIT, Digital Pakistan Policy 2017, p. 6.

<sup>3</sup> World Bank World Development Indicators; revenue data are from the Pakistan Telecommunication Authority (PTA) located under "Telecom Indicators" in the following link <https://www.pta.gov.pk/en/telecom-indicators/5>.

<sup>4</sup> As users may have more than one sim card, the number of subscriptions can overcome the country population number.

Figure 1: International comparison of mobile market sizes (top countries, Q4, 2017)



Source: GSM, The World Bank. Own elaboration

5. **Pakistan is reported to have some of the lowest mobile call charges in the world and the affordability of services.**<sup>5</sup> In particular, Pakistan ranks 10<sup>th</sup> out of 139 countries on average per minute cost of different types of mobile cellular calls (PPP USD) in the World Economic Forum’s Network Readiness Index (2016).<sup>6</sup>
6. **Nevertheless, and despite the size of its market, Pakistan still ranks relatively lower than comparator countries in terms of market density and mobile broadband access.** Considering countries that have large populations,<sup>7</sup> such as those with over 30 million inhabitants, the percentage of people in the country that has mobile access (i.e., mobile market density) is quite low. Pakistan has a similar ranking on mobile internet density (broadband access) (Figure 2)<sup>8</sup>. From a list of over 30 countries, data corresponding to unique SIM cards<sup>9</sup>, adoption of smartphone, mobile broadband, pre-paid contracts, percentage of subscriptions to 2G markets and to 3G & 4G markets (number of subscriptions or lines) are compared (Figure 3). The information is from the last quarter of 2017 and it is further segmented by GDP per capita in 4 categories from the range of less than US\$1000 to less than US\$4000. On pre-paid contracts, it is usually the case that an intensive use of mobile services goes along with less pre-paid contracts. For Pakistan, 2G market density is relatively high whilst in 3G & 4G market density is relatively low; this is independently of country market size (Figure 4) or comparable GDP per capita.

<sup>5</sup> Telecommunications Policy, 2015, p. 4.

<sup>6</sup> <http://reports.weforum.org/global-information-technology-report-2016/networked-readiness-index/>

<sup>7</sup> Countries listed based on GDP per capita include: Ethiopia, Uganda, Rwanda, Tanzania, Zimbabwe, Tajikistan, Bangladesh, Kyrgyzstan, Cambodia, Senegal, Kenya, Pakistan, Mauritania, Lesotho, Myanmar, Cameroon, Côte d’Ivoire, Zambia, Laos, Ghana, Vietnam, India, Sudan, Nicaragua, Uzbekistan, Nigeria, Egypt, Philippines, Ukraine, Morocco, Indonesia

<sup>8</sup> The list of countries for both indicators is the same. Given the relatively large country population of Pakistan, the list comprises countries with populations of more than 30 million.

<sup>9</sup> Subscribers are only counted as one ID, even if they have several SIM cards.



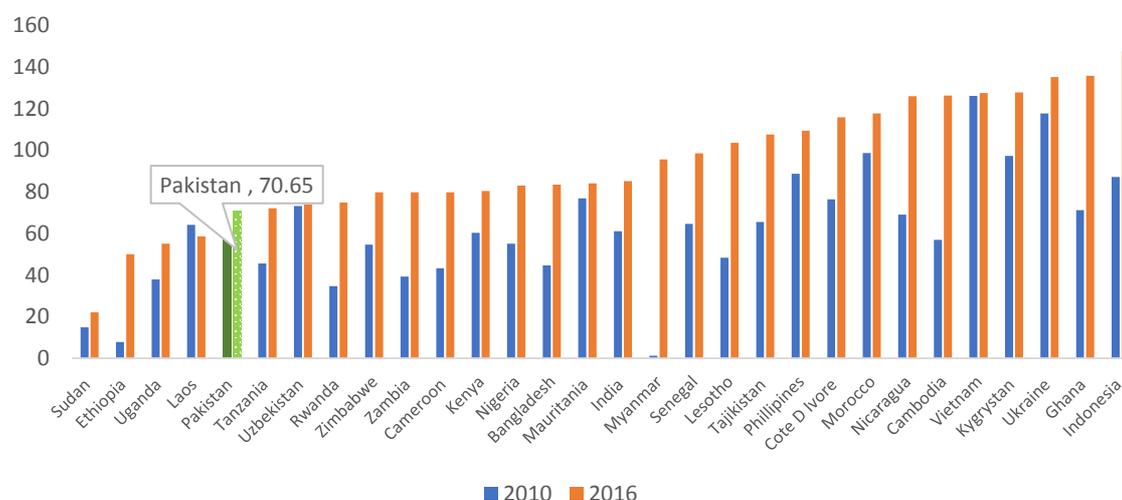
7. **Whilst Pakistan has registered a slow decline in the penetration of fixed ICT services, mobile penetration had increased from around 12 subscriptions per 100 inhabitants to nearly 76 subscriptions in a 10-year period** (Table 1). However, in the past years, there has been a slow decrease in mobile teledensity, indicating 150 million subscribers (June 2018), which represents a teledensity of 72.81%.<sup>10</sup> In a comparison of mobile subscriptions per 100 inhabitants between Pakistan and comparator countries, Pakistan still occupies a relatively low ranking, only ahead of Sudan, Ethiopia, Uganda and Laos (Figure 5).

**Table 1: Mobile and fix penetration (subscriptions per 100 inhabitants)**

Service	2004-2005	February 2015
<b>Mobile</b>	8.30	73.23
<b>Fixed [Local Loop (LL)+Wireless Local Loop (WLL)]</b>	3.60	3.42
<b>Total (Mobile + Fixed)</b>	11.89	76.65
<b>Fixed broadband</b>	-	6.69
<b>Mobile broadband</b>	-	5.54

Source: Telecommunications Policy, 2015

**Figure 5: Mobile Subscriptions per 100 Inhabitants, Pakistan and Comparators**



Source: International Telecommunication Union (ITU) Statistics, 2017

8. **Notwithstanding the impressive growth in terms of access to 3G and 4G, there is still room for improving mobile broadband penetration.**<sup>11</sup> 56 million out of the 150 million cellular subscribers already have access to 3G and 4G services, compared to 2.72 million at the end of FY2012-13. However, only 3 out of 4 market players are offering 4G LTE services, and access to mobile broadband is still patchy overall across Pakistan.

<sup>10</sup> Pakistan Telecommunications Authority: <https://www.pta.gov.pk/en/telecom-indicators>

<sup>11</sup> PTA: <https://www.pta.gov.pk/en/telecom-indicators>

i) Boosting competition in Pakistan's mobile telecoms sector is key

9. **Opening mobile, wireless, and international calling markets to more competition can have an important impact on growth and competitiveness.** For a given level of total mobile penetration, a 10 percent substitution from 2G to 3G penetration increases GDP per capita growth by 0.15 percentage points. Whereas, a 10 percent increase in mobile penetration in developing countries has been shown to lead to an increase in the total factor productivity by 4.2 percentage points, in the long run (Deloitte 2012).<sup>12</sup> Meanwhile, opening up international calling services to competition was found to reduce prices by 90 percent and increase call volumes by anywhere from 32 to 104 percent (GSMA 2012).
10. **Furthermore, boosting competition is key to increase mobile networks' capitalization, with benefits for both firms and users.** Mobile networks consist of economic assets, with its direct value coming from network users. Its capitalization of mobile networks can be measured by users' allocation of time to mobile services. Data from Pakistan throughout 2000-2017 shows that mobile networks capitalization has been limited by several market and regulatory barriers, including: delay in the adoption of 3G+ technologies, high concentration of spectrum, high market concentration, low profit margins, high access and operational costs, amongst other constraints.
11. **In order to increase the value of the mobile network in Pakistan it is key to enhance competition (i.e., the level of firm rivalry) in the market and remove existing regulatory constraints.** Spectrum auctioning for 3G+ technologies alone was not sufficient to fully increase the capitalization of mobile networks in Pakistan. In fact, according to the World Bank team estimations, 3G auctions in Pakistan led to an increase in the value of the mobile networks of about 80%; a value that is still far below the potential increase in the value of capitalization of over 150%.
12. **The ways in which competition generates wealth, by affecting the value of the mobile network, can be described as "network capitalization".** A higher capitalization of the mobile network requires technology adoption, intense competition, and more private investments in modern infrastructure. The capitalization of the network will be higher the more subscribers use the network and the more support there is for the mobile telecom network to support investments and competition of other business platforms that use the mobile network. The capitalization of the mobile network will increase if subscribers use the network more intensively. Using the network more intensively is associated 3G and 4G technology adoption, more usage of services with mobile applications, and higher usage of the mobile broadband. Hence, competition intensity is critical for a continuous improving of the network's value.
13. **Greater competition is also essential to broaden the possibilities for the expansion of disruptive technologies<sup>13</sup> in Pakistan.** Competition in 3G+ mobile

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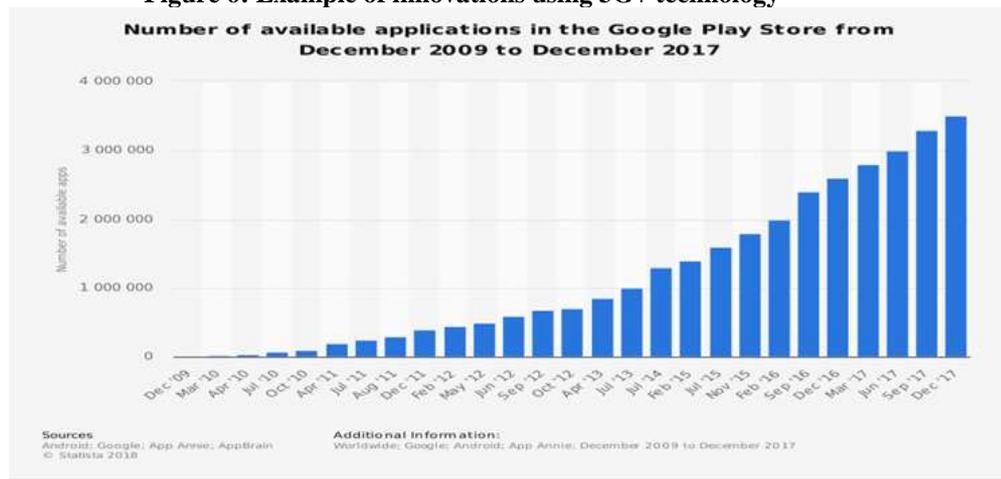
<sup>12</sup> "What is the impact of mobile telephony on economic growth? A report for GSMA", 2012.

<https://www.gsma.com/publicpolicy/wp-content/uploads/2012/11/gsma-deloitte-impact-mobile-telephony-economic-growth.pdf>

<sup>13</sup> A disruptive technology is one that displaces an established technology and shakes up the industry or a ground-breaking product that creates a completely new industry. Personal computer (PC) displaced the typewriter, Email displacing letter-writing and disrupting the postal and greeting card industries, etc.

telecommunications services enables network users and business to develop a large variety of new products and services downstream at an affordable quality and continuously. Industries and businesses operating with the support of the mobile telecom network can develop their products and services better when 3G+ technologies are offered by mobile operators. For those firms, 3G+ networks are an essential input for their business operations. A lack of well-functioning markets can thus hinder the incentives and ability for the market players to roll out improved technologies and become more productive. Businesses are where opportunities are, and vice-versa. Figure 6 shows the millions of applications (‘apps’) available at Google store, which are mainly usable with 3G+ market services.

**Figure 6: Example of innovations using 3G+ technology**



Source: Statista

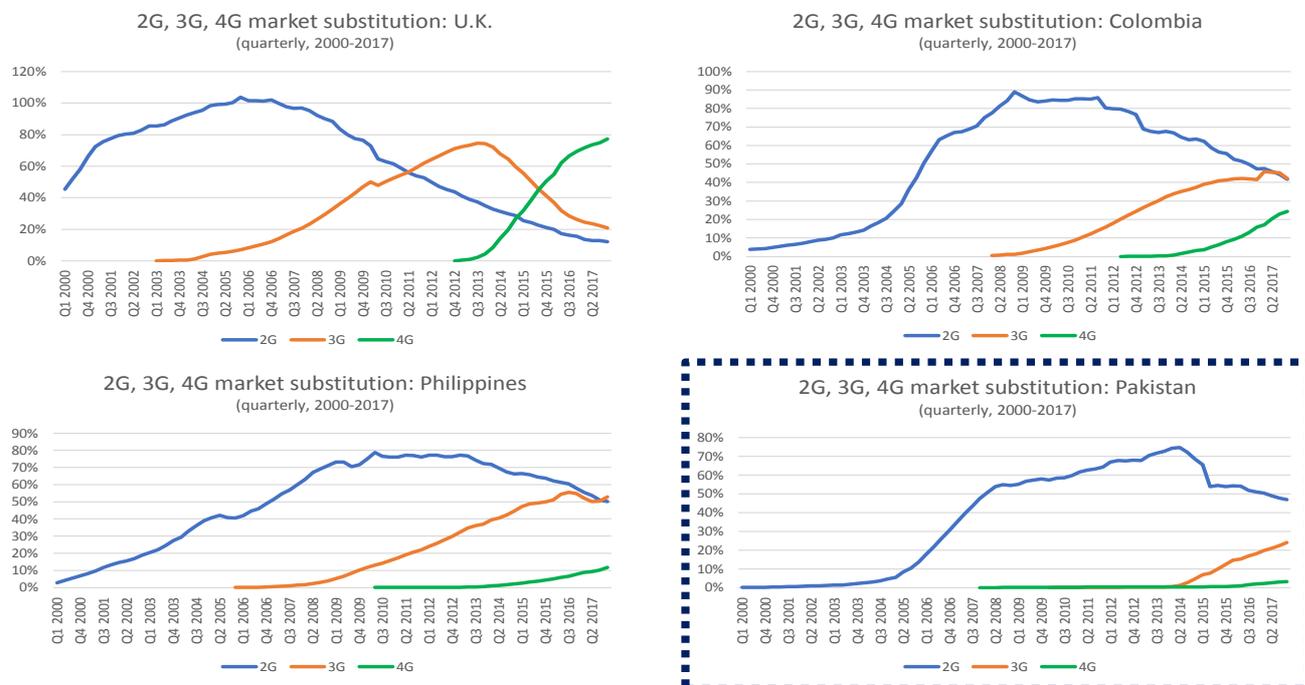
14. **Mobile market evolution in Pakistan has been rather slow, lagging from 6 to 10 years in relation to the adoption of new technologies and market services in comparator countries.** Pakistan has remained much longer in the 2G market while most other countries started to substitute the 2G market for the 3G and 4G markets. Most countries started the substitution of 2G between 2004-2007, while Pakistan started in 2014 (Figure 7). References to auction spectrum frequencies in 2007 for 3G markets can be found since 2004 in Pakistan Telecommunication Authority’s (“PTA”) documents<sup>14</sup>. A comparison is made for countries at different stages of development i.e. United Kingdom is a developed country, Colombia falls well below the developed country threshold but ranks much higher than the most of its peers in the developing world. Philippines is very much a developing country, and it has a long way to reach developed status. Whereas, Pakistan is relatively more under developed. The adoption of new market technologies follows the typical logistic curve (i.e., S-like shape curve)<sup>15</sup>. Pakistan’s S-like curve for 3G and 4G is rather incomplete and still at the beginning of the adoption period. Even in the most advanced economies, there can still be some population in 2G markets. In the UK is close to 10%. There is a clear substitution of technologies between 2G and 3G markets. In early adopters, like UK,

<sup>14</sup> Spectrum Auction and the Case Study from Pakistan, PTA, Syed Ismail Shah, 2015.

<sup>15</sup> This means that at the beginning period of adoption, it takes a relatively long time for a given percentage of consumers to adopt the technology. But then, there is an inflection point. Where the given percentage of consumers adopting the technology happens in shorter and shorter and even shorter periods of time. Until again, the adoption rate gets a bit slower with time, to an almost plateau stage, where the marginal consumers adopting the technology do it at a very slow pace.

the substitution is also clear between 3G and 4G markets. In other countries there can be parallel growth between 3G and 4G. In all countries 2G markets are clearly substituted by 3G and, when available, 4G markets (Figure 7).

**Figure 7: Mobile technology evolution in the UK, Colombia, Philippines and Pakistan**

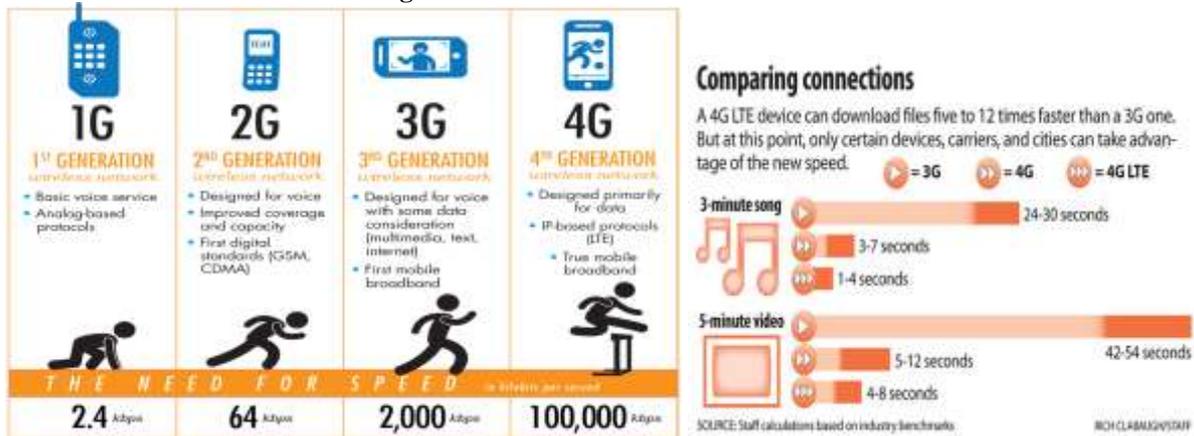


Source: GSM, own elaboration

15. **The prevalence of 2G, 3G and 4G technologies indicates the low adoption of innovation in Pakistan mobile markets.**<sup>16</sup> The fact that Pakistan is lagging behind in the adoption of technologies, 3G and 4G also seems to also have an effect on the user adoption of smartphones (see Figure 9 below for an international comparison of smartphone adoption). The market for services enabled by 2G, 3G, 4G technologies are rather different (Figure 8 and Box 1). More technology advanced countries are already moving towards 5G markets. There are demand substitution effects between xG market services. Consumers do not tend to use xG mobile services as complements, rather they use them as substitutes. However, as not all consumers change at the same time, there is an overlapping of markets as some consumers adopt new xG technologies faster than others.

<sup>16</sup> If the availability of information would be at hand, we would also consider regional information to examine the differences that might exist across the economy and, also, if available, across different services provided by mobile operators.

Figure 8: xG markets for mobile services



Source: <https://gurubox.org/2017/02/07/what-are-the-differences-between-mobile-technology-1g-2g-3g-4g-and-5g/>, <http://krisaru.com/4g-lte-and-how-is-it-different-from-3g/>

**Box 1: The evolution of mobile markets technology**

The evolution of mobile markets can be generally described as xG. There has been a technology deployment of 1G, 2G, 3G, 4G technologies, with 5G upcoming. In this technological path old technologies tend to be replaced by new technologies. The main differences between xG market services reside on the technology that they use in order to make the mobility, data transmission, and the convergence or complementarity of networks as efficient as possible.

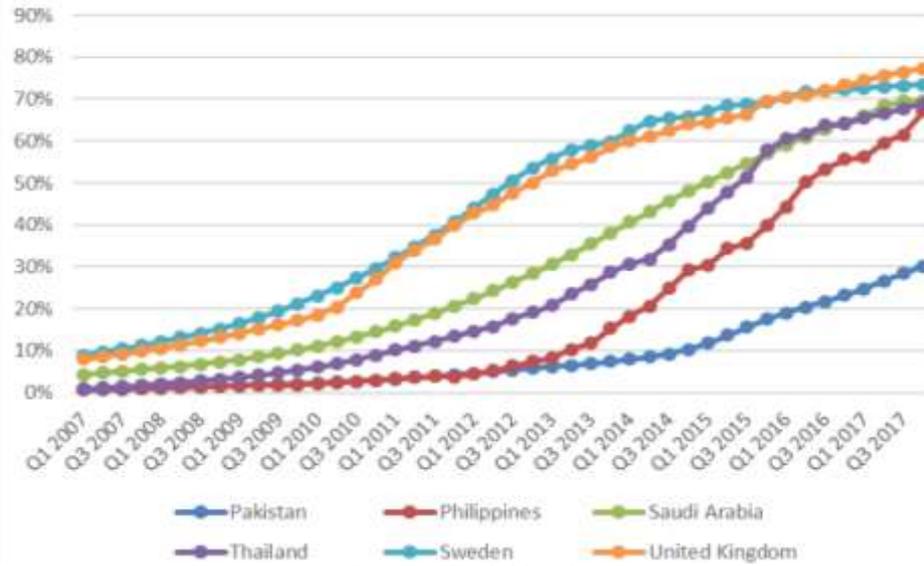
xG mobile services improve in terms of reduction of barriers to mobility, the speed and quality of data transmission, and the convergence of telecom technologies. xG technologies can make better use of certain frequencies in the spectrum, which will also depend on the particular technology that operating firms are using.

The current generation of mobile software applications, is in most countries between 3G and 4G, with several countries already abandoning 3G towards 4G, and with some companies in a few countries already advertising 5G services.

Overall, the uses of the spectrum to switch (i.e., “read” or “decode”) and transmit signals in xG and the associated technologies in use by the mobile service providers define the mobile market services under supply. As several xG are in use over the wider network, tools and instruments to switch and transmit signals have to be compatible with the technology in use by operators and users. Changes in xG market services imply new capital expenses (capex) for firms, as they need to update switches, transmission devices and deploy networks. At the user-end, consumers will also need to have the proper equipment to make use or take full advantage of the mobile services provided by mobile operators.

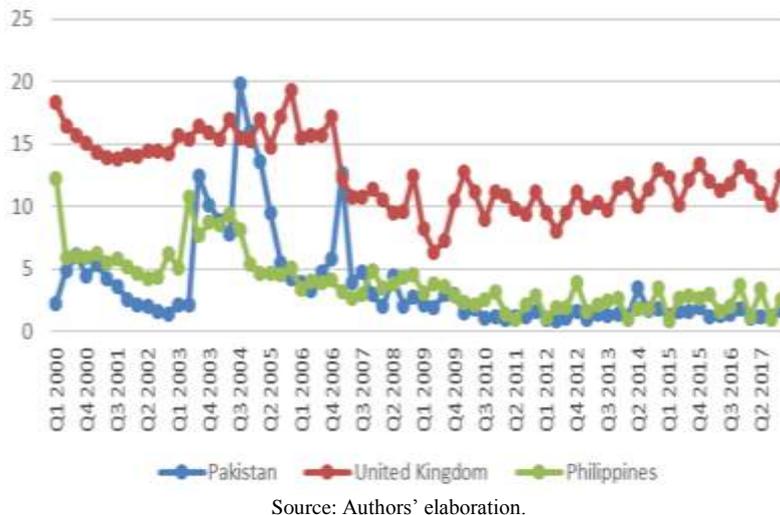
Source: Authors’ elaboration

**Figure 9: Rate of smartphone adoption (international comparison)**



16. Average capital expenses (CAPEX) by mobile firms per mobile user also tends to be low in Pakistan, which tends to indicate a lower adoption of technology (Figure 10). When markets develop new technologies, there is likely to be new investments in infrastructure for the modernization of the network. Investments will also be made to attend the need of different kinds of clients, from corporate to individual users.

**Figure 10: CAPEX – Capital Expenditure per user (USD)**



- ii) There are indications that market dynamics in the mobile telecommunications sector in Pakistan has been slowing down

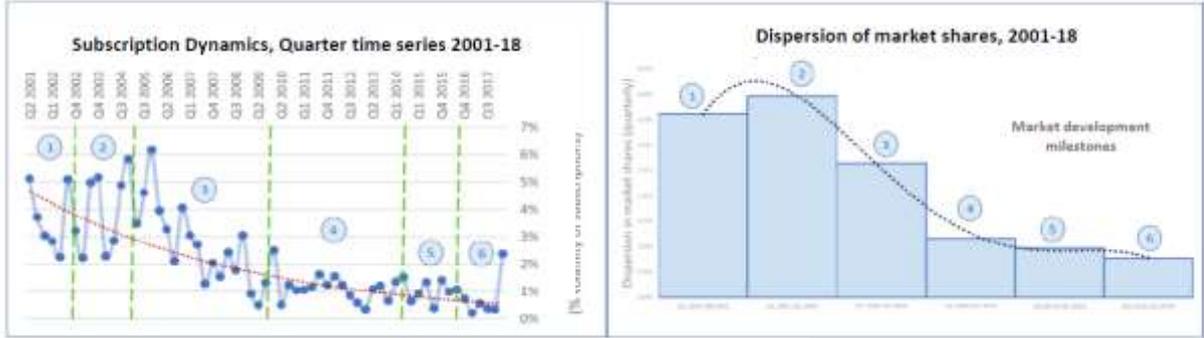
**17. The mobile market of Pakistan seemed to have been less dynamic.** Market dynamics can be proxied by the net winning/acquisition of clients by firms over a period of time. Measured in terms of the flow of mobile subscriptions (number of clients), market dynamics can capture the users' choice to join a firm network (new subscriptions), the users' choice to remain in their previous firm's network, or, the users' choice to be a subscriber in another firm network. Figure 11 shows the subscription dynamics in the mobile telecommunications sector in Pakistan that can be seen as a proxy for market dynamics.<sup>17</sup> A measurement exercise of "market dynamics" in Pakistan assumes a panel of mobile firms (3 to 6 firms) for eighteen years (quarterly, from 2000 to 2017), for six main milestones of market development described in

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<sup>17</sup> These market outcomes reflect the situation in the mobile services in 2G markets.

18. Table 2 below. By construction, “market dynamics” can be expressed as:  $\varphi_{\kappa(n,m-1)} \in (0,1)$ .<sup>18</sup> This implies two scenarios. The first one, in which winning firm(s) that have almost no subscriptions acquire more subscriptions and hence market shares; in this case, one assumes intense competition and a value closer to 1. At the opposite end, almost no variations from winning firm(s) would indicate that competition is almost inexistent, with a value closer to 0.

**Figure 11: Market dynamics in the mobile telecom sector in Pakistan**



Source: PTA, GSM. Authors' elaboration

<sup>18</sup> “Market dynamics”,  $\varphi_{\kappa(n,m-1)}$ , is measured as follows:

$$\forall_j j = \{1, \dots, n\}, \forall_t t = \{1, \dots, m\}$$

$$\forall_k \kappa(n, m - 1) = \{1, \dots, K\}$$

$$\varphi_{\kappa(n,m-1)} = \left( \sum_{t=1}^{m-1} \left[ \sum_{j=1}^n \sum_{i=1}^2 (x_{jit} - \bar{x}_{jit,jit+1}) \right] / (n(m-1) \left| \kappa(n, m - 1) \right| \right)$$

where,  $x$ , represents the market share;  $\kappa$ , represents the regulatory-market periods;  $j$ , represents the number of firms, and  $t$  the time periods for a given regulatory-market period.

**Table 2: Market development milestones – Mobile services**

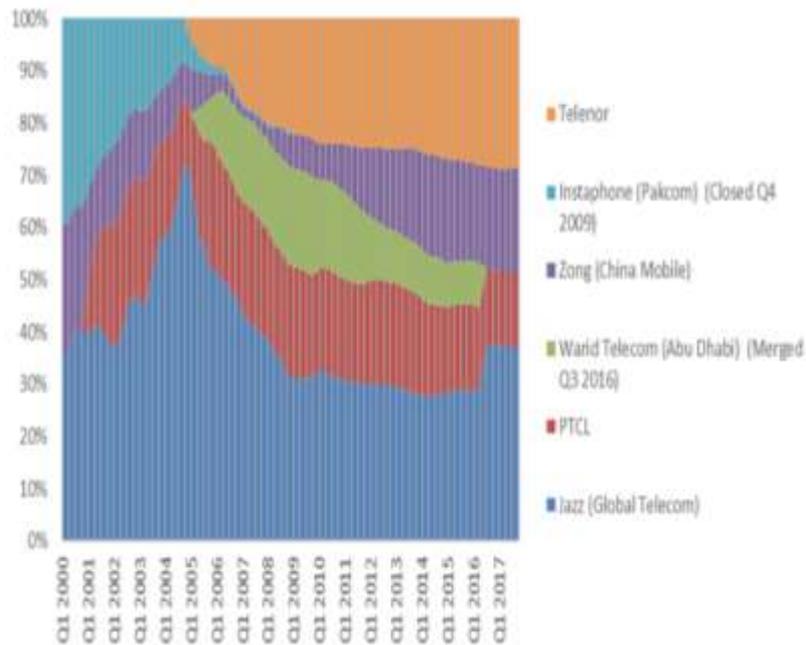
Period (quarters, 2000-2018)		Market development milestones (quarters, 2000-2018)
1	Q1.2000-Q4.2002	○ New switching and transmission rights through spectrum allocation, award of new MHz frequencies in 2G market, entry of 1 new firm to 2G market
2	Q1.2003-Q1.2005	○ New switching and transmission rights through spectrum allocation, award of new MHz frequencies in 2G market, entry of 1 new firm to 2G market
3	Q2.2005-Q3.2009	○ New switching and transmission rights through spectrum allocation, auction new MHz frequencies in 2G market, entry of 2 new firms to 2G market
4	Q4.2009-Q2.2014	○ Licensed revoked, exit of a firm in 2G market. Beginning of a period of fixed interconnection rates for mobile service termination. Number of competing firms decreased.
5	Q3.2014-Q2.2016	○ New switching and transmission rights through spectrum allocation, auction for new MHz frequencies in 3G and 4G markets. 4 out of 5 firms participate in auctions, MHz frequency were allocated among 4 firms. Opening of 3G and 4G markets (before equivalent services only in WLL-wireless local loop). Keep the continuity of interconnection rates freeze.
6	Q3.2016-Q1.2018 (onwards)	○ New switching and transmission rights through spectrum allocation, auction for new MHz frequencies in 3G and 4G markets, 2 firms awarded MHz frequencies to operate in 3G and 4G markets. Merger approved that involved an incumbent firm. Number of competing firms decreased, 4 firms offer mobile services in the xG market. Public consultation for ending period of frozen interconnection rates were initiated. <sup>19</sup> .
7	Development of Generations	1G - 1990 - Paktel and Instaphone 2G <ul style="list-style-type: none"> <li>• 1992 - Mobilink</li> <li>• 2001 - Ufone</li> <li>• 2004 - Telenor &amp; Warid</li> </ul> 2.5 G - 2004-2005 - Mobilink, Ufone, Telenor & Warid 3 G - 2014 - Ufone, Mobilink, Telenor, Zong 4 G <ul style="list-style-type: none"> <li>• 2014 - Zong, Warid (LTE )</li> <li>• 2016 - Telenor</li> <li>• 2017 - Jazz</li> </ul>

Source: CCP, PTA, GSM. , companies websites, Own elaboration

19. **There are currently four mobile network operators in Pakistan: Jazz, Telenor, Zong and Ufone.** Jazz, which resulted from the merger between Mobilink and Warid Zong has consistently maintained market shares in the mobile segment of around 40% (based on the number of subscriptions), despite Telenor’s increasing customer base since entering the market in 2006 (see Figure 12 and Figure 13 for the evolution of market shares and the number of firms in Pakistan’s mobile telecoms market).

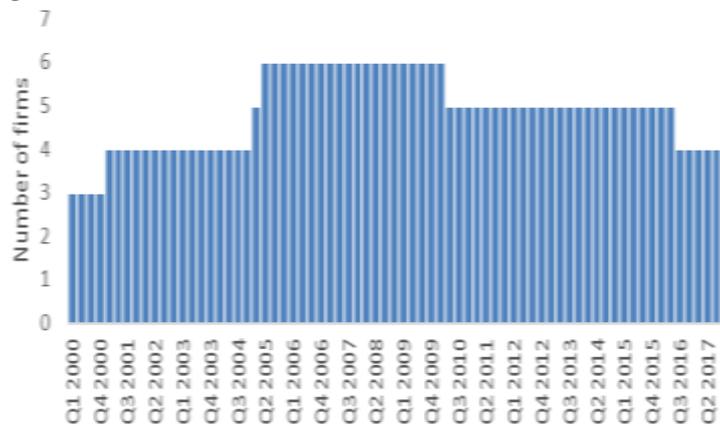
<sup>19</sup> Consultation on “Review of Mobile Termination Rate”. Available at: [https://www.pta.gov.pk/media/mtr\\_cons\\_paper\\_290917.pdf](https://www.pta.gov.pk/media/mtr_cons_paper_290917.pdf)

**Figure 12: Evolution of market shares in the Pakistan mobile telecoms market (quarterly 2000-2017)**



Source: Authors' elaboration

**Figure 13: Number of firms in Pakistan's mobile telecoms market**



Source: Authors' elaboration

20. **The Herfindahl-Hirschman Index (HHI) indicates that the mobile market has been concentrated.**<sup>20</sup> Market concentration is only an indicator of market structure and does not fully illustrate competition dynamics or market power. Figure 14 and Figure 15 show market shares and HHI based upon the number of existing subscriptions. The level of concentration is greater if market shares are measured according to minutes (see Figure 16 and Figure 17 below).

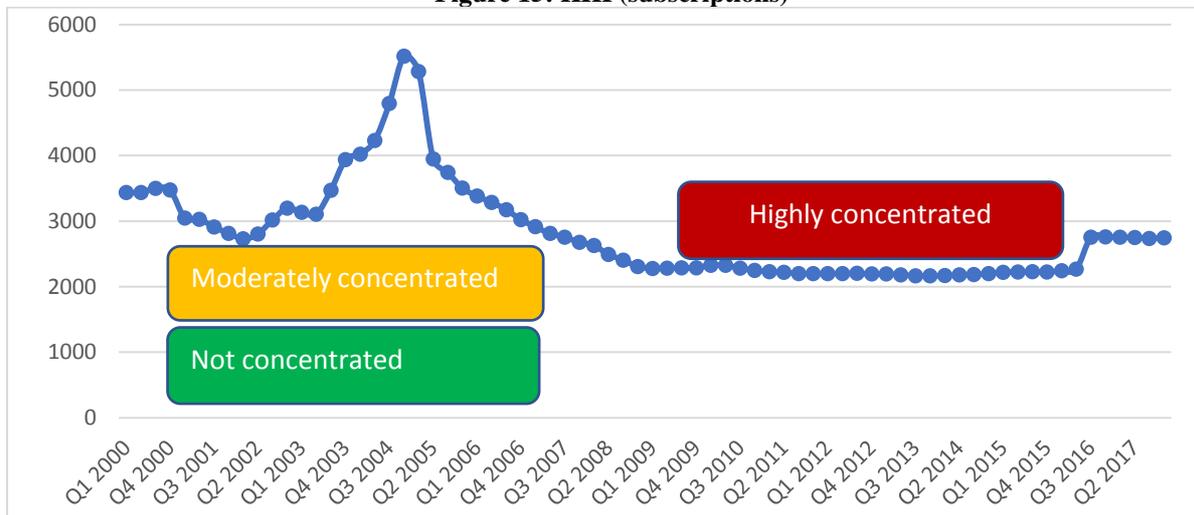
<sup>20</sup> Overall, a commonly accepted guideline is to consider markets between with HHI between 1,500 and 2,500 (as per HHI) to be moderately concentrated, and highly concentrated above 2,500. See U.S. Department of Justice & FTC, Horizontal Merger Guidelines § 5.2 (2010).

**Figure 14: Market Shares (subscriptions)**



Source: Authors' elaboration

**Figure 15: HHI (subscriptions)**



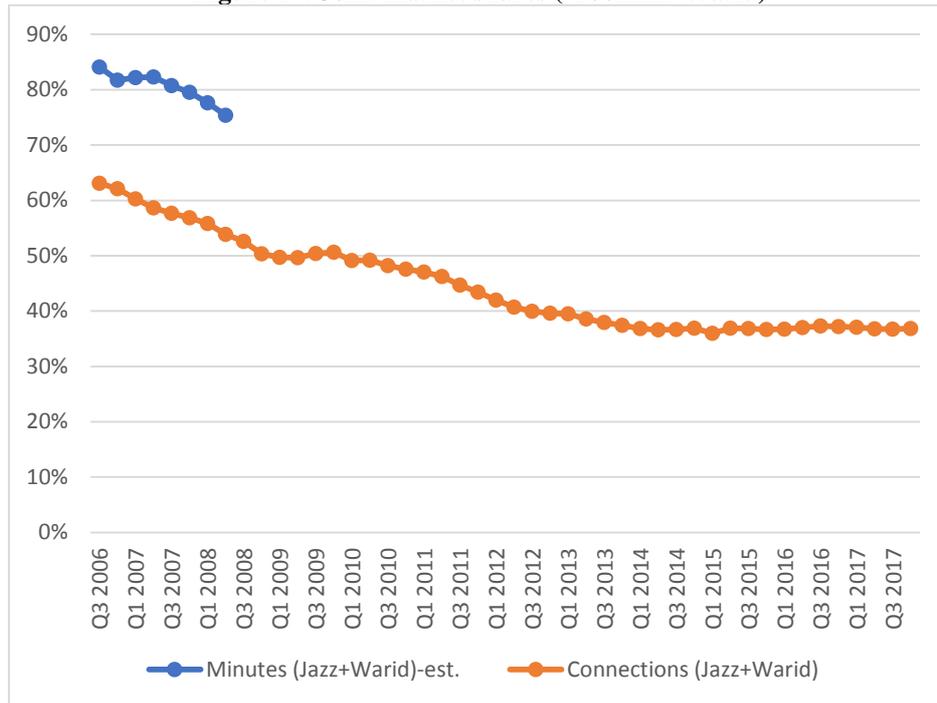
Source: Authors' elaboration

**Figure 16: Estimated market shares (minutes)**



Source: Authors' elaboration

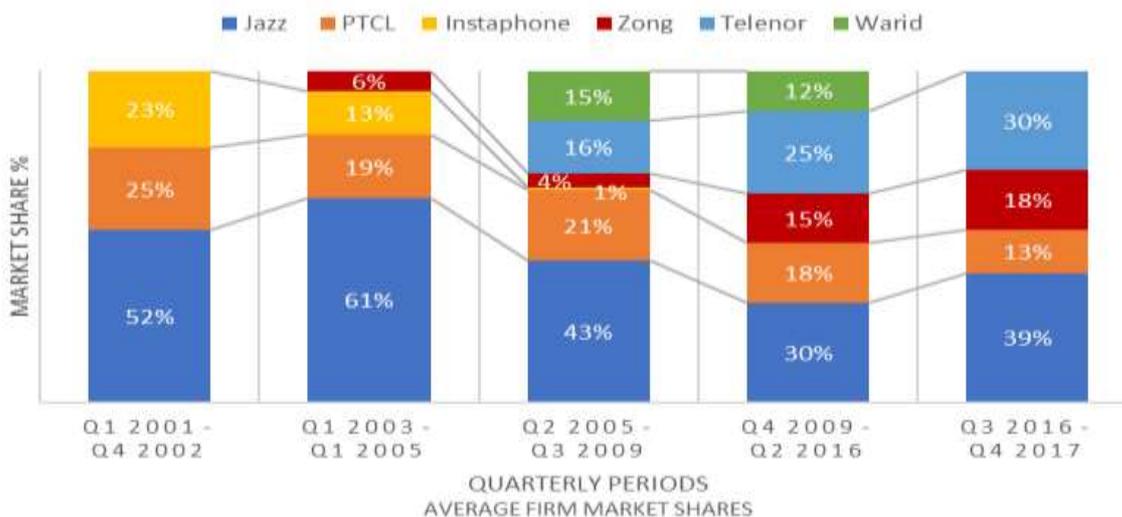
**Figure 17: Joint market shares (Mobilink+Warid)**



Source: Authors' elaboration

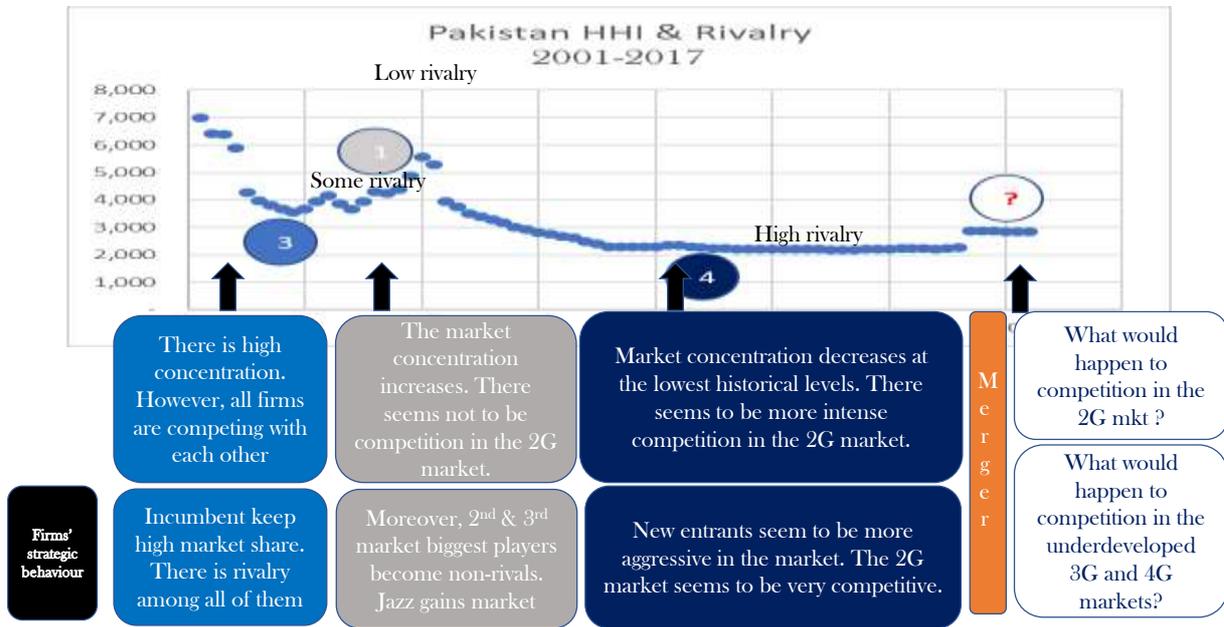
21. Even though Jazz and its predecessors have led the mobile market since the onset, the merger with Warid has allowed it to distance itself from competitors in terms of market shares (Figure 18). After the 2017 merger, rivalry between operators seemed to have decreased compared with previous periods (see Error! Reference source not found. below).

**Figure 18: Market shares dynamics (subscriptions)**



Source: Authors' elaboration

**Figure 19: HHI and firm rivalry**



Source: Authors' elaboration

## II. KEY REGULATORY RESTRICTIONS TO COMPETITION IN THE MOBILE TELECOM SECTOR IN PAKISTAN

### A. Key Regulators in Pakistan

#### Ministry of Information Technology and Telecommunication (MoITT)

22. **Ministry of Information Technology and Telecommunication (MoITT)** is the national focal Ministry and an enabling arm of the Government of Pakistan for planning, coordinating and directing efforts to initiate and launch Information Technology and Telecommunications programs and projects aimed at economic development of the country. Its responsible for formulation and implementation of policies and legal framework; providing ICT infrastructure for enhancing productivity; facilitating good governance; improving delivery of public services and contributing towards the overall socio economic growth of the country.<sup>21</sup>

#### The Pakistan Telecommunications Authority (PTA)

23. **PTA is the body in charge with regulating telecommunications in Pakistan.** PTA was established by the Pakistan Telecommunication (Re-Organization) Act, 1996 (the “Telecommunications Act”).<sup>22</sup> In addition to the Telecommunications Act, wireline, wireless, satellite and cable providers are regulated by the Act and by the Pakistan Telecommunication Rules, 2000 (the “Telecommunications Rules”).<sup>23</sup> PTA's statutory mission include:

- a. Regulating the establishment, operation and maintenance of telecommunication systems and provision of telecommunication services in Pakistan;
- b. Receiving and disposing applications for the use of radio-frequency spectrum;
- c. Promoting and protecting the interests of the users of telecoms services in Pakistan;
- d. Promoting the availability of a wide range of high quality, efficient, cost effective and competitive telecommunication services throughout Pakistan;
- e. Promoting the modernization of telecommunication systems and telecommunication services;
- f. Investigating and adjudicating on claims against licensees;
- g. Making recommendations to the Federal Government on the issue of international communications; and
- h. Performing other functions, which the Federal Government may assign to it.<sup>24</sup>

24. **The PTA consists of three Board members, including a professional telecommunication engineer and a financial expert, to be appointed by the Government for a four years term** (the Act does not clarify the necessary qualifications of the third Board member). As per the Chairman, it is chosen by the Government amongst PTA’s Board members. The Telecommunications Act further

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<sup>21</sup> Ministry of Information Technology and Telecommunication. <https://moitt.gov.pk/>

<sup>22</sup> Act No. XVII OF 1996, An Act to provide for re-organization of telecommunication System, 17<sup>th</sup> October, 1996, amended by Pakistan Telecommunication (Re-organization) Act, (Amendment) Act, 2006 (Act No. II of 2006 dated 1st March, 2006.

<sup>23</sup> S.R.O. 847 (I)/2000, 2<sup>nd</sup> November 2000.

<sup>24</sup> [www.pta.gov.pk](http://www.pta.gov.pk)

establishes rules aimed at preventing conflicts of interest by determining that members of the PTA shall not have any direct or indirect financial interest in, or have business connection with any person, any establishment or firm which renders telecommunication services or supplies telecommunication equipment to any telecommunication sector (in Pakistan or abroad). Furthermore, the Act sets forth the reasons that may justify removal of Board members from office so as to strengthen PTA's independence from the Government (mental or physical disability or misconduct, including corruption and dishonesty).<sup>25</sup>

- 25. Notwithstanding the existence of safeguards, PTA would benefit from a strengthening of its institutional structure that can effectively prevent the exercise of undue public and private influence.** Currently, the Act allows the Federal Government to issue policy directives to PTA, which the PTA must comply with. The policy directives below can apply to virtually every domain of telecoms regulation without there being any limits on the Governmental discretion:<sup>26</sup>
- i. number and term of the licenses to be granted in respect of telecommunication systems which are public switched networks, telecommunication services over public switched networks and international telecommunication services, and the conditions on which those Licenses should be granted;
  - j. framework for telecommunication sector development and scarce resources
  - k. the nationality, residence and qualifications of persons to whom licenses for public switched networks may be issued or transferred or the persons by whom licensees may be controlled;
  - l. national security requirements; and
  - m. any matter related to telecommunication sector, not inconsistent with the provisions of this Act. (emphasis added)

### **Frequency Allocation Board (FAB)**

- 26. Spectrum Management has been entrusted to a specific body, the FAB.** Applications for spectrum allocation and assignment are made before the PTA, which then must refer the application to the FAB within 30 days.<sup>27</sup> Pursuant to the telecommunications act, FAB has exclusive authority to allocate and assign portions of the radio frequency spectrum to the government, providers of telecommunication services and telecommunication systems, radio and television broadcasting operations, public and private wireless operators and others.<sup>28</sup> The board of the FAB consists of:<sup>29</sup>
- (1) A Chairman appointed by the Federal Government;
  - (2) A Vice-Chairman with functions of Executive Director, appointed by the Federal Government;
  - (3) The Chairman of PTA; and
  - (4) A nominee each of the Ministry of Defense (Corps of Signals), Ministry of Information and Broadcasting, Ministry of Interior, [Information Technology and Telecommunication Division] and Pakistan Electronic Media Regulatory Authority ("PEMRA").

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<sup>25</sup> Telecommunications Act, Section 3.

<sup>26</sup> Telecommunications Act, Section 8.

<sup>27</sup> Telecommunications Act, Section 42.

<sup>28</sup> Telecommunications Act, Section 43.

<sup>29</sup> Telecommunications Act, Article 43(2).

Even though FAB's Board being nearly exclusively comprised of Governmental appointees, it can only approve regulations on its own functioning and exercising its statutory functions subject to prior Federal Government approval.<sup>30</sup> Furthermore, the Federal Government can directly enact rules on spectrum management without having to pass them by FAB.<sup>31</sup> In order to strengthen the technical independence of FAB, a body which performs highly technical spectrum management functions, it would be worth considering including independent experts in its Board, and limiting (or eliminating) the possibility of the Federal Government directly enacting rules on spectrum outside FAB's institutional setting.

### **Competition Commission of Pakistan (CCP)**

**27. In Pakistan, the Competition Commission of Pakistan (CCP) is the body in charge of enforcing the competition rules across all sectors of the economy.** The CCP is an autonomous, quasi-judicial, competition law enforcement authority<sup>32</sup> with powers to apply and enforce the Competition Act, from 2010.<sup>33</sup> The competition rules provided for in the Competition Act apply across the whole territory of Pakistan, and to all undertakings, regardless of their ownership structure or the economic sector in which they are active.<sup>34</sup> The Competition Act applies to the main types of anticompetitive conduct, including: abuse of dominance<sup>35</sup>; agreements restrictive of competition<sup>36</sup>; and mergers that substantially lessen competition by creating or strengthening a dominant position.<sup>37</sup> In addition, the Competition Act also includes rules on unfair competition, with a Section concerning the prohibition of deceptive marketing practices.<sup>38</sup> Finally, the CCP may exempt from the Competition Act's prohibition, certain agreements that may be restrictive of competition under Section 4. Pursuant to Section 9(1) of the Competition Act, the Competition Commission may give exemptions in respect of agreements which substantially contribute to: Improving production or distribution; promoting technical or economic progress, while allowing consumers fair share of the resulting benefit; or the benefits of that clearly outweigh the adverse effect of absence or lessening of competition. A conduct can only be the subject to an exemption, if it is not deemed to be always prohibited. So-called hardcore competition restraints shall be deemed to be always prohibited since they are highly unlikely of creating any benefit to consumers; this is the case of agreements involving price fixing, quantity fixing,

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<sup>30</sup> Telecommunications Act, Article 43(7).

<sup>31</sup> Telecommunications Act, Article 57. The rules may apply to the following: (a) extending the categories of telecommunication systems or telecommunication services for which a license is not required under section 20; [(ab) the manner in which the USF and Research and Development funds may be administered; (ac) the criteria based on which sums may be released from USF and Research and Development Fund; (ad) preventing, prohibiting, and remedying the effects of anticompetitive conduct by licensees; (ae) regulating agreements or arrangements by licensees in respect of international telephony service; (af) requiring licensees that handle international telephony service to make payments (i) to prescribed categories of licensees that terminates international telephony service calls in Pakistan in from of APC and (ii) to the USF in respect of international telephony service calls that prescribed categories of licensees terminate in Pakistan; (ag) enforcing national security measures in the telecommunication sector; and (ah) regarding lawful interception.]

<sup>32</sup> CCP, Policy Note on Telecom Policy – Telecom Competition Rules Incongruities with the Competition Act, 2010, November 10, 2016.

<sup>33</sup> Competition Act approved by Act XIX from October 13, 2010.

<sup>34</sup> Competition Act, Section 1.

<sup>35</sup> Competition Act, Section 3.

<sup>36</sup> Competition Act, Section 4.

<sup>37</sup> Competition Act, Section 11.

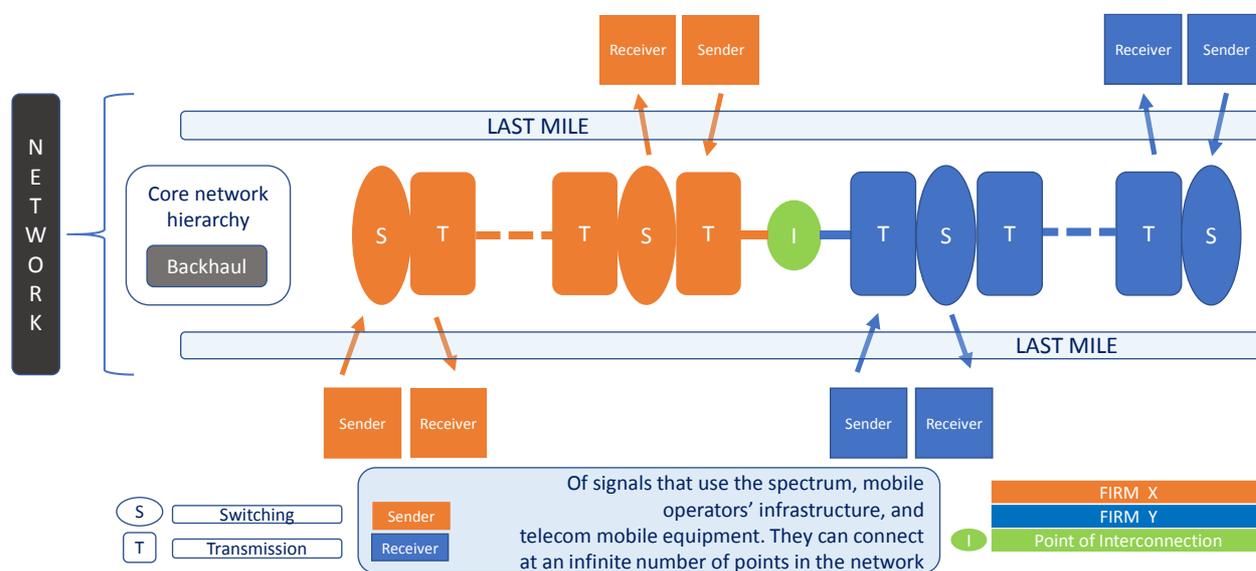
<sup>38</sup> Competition Act, Section 10.

market partitioning and bid rigging. Hardcore horizontal restraints typically lead to higher prices, reduced output and an inefficient allocation of resources, thus invariably reducing consumer welfare. In such cases, the harm to competition always outweighs any potential consumer welfare gains. In this regard, the Exemptions Regulations clearly establish that agreements, such as price fixing are regarded as having an appreciable adverse effect on competition.<sup>39</sup>

## The mobile services value chain

28. **The core of the value chain for the mobile telecom network is the access and sharing of the transmission and switching of signals that are sent through the operators' network hierarchies.** The network hierarchy can be segmented into a core network, a backhaul (middle mile), and a last mile. The infrastructure sharing can be active or passive. Active infrastructure sharing relates to backbone capacity leasing or last mile access, while passive infrastructure sharing relates to leasing towers, ducts, or fiber. Figure 20 depicts the value chain for mobile telecom services. Senders and receivers of information (signals) can be in the same firm network or in different firms' networks. An important feature of the supply value chain for the mobile services is that their users and receivers can connect to the network in an infinite number of points; this is unlike fixed services, where the connecting point is finite and it is usually just one (see Box 2 below for a description of the mobile telecommunications network hierarchy).

Figure 20: Value chain for mobile services

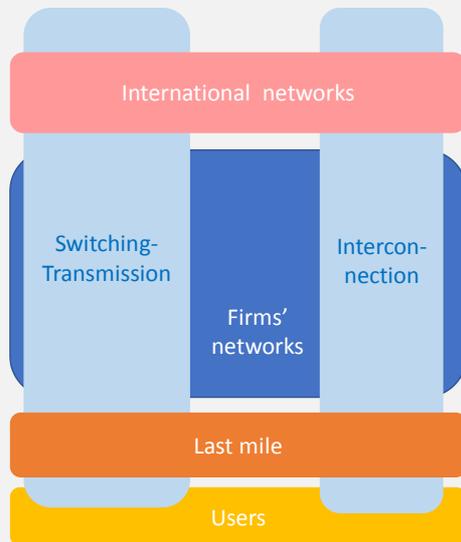


Note: All mobile telecom end-user equipment has some kind of switching and transmission properties. For instance, a smartphone has processors that perform switching tasks as well as transmission tasks. Switching equipment in the network also perform switching and transmission tasks. This also applies to tablets & pc equipment with wi-fi access, etc. Also, note that antennas that work as repeaters of signals are part of the transmission infrastructure.

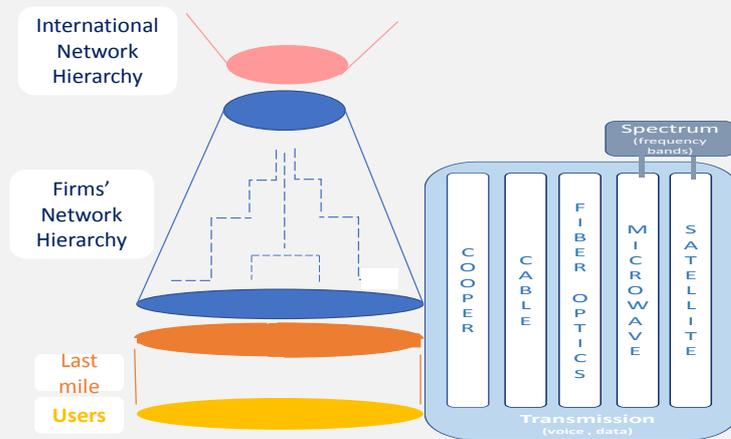
<sup>39</sup> Exemptions Regulations from June 4, 2014, Schedule, Form A, Section 5.1.1.

**Box 2: Mobile telecommunications network hierarchy**

Signals (voice and/or data) are transmitted throughout different means and devices. To make and to read signals “switching” is required. Switching implies “thinking skills” or “algorithm processing skills”. A signal in telecommunications can be partitioned as code – sent – read code (or decoded). These are the activity tasks of the switching functionality (code or decode) plus the transmission (sent) functionality. The (re)sending of signals is called “transmission”. The business of telecommunications is based on the transmission and switching of signals.



The switching and transmission of signals travel through telecom networks. Telecom networks can have different owners. A signal connection happens when the telecom cycle of a signal is repeated, namely, a code-sent-(de)coded is repeated. There is always signal connection, which happens when a signal connection is repeated in the network and it reaches at least two different agents (users). When the signal connection is repeated over the network of a different owner, then, this is called interconnection. Sometimes signals in a network travel outside the geographic boundaries of a country, in this case, a local network interconnects to an international network. Once the telecom signal reaches its end user, this user can in turn also create a new telecom signal. The network infrastructure to reach the end user is called the last mile.



Source: Based on *Ministry of Information Technology, Telecommunications Policy 2015; Authors' elaboration*

**29. A fully-functioning telecom value chain that delivers competitive outcomes would require dynamic market conditions and pro-competition regulation at all level of the supply chain (Figure 21).**

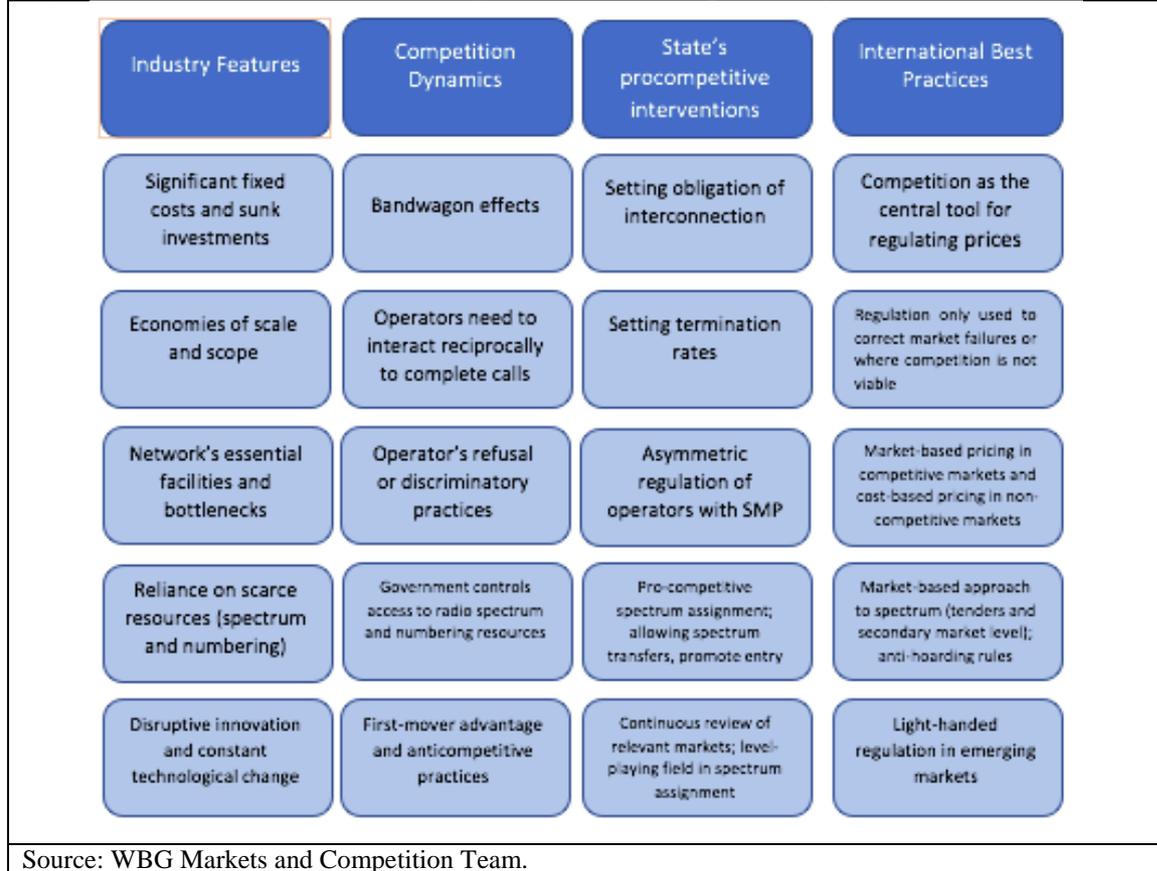
**Figure 21: Competition along the Telecom Value Chain (fix and mobile)**

	Core network	Middle mile	Access network	Final services to consumers
	National backbone	Backhaul	Last mile	
Definition	<p>Network that provides connection of a national network to global networks</p> <p>Transmission path that carries data gathered from the landing point of international communications infrastructure or a node in the national network to nodes for smaller local/regional networks within the country, and vice versa.</p> <p>i.e. Local or regional networks connect with the backbone for national long-distance interconnection/ transmission and to connect with each other. The connection points are known as network nodes.</p>	<p>Segment of a telecommunications network carrying data from the last mile (i.e. from a local network base station/cell tower to the core/ backbone network</p> <p>Backhaul capacity can be leased from a incumbent network operator by last mile service providers that lack their own infrastructure.</p>	<p>Portion of the telecommunications network chain that physically reaches the end-user's premises.</p> <p>Carries data from the customer to a local network base station.</p> <p><b>Two main technologies for broadband access:</b></p> <ul style="list-style-type: none"> <li>Fixed services associated with a physical location (Fixed wireline, fixed wireless (e.g. WiFi), satellite connection)</li> <li>Mobile services, which can be used from any location with coverage (2G, 3G, 4G (e.g. LTE), xG)</li> </ul>	<p>Services used directly by consumers in daily activities.</p>
Options for expansion and competition	<p><b>Sharing of international gateway facilities:</b> including undersea cables, cable landing stations and satellite assets E.g</p> <p><b>Collocation at the landing stations:</b> Allow rivals to install their own equipment in the cable landing station</p> <p><b>Connection services:</b> services by the incumbent to operators who collocate their equipment in the landing station to connect national networks to the submarine cable system</p> <p><b>Access to non-owned cables:</b> ability for operators to access capacity that is owned (or leased long term) by a third party on any submarine cable at a landing station</p>	<p><b>Active infrastructure sharing:</b> Leasing of the capacity from backbone infrastructure provider Among potential providers are incumbent operator and utility companies</p> <p><b>Passive infrastructure sharing</b> E.g leasing of ducts (where operator could deploy its own fiber cables) or leasing of dark fiber (which could be lit by own active equipment of the operator)</p> <p><b>Deployment of own infrastructure.</b> Performance of civil works and laying down of own infrastructure (likely fiber) – requires right of way for fiber, highly capital intensive</p>	<p><b>Fixed network</b></p> <ul style="list-style-type: none"> <li>Active sharing: <ul style="list-style-type: none"> <li>Local loop unbundling (LLU): allowing multiple telecommunications operators to use connections from the local exchange to the customer's premises.</li> <li>Bitstream access: incumbent makes a high-speed access link to a customer's premises available to a third party)</li> </ul> </li> <li>Passive sharing: Ducts, poles, cables</li> <li>Deployment of own infrastructure: requires right of way for fiber capital intensive but less so than for core and middle mile</li> </ul> <p><b>Mobile network</b></p> <ul style="list-style-type: none"> <li>Active sharing: <ul style="list-style-type: none"> <li>Full Mobile Virtual Network Operator (MVNO): sharing of incumbent MNO's Radio Access Network (RAN)</li> <li>Light MVNO: Shares RAN, network routing, interconnection</li> <li>Roaming: Allows an operator to make use of another's network in a place where it has no coverage or infrastructure of its own.</li> </ul> </li> <li>Passive sharing: Buildings, tower sites and mast</li> <li>Deployment of own infrastructure.</li> </ul>	<p><b>Fixed network</b></p> <ul style="list-style-type: none"> <li>Voice</li> <li>Data</li> <li>Triple/multiple play – bundling broadband and other traditional services</li> </ul> <p><b>Mobile network</b></p> <ul style="list-style-type: none"> <li>Voice</li> <li>Text/SMS</li> <li>USSD</li> <li>Data</li> <li>OTT services: which allows for voice, text, data, payment services</li> </ul>

Source: World Bank Group's Market and Competition Policy Assessment Toolkit (forthcoming).

30. **The mobile telecommunications sector is characterized by disruptive technology and continues to evolve at a fast pace.** Technology changes lead to constant innovation and evolution of services and markets, which create new rivals and shifts the economic strength of existing rivals.
  
31. **Mobile telecommunications markets also feature well-known industry characteristics that make the sector more prone to market concentration and potential anticompetitive practices** (Figure 22). These characteristics include significant fixed costs and sunk investments, economies of scale and scope, essential facilities and bottlenecks of network industries, and a reliance on scarce resources, including spectrum. Entrants in some segments face high fixed costs due to upfront investments in infrastructure, as well as commercial investments in sales and distribution channels. These high initial fixed costs, particularly in upstream segments, give incumbents a strategic advantage over new entrants, because the latter have fewer clients to spread their fixed costs.

**Figure 22: Telecommunications Industry Features and Competition Dynamics**



32. **High infrastructure costs limit the economic viability of replicating some facilities and thus limits the number of entrants.** This can lead to the emergence of a dominant wholesale infrastructure supplier or a small number of retail suppliers with their own duplicated infrastructure.
33. **As a network industry, telecommunications networks present essential facilities and bottlenecks that lead to market concentration.** Market entry in the retail supply of telecom services requires either access to infrastructure or the ability to resell services (e.g. pure service MVNO).
34. **The inherent features of telecommunications networks result in competition dynamics that create strategic barriers to entry and that require both *ex ante* and *ex post* regulatory intervention to assure market efficiency and protect consumers and competitors from abuses of market power** (Box 3). The telecommunications sector requires a strong regulatory framework that enables the management of scarce resources (e.g. radio spectrum), ensures access to bottlenecks and overcomes the lack of private initiative in some areas of the country where commercial participation may otherwise be unviable. An ineffective regulatory framework will allow players with substantial market power to distort competition and prolong the market power historically gained prior to the liberalization of the sector.

**Box 3: Setting the right combination of ex ante regulation and ex post competition enforcement**

Managing the balance between *ex ante* asymmetric regulation and *ex post* competition enforcement should follow the evolution of the opening of markets to competition (Figure 23).

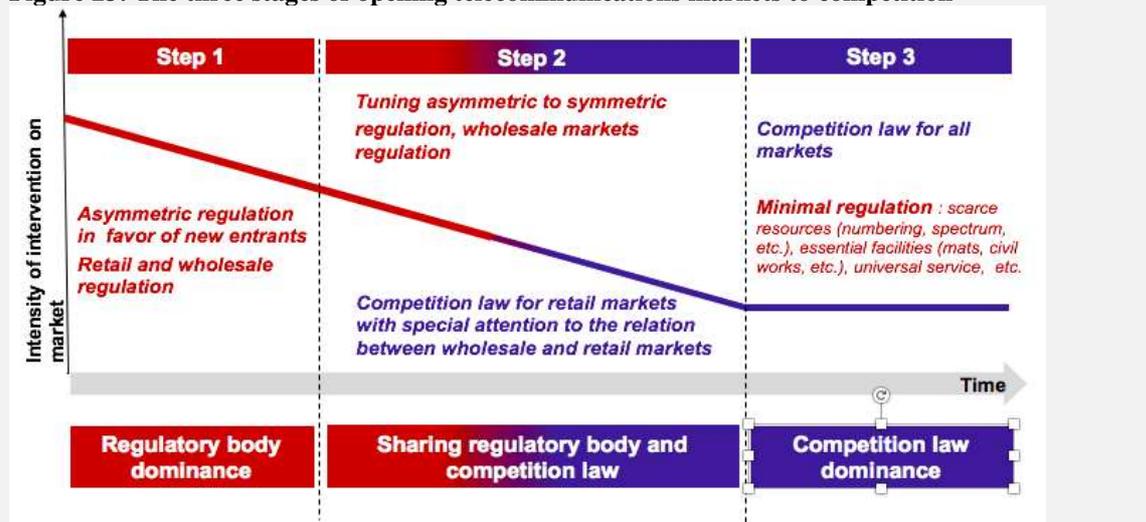
During the first phase of opening markets to competition, regulation is pro-active and asymmetric, as it must put into place conditions for viable entry of new operators that are capable of competing with the historical incumbent in the long run. This first phase is characterized by a focus on tariff regulation at the wholesale level (i.e. for access to network infrastructure and termination rates) and, if necessary, at the retail level (phone subscriptions). Tariffs should be oriented towards the costs of an efficient operator, although this requires overcoming the asymmetry of information that exists between the former incumbent and the regulator in terms of the incumbent’s costs. The control of the costs of the operator by an independent auditor designated by the regulator and the design of ad hoc cost models by the regulator or by independent trustees designated by the regulator can enable the regulator to reduce information asymmetries and to establish regulated tariffs on the basis of objective and verifiable benchmarks.

Once wholesale markets are adequately regulated, the freedom for players to choose their own tariffs and compete in this dimension can be introduced at the retail level in the second phase. Here it is important that an effective competition authority is in place to detect and deter potential abuses of dominance by the dominant operator in the non-regulated retail markets.

Eventually, in the third phase the progressive establishment of viable operators can enable the creation of competitive wholesale markets in some segments (regulated primarily on an *ex post* basis through competition enforcement), as well as the identification of market segments where competition is highly difficult or impossible to foster, where asymmetric regulation remains applicable. This latter phenomenon may especially concern geographical areas with low density or certain capital assets (radio frequencies, passive infrastructure, capacity links) which cannot easily be replicated and which therefore may constitute essential facilities. The identification of these essential facilities allows the regulator to determine the parameters of long term regulation.

It should also be highlighted that, as regards scarce resources, such as spectrum, a competitive, transparent and objective process for the assignment of rights to such resources should be established. Competition in the market must remain active and service-based competition can complement infrastructure competition whenever the latter is not viable in the short to medium run.

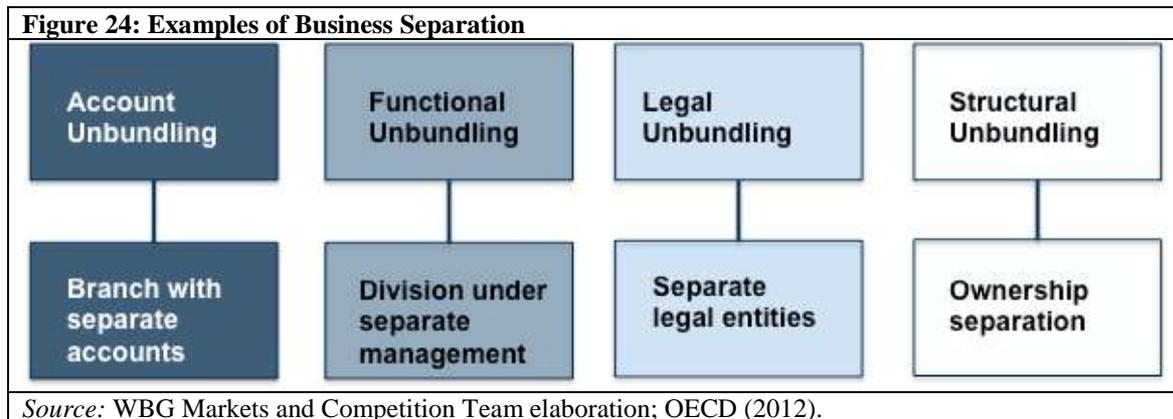
**Figure 23: The three stages of opening telecommunications markets to competition**



Source: WBG Markets and Competition Team and Tera Consultants (2018)

- 35. Moreover, because the incumbent has the incentive and the ability to discriminate in favor of its vertically integrated subsidiaries through control of non-replicable assets, further regulatory intervention may be necessary to require a transparent

separation between the parts of the incumbent controlling the bottleneck assets and the other divisions (Figure 24).



## B. Strengthening the Framework to Encourage Entry, Expansion and a Level Playing Field Between Services-Based Competitors

- i) Asymmetric mobile services interconnection rates may not be set appropriately and may encourage club effects

36. **Typically, in countries that have adopted the calling party pay system, the regulation of termination tariffs has often led to anticompetitive practices downstream at the retail level.** This is so because the dominant operator can benefit from “club effects,” which allow it to retain part of the traffic that would otherwise flow towards their competitors and to induce loyalty among its subscribers, as well as to unduly capture subscribers from its competitors. When a dominant player’s on-net calls are cheaper than off-net calls, subscribers have the incentive to call the subscribers of the same operator as well as to join the dominant operator’s network so as to benefit from the possibility of calling much broader subscribers at a cheaper price (a “club effect”). Hence, the on-net/off-net differentiation can have a foreclosure effect on smaller operators.

37. **Asymmetric mobile interconnection charges, which are not cost-based, may generate “club effects” and on/off net discrimination.** This is due to an asymmetry between on- and off-net traffic, which is beneficial to the former incumbent, which receives a higher return from its competitors than vice versa.

38. **Only an operator with market power can profitably implement such tariff differentiation strategies, which can take multiple forms,** including: unlimited calls, packages limited to calls for other subscribers of the same network, tariff differentiation between on- and off-net which are not proportional to the costs of wholesale tariffs, etc.

39. **Along with international best practice (GSM, ITU), LRIC is the cost-based method to determine mobile termination rates (MTRs) in Pakistan.** In 2000, the MoIT determined that interconnection charges should follow long run incremental cost

models (LRIC)<sup>40</sup>. In 2004, interconnection guidelines from PTA followed closely the description of an LRIC model. PTA interconnection guidelines mentioned in Clause 5.5. that “charges for interconnection services shall be cost-oriented”; in Clause 5.6. that “the operator that causes a cost for interconnection services shall pay for that cost to the other operator when interconnecting”, and in Clause 18.2 indicated that interconnection charges should: (a) reflect the behavior of underlying costs; (b) set with transparency and cost orientation; (c) be sufficiently unbundled; (d) not hide cross-subsidies of anti-competitive nature; and (e) include a fair share of joint and common costs.<sup>41</sup>

40. **However, in practice, Pakistan’s method for calculating mobile termination rates (MTRs) is not cost-based and may not be effective in preventing club effects and anticompetitive practices by operators with Significant Market Power (SMP).** According to the Telecommunications Rules from 2000, MTR charged by operators with SMP should be based on long run incremental costs (LRIC) plus a reasonable rate of return on LRIC costs. However, this obligation must only be implemented “as soon as practicable”, depending on the adoption by the operator with SMP of the necessary accounting and management information systems. Moreover, the SMP operator will also be allowed to recover a contribution to its common costs in the manner determined by the PTA. Furthermore, until a LRIC-based methodology is put into place, the SMP operator's interconnection charges shall be based, as far as possible, on cost-oriented interconnection charges for similar services provided by telecommunication operators in other countries providing comparable telecommunication services to those provided by the SMP operator.<sup>42</sup>
41. **An overestimation of MTR can establish a decision rule that increase the costs of some rival firms to compete and this, in turn, may reinforce or sustain dominance.** The determination of MTR based on fully distributed cost models (FDC) may have tapered or not been conducive enough for competition intensity, even when termination rates were being lowered through time. FDC are not LRIC models. They may tend to overestimate the termination charges as they incorporate non-relevant common costs (Noumba, et.al, The World Bank, 2003). Given the regulatory intentions from

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<sup>40</sup> In the 2<sup>nd</sup> of November of 2000, the Ministry of Science & Technology IT & Telecommunication Division, defined LRIC as follows: “(1)“LRIC” means long run incremental costs, where “incremental costs” means average forward looking additional costs incurred by the provision of interconnection services and “long run costs” includes all elements of costs including, without limitation, operating and capital costs” (The Gazette of Pakistan, Extra, Nov., 27, 2000: 2368). Also, in referral to SMP operator (i.e., an operator with significant market power), in the same document from November 2000, it stated that: “[...] interconnection charges shall, as soon as practicable, be based on LRIC in the manner determined by the Authority and shall include a reasonable rate of return on LRIC costs but the SMP operator shall not be obliged to charge on the basis of LRIC until it has put in place the necessary accounting and management information systems which shall enable it to do so in accordance with a reasonable time table determined by the Authority [...]” (The Gazette of Pakistan, Extra, Nov., 27, 2000 : 2378).

<sup>41</sup> Pakistan Telecommunication Authority, Interconnection Guidelines, 2004. In the Principles of Interconnection, Clause 5, it indicates in Clause 5.2. “Interconnection and related services and facilities shall be provided on the basis of unbundled network elements and charged accordingly. A requesting operator shall only pay for the network components or facilities of the interconnection”. Clause 5.5. “Charges for interconnection services shall be cost-oriented”. Clause 5.6. “The operator that causes a cost for interconnection services shall pay for that cost to the other operator when interconnecting”. Clause 5.7. “Cost of inefficiencies of an operator should not be passed on to other operators through higher interconnection charges”. (PTA, Interconnection Guidelines, 2004: 3).

<sup>42</sup> Telecommunications Rules, 2000, Section 16(4).

Pakistan's legal framework for interconnection, it is clear that the regulatory framework does allow the implementation of LRIC models.

42. **In 2017, the PTA carried-out a consultation with the purpose of reviewing its method for calculating MTRs.**<sup>43</sup> This review follows the increase in the differential of on-net/off-net calls with operators offering a greater number of on-net offers, including free calls, and is in accordance with the Telecommunications Policy 2015 goal of reviewing regulatory remedies, including MTR, every two-years (The last change of the MTR had taken place in 2010, which set the MTR in Rs. 0.90/min).<sup>44</sup> Although a cost-based approach is regarded as the most appropriate method for determining MTR, the Consultation document considers that an alternative approach must be followed under Pakistan's current scenario where cost-based data is unavailable.<sup>45</sup> Therefore, until such cost-based data is available, the PTA proposes to determine an interim MTR based on international benchmarking and in, in the interim, carry-out a cost-based interconnection study. For its benchmark analysis, PTA has selected a sample of 8 countries (India, Bangladesh, Sri Lanka, Thailand, Malaysia, Australia and United Kingdom) and used using purchasing power parity (PPP) adjustments applied to 60% of each country's MTR to allow for the differences in the relative cost of living between benchmark countries. Using this benchmark, the PTA concludes that the MTRs of Rs. 0.90 in Pakistan is far higher than the one practiced in comparator countries: around 110% higher than the mean benchmark MTR and is around 198% higher than the median benchmark.<sup>46</sup> As a result, the Consultation document determines as an interim measure that MTRs should be set in Rs. 0.80 per minute from 01<sup>st</sup> December 2017 to 30<sup>th</sup> November 2018, and Rs. 0.70 per minute from 1<sup>st</sup> December 2018 onwards.<sup>47</sup>
43. **On November 16, 2018, PTA issued a Determination on MTR where it is recognized that the current MTR of Rs. 0.90 per minute in Pakistan is far above the optimal level and that it is counterproductive to achieve economic efficiencies in the market.** Hence, PTA considers it imperative to review the MTR downwards immediately using glide path approach followed by a cost-based determination of MTR.<sup>48</sup> Furthermore, PTA acknowledges concerns on the differentials of tariffs for off-net and on-net calls and expects that current review of MTR will have positive impact on the industry in terms of lower off-net tariffs and competition.<sup>49</sup> In light of the benchmarking analysis carried-out, PTA determined the MTR for all types of calls (i.e. local, long distance and international incoming calls) terminated on mobile networks from other mobile networks or fixed networks: (i) from 1<sup>st</sup> January 2019 to 31<sup>st</sup> December 2019: 0.80 Rs per minute; and (ii) from 1<sup>st</sup> January 2020 onwards: 0.70 Rs per minute. Meanwhile, PTA is expected to carry out cost-based study to determine interconnection charges and to conduct a separate consultation on international termination rate "in due course of time".<sup>50</sup>

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<sup>43</sup> PTA, Consultation on Review of Mobile Termination Rate, September 2017.

<sup>44</sup> Telecommunications Policy, 2015, para. 5.1.12.

<sup>45</sup> PTA, Consultation on Review of Mobile Termination Rate, September 2017, p. 6.

<sup>46</sup> PTA, Consultation on Review of Mobile Termination Rate, September 2017, p. 7.

<sup>47</sup> PTA, Consultation on Review of Mobile Termination Rate, September 2017, p. 8.

<sup>48</sup> PTA, Determination on Mobile Termination Rate, of November 16, 2018, at 4.17

<sup>49</sup> PTA, Determination on Mobile Termination Rate, of November 16, 2018, at 4.39

<sup>50</sup> PTA, Determination on Mobile Termination Rate, of November 16, 2018, at 5.1 and 5.5.

44. **The PTA published Draft Telecommunications Competition Rules in 2017, which have not been yet adopted.** According to these Draft Rules, an operator with SMP shall supply competitive services at prices based on LRIC (although they safeguard the possibility of applying any other cost standard that may be applied by the PTA).<sup>51</sup> Even though the Draft Competition Rules did not lead to the implementation of LRIC in setting MTR, they still did impose a series of instrumental obligations pertaining to cost separation that could have helped with the implementation of the LRIC test. In effect, and operator with SMP shall keep separate accounts so as to identify all elements of cost and revenue, with the basis of their calculation and the detailed attribution methods used, related to their activities associated with the provision of telecommunication networks or services including an itemized breakdown of fixed assets and structural costs, or have structural separation for the activities associated with the provision of electronic communications networks or services.<sup>52</sup>

### C. Strengthening the Framework to Encourage entry, Expansion and a Level Playing Field Between Facilities-Based Competitors

i) The absence of a separate general authorization from the licensing regime can be unduly burdensome on operators which do not rely on scarce resources (e.g. frequencies) to operate

45. **Pakistan's telecoms regulatory framework unduly burdens market entry by facilities-based competitors due to the lack of a well-defined general authorization framework.** The Telecommunications Act currently does not distinguish between licensing and authorization of telecommunications services, as it determines that "licence" means an authorization granted by PTA for the establishment, operation or maintenance of any telecommunication system or provision of any telecommunication service.<sup>53</sup> The Telecommunications Policy 2015 determines that a new licensing regime shall be developed, which specifies the telecommunications services that fall under a general authorization regime. In particular, this new regime ought to clarify the over-the-top services that are to fall under the new authorization regime.<sup>54</sup> However, this new regulatory framework governing licenses and authorizations is yet to be approved, meaning that all telecommunications services still fall in principle under the umbrella of the licensing regime (e.g. MVNOs<sup>55</sup>). In addition, whilst the Telecommunications Rules establish that licenses can be issued under a competitive process, there is no clarity as per the circumstances in which a bidding process must be followed.<sup>56</sup> In this regard, Pakistan would benefit from establishing that the number of operators in the market should only be restricted in the case of scarce resources (e.g. certain radio spectrum frequencies), and that an authorization procedure should be the rule for the remaining cases.

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<sup>51</sup> Draft Competition Rules, Article 10(3) and (7).

<sup>52</sup> Draft Telecommunication Rules, Section 10(5): the account separation requirement may be waived for firms with a turnover of less than USD 5 million.

<sup>53</sup> Telecommunications Act, with Article 1(2)(b).

<sup>54</sup> Telecommunications Policy, 2015, para. 5.2.5.

<sup>55</sup> PTA, Framework for MVNO Services in Pakistan, October 23, 2009.

<sup>56</sup> Telecommunications Rules, Section 4(3)(f).

- ii) Pakistan has not yet implemented a coherent and harmonized framework governing Rights of Way

46. **The PTA is committed to adopt a new regulatory framework governing Rights of Way (RoW), which can streamline existing procedures and facilitate network investment.** RoW are fundamental entitlements for operators of electronic communications networks to operate above-ground and under-ground communications networks, antenna towers and other electrical connections on or in third party's land. Telecommunications licensees need to dig up streets to lay cables, put up masts and antennae and install a range of different infrastructure so they can do business. Hence, procedures for accessing RoW should be streamlined and expedite, provided they meet zoning rules and the conditions laid down by the building authorities. Pakistan's regulatory framework establishes that the licensee shall request the RoW to approve the mode of execution of the works it proposes to undertake. The request is deemed to be granted if the owner does not respond within 30 days.<sup>57</sup> The fee payable by a licensee to a Public Authority, for the use of a Public Right of Way, shall be mutually agreed between the licensee and the owner of the RoW. In the lack of an agreement, the issue of determining the reasonableness of the fee payable for the RoW shall be referred to the appropriate Government, and a decision shall be issued within 60 days.<sup>58</sup>

47. **Public Authorities are entitled to charge a fee for the use of a public RoW, which includes laws applicable to the Public Authority as well as the local (district) laws where the RoW is located.** With time, this has created a dispersion on the fees charged by different local authorities. There is a need to harmonize those access charges through central regulation coming from PTA. The lack of a coherent framework governing the setting of fees for RoW across Pakistan has increased discretion by public authorities that contributes to limiting entry and expansion by facilities-based operators. By delegating the issue of RoW fees to local governments, the Telecommunications Act has helped creating an incoherent and non-harmonized system for accessing RoW. To address this bottleneck, The Telecommunications Policy 2015 rightly considers that *“there is a need for nationally agreed processes for the granting of rights of way at prices that lead to investment by telecommunications operators, design codes for outside plant and internal wiring that will allow standardization in the provision of infrastructure and the processes for planning and installation, and guidelines for the use of utility infrastructure.”*<sup>59</sup> A new framework is expected to be developed by the MoIT, which tackles the following aspects: (i) standardized processes for granting RoW; (ii) arbitration processes; (iii) responsibilities for granting rights of way; (iv) an outside plant code for roads and footpaths to ensure ducts and access points; (v) formulae for reasonably pricing RoW with the aim of: (1) providing a uniform charging mechanism in line with the decision already taken by the Inter Provincial Coordination Committee of the Government of Pakistan applicable to all government organisations including cantonments and areas administered by Defence organisations, and (2) encouraging site sharing by way of levying no additional charges on sharing a site.<sup>60</sup> However, and notwithstanding Section 27-A, and the Telecommunications Policy 2015 statements, Pakistan has not yet put into place RoW reforms that can facilitate and encourage investment in infrastructure.

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<sup>57</sup> Telecommunications Act, Section 27A(2).

<sup>58</sup> Telecommunications Act, Section 27A(5) and (6).

<sup>59</sup> Telecommunications Policy, 2015, p. 19.

<sup>60</sup> Telecommunications Policy, 2015, pp. 19-20.

48. **There have been instances of discriminatory granting of RoW, especially by public authorities, which can contribute for limiting the deployment of infrastructure in the last mile.** This could be due to agreements (explicit or tacit) between an upstream operator that vertically extend its dominant position to downstream agents. An example to the point are private real estate cases where a mobile operator with SMP extends its market power downstream by entering into exclusionary agreements with downstream housing buildings (downstream). CCP already had to deal with this sort of issues in the Bahria Town case.<sup>61</sup> To eliminate the legal uncertainty surrounding the anticompetitive nature of certain RoW agreements, the 2017 Draft Competition Rules specifically provide the following example of anticompetitive agreement: “*A licensee enters into an agreement with a housing scheme developer for provision of telecommunication services in a housing scheme to the exclusion of any other licensee. The agreement entered by the licensee shall be considered to restrict competition and a violation of the above rule.*”<sup>62</sup> Furthermore, the prohibition of abuse of dominance in the Draft Rules also indicates as a possible situation of abuse that of pre-emptive acquiring or securing scarce facilities or resources, including rights of way, required by another licensee for the operation of its business, with the effect of denying the use of the facilities or resources-to the other licensee.<sup>63</sup>

iii) Incomplete framework governing infrastructure sharing agreements that can effectively promote access to and deployment of infrastructure

49. **Infrastructure sharing agreements are important instruments to promote a more efficient use of assets and to enable competition in the market - however, this must be balanced with their potential to restrict competition among competitors in a way that outweighs the procompetitive efficiencies.** Thus far, Guidelines and licenses in Pakistan have only covered passive infrastructure sharing. The PTA has issued a Statement of Policy on Base Transceiver Stations (BTS) (i.e., towers and site) Site Sharing that encourages sharing of passive infrastructure.<sup>64</sup> Pursuant to the Telecommunications Policy, 2015, sharing of passive and active infrastructure will be considered before granting a new right of way or space to build towers or for other infrastructure. All licensees may share infrastructure on mutually agreed commercial terms, whilst licensees with SMP are obliged to share infrastructure on fair and non-discriminatory terms where practical. Also the Draft Competition Rules, 2017 establish that licensees shall allow sharing of resources including spectrum between the licensees to improve efficiency, promote competition and ensure that the scarce resources are used product.<sup>65</sup> However, the Draft Rules only refer to the issuing of standard terms and conditions for sharing of resources by a SMP in a relevant market.<sup>66</sup>

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<sup>61</sup> Following the Enquiry report and order (CCP, Bahria Town 2016, 2017), there were three undertakers, Bahria Town, PTCL, and Nayatel; the latter involved in phone and internet services. “(a) Bahria Town is a private company engaged in real estate development and management projects in across Pakistan and is therefore an undertaking in terms of Section 2(1)(q) of the Act. (b) PTCL is a company engaged in providing telephone and internet services nationwide and is therefore an undertaking in terms of Section 2(1)(q) of the Act. (c) Nayatel is a private company based in Islamabad. The company is engaged in the business of FTTH services and is a sister concern of Miconet Broadband and is there an undertaking in terms of Section 2(1)(q) of the Act.”

<sup>62</sup> Draft Pakistan Telecommunication Competition Rules, 2017, Section 3(1).

<sup>63</sup> Draft Pakistan Telecommunication Competition Rules, 2017, Section 13(2)(d).

<sup>64</sup> SOP on BTS Site Sharing.

<sup>65</sup> Draft Competition Rules, Section 12(1).

<sup>66</sup> Draft Competition Rules, Section 12(2).

50. **PTA would need to consider adopting a framework for the competition assessment of active and passive infrastructure sharing, including radio spectrum**, which balances the efficiencies and the anticompetitive effects that may stem from such agreements, and takes into consideration: (i) the degree of cooperation/autonomy between the parties to the agreement, which is also a function of the passive or active nature of the infrastructure; (ii) the parties' market power; (iii) the duration of the agreement; and (iv) the characteristics of the area covered (broadness and density) (for an example of guidelines on the application of competition law to mobile network/infrastructure sharing agreements in Romania, see Box 4).

**Box 4: Guidelines on the application of Competition law to mobile network / infrastructure sharing agreements in Romania**

The Romanian Competition Council (RCC) and the Romanian National Regulatory Authority, ANCOM, adopted Guidelines on the application of the Competition law to mobile network / infrastructure sharing agreements in Romania.

Network or infrastructure sharing agreements can vary greatly with regard to the level of integration between network operators, with competition issues arising when network sharing restricts competition or creates a dominant position in the market.

The competition law implications of infrastructure sharing agreements are a function of the extent of the cooperation between the parties. Typically, passive infrastructure sharing agreements tend to raise fewer concerns: as they do not involve significant information and forecast exchange between competitors, they do not require the sharing of extensive network elements and do not result in a situation of high commonality of costs. As the degree of cooperation increases (such as active infrastructure sharing, spectrum sharing or network roaming), the risks of collusion resulting from such more extensive cooperation increase.

The key factors against which such various forms of cooperation are assessed are the following:

- (i) geographic scope of the agreement – the broader the geographic scope, the greater its possible anticompetitive impacts;
- (ii) market power – the market power of the operators participating to the agreement is another element of consideration as the greater the combined market shares of the operators involved, the more significant the impact of the infrastructure sharing agreement will be for the overall market;
- (iii) duration – while some forms of infrastructure sharing agreements are structural and permanent by nature (such as active or passive infrastructure sharing), other forms of cooperation such as national roaming can easily be scaled back in time in order to avoid detrimental impacts on investments on mobile network infrastructure;
- (iv) commercial independence – the main benefits of infrastructure sharing are that operators continue to compete at service levels (as opposed to what typically happens following a merger between two mobile operators). It is therefore key that each party of a network sharing agreement retains as much commercial freedom as possible.

*Source: WBG Markets and Competition team elaboration.*

- iv) Access to alternative utilities' networks to offer backhaul capacity to the private sector should be clarified

51. **The digital infrastructure of utility companies is not clearly regulated, resulting in unused spare capacity.** A framework for accessing spare capacity (physical infrastructure and spectrum) held by public authorities and utilities should be developed in order to enable a more efficient use of the networks. According to the Telecommunications Policy 2015, *“the use of electricity networks and water, gas & other pipelines to provide rights of way, and in some cases infrastructure for telecommunications, will be promoted by ensuring the legality of such use and the*

*preparation of guidelines for their use & pricing.*<sup>67</sup> This framework should be prepared in addition to the aforementioned RoW framework, as it concerns access to backhaul (spare) capacity held by utilities.

D. Mobile spectrum allocation and assignment have been slow and unable to match the evolution of technology, even when there is availability of spectrum

52. **Spectrum allocation and assignment in Pakistan has been characterized by a piecemeal approach and has been unable to keep-up with the rapid market evolution that characterizes the mobile sector.** Spectrum for mobile communications has been typically assigned in a staggered way, which risks giving certain operators first mover advantages, and hinder the capacity of others to build 3G and 4G networks that are effectively competitive. For instance, in the 2016/2017 financial year, PTA carried out another round of auction for the 10 MHz block of the unsold Next Generation Mobile Services (NGMS) spectrum (4G) which was won by Jazz for \$295 million (plus 10% tax).<sup>68</sup> This auction was carried out just one year after the 850 MHz spectrum auction for 4G technology, launched in the financial year of 2015/2016 to address growing market demand, and which had been won by Telenor for US \$395 million.<sup>69</sup> To counter this scenario, the Telecommunications Policy 2015 determines that the MoIT, based on recommendations made by FAB and PTA, shall develop a rolling spectrum strategy (every year) with a program for the following three years.
53. **Further, and in addition to set timetables for spectrum assignments, putting in place safeguards against concentration of spectrum in the hands of a few players would also allow for a more efficient use of spectrum.** Since radio spectrum is an essential input for MNOs to compete in the mobile market, it is key that Pakistan ensures that radio spectrum is not hoarded by the incumbents in a way that limits market entry or expansion by other operators.
54. **The limited availability of spectrum as a scarce resource determines entry in last mile mobile services. Entry cannot occur if Governments or regulatory authorities do not issue spectrum licenses.** Furthermore, in markets with dominant operators, competition can be harmed if spectrum caps or other mechanisms are not considered for future assignments to preserve or encourage competition in the market. There is also a risk that market players could adopt foreclosure strategies by limiting the access of actual or potential competitors to available spectrum.
55. **When the available spectrum is insufficient to meet the demand from new entrants, best international practice advises selecting new entrants through a competitive process.** In both mobile and wireless markets, there are usually more market players interested than spectrum available for the service. By requiring potential licensees to compete for the license, scarce spectrum can be allocated to the operator that is best placed to maximize the benefit to customers and to succeed in a competitive market. Spectrum fees and taxes on mobile firms should not disincentivize investment and favor efficiency in spectrum use. Spectrum pricing principles should incentivize efficient use of spectrum – including separating management fees (based on

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<sup>67</sup> Telecommunications Policy, 2015, p. 20.

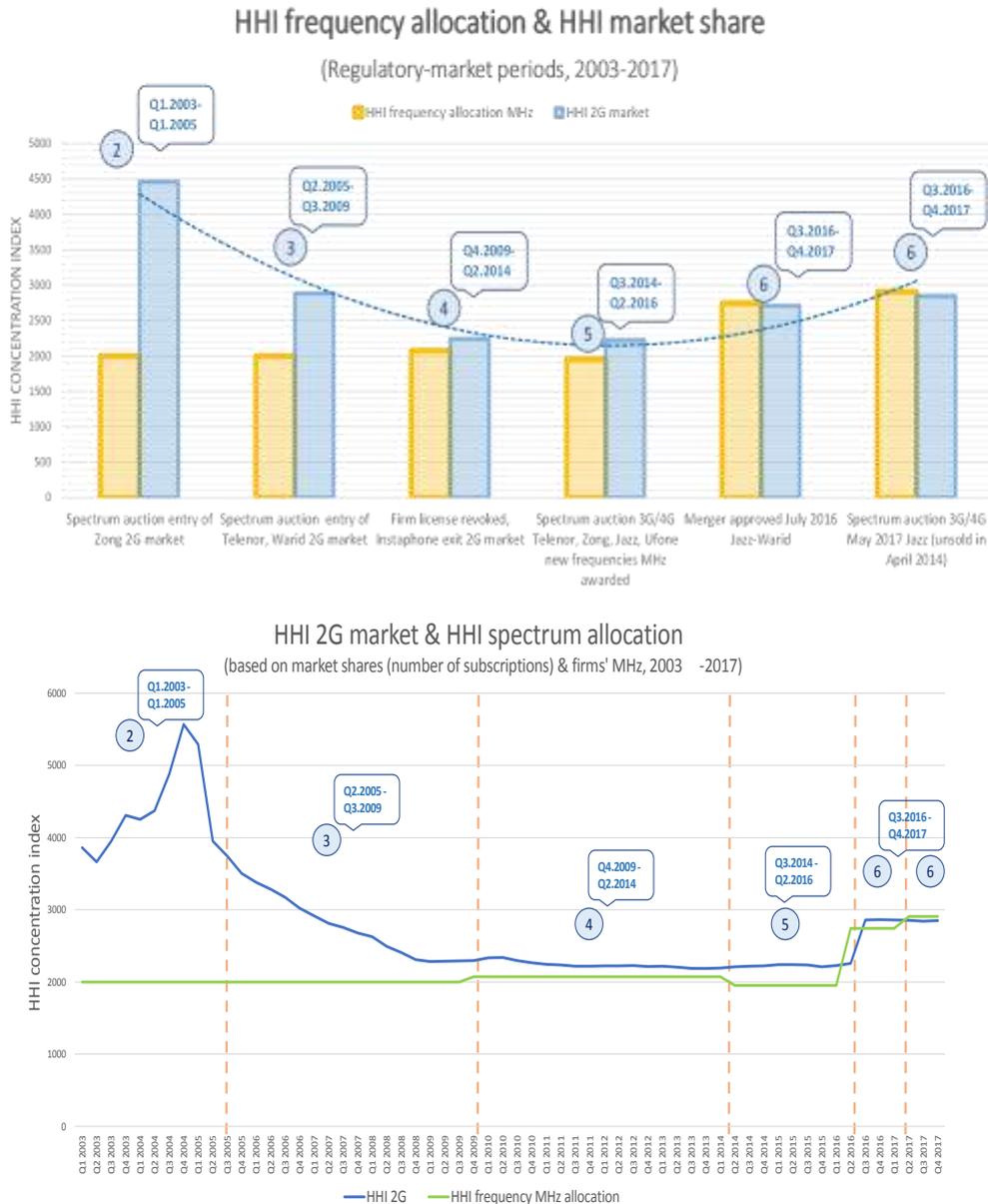
<sup>68</sup> [www.pta.gov.pk](http://www.pta.gov.pk) (achievements section for 2016-2017).

<sup>69</sup> [www.pta.gov.pk](http://www.pta.gov.pk) (achievements section for 2015-2016).

administrative costs) from usage fees (based on either market-determined or administratively-calculated economic value). Spectrum pricing may also include the possibility of setting fees in favor of the new or smaller operators. Finally, including the possibility of spectrum trading and secondary markets in the regulatory framework can allow for efficient spectrum use over time.

56. **The Government only offered three licenses for 3G spectrum despite there being five operators in the market.** The auction generated \$1.1 billion USD but artificially limited the supply of spectrum to the market. This contributed to eliminating one of the operators from the market and played a key role in the Mobilink-Warid's merger. In mobile markets spectrum concentration may lead to market share concentration; in effect, data suggests that there could be correlation between HHI for spectrum allocation and market shares (on subscribers) after the merger approved by CCP July 2016 (Figure 25).

**Figure 25: HHI spectrum & market shares (2003-2013)**



Source: PTA, GSM. Own elaboration

Notes: (a) In the market period R2, market concentration (based on market share for subscriptions) HHI oscillates, increasing during the first quarters though the effects of firm entry, Zong, seemed to start having an effect in the last quarters of this period. (b) The trend towards lower market concentration gets stressed during market period R3. (c) In both periods, R2 and R3, the HHI for frequency allocation remained the same. (d) Market period R4 and R5 kept low the HHI for concentration in 2G market, with quite small variations in the HHI for frequency allocation. (e) During the market period R6, there are changes towards the HHI concentration index for frequency allocation and 2G market concentration. (f) Taking the HHI average over those periods for frequency allocation and market share, there is a non-linear trend which seem to point out to further HHI concentration level in both cases. The predicted trend, however, still need to be seen in the upcoming quarters. (g) Note that in the market period R6, there is a different impact from the merger approved in July 2016, between firms Jazz and Warid, as to the new spectrum assignment to firm Jazz in May 2017, which originally attempted to be sold in April 2014 (regulatory-market period R5), but only got a successful bid three years later. (h) It is also important to note that as time goes by, and the firms develop new business by exercising their transmission, commutation, and interconnection rights over their new awarded frequencies, data to be examined carefully will be from the 3G and 4G markets.

**57. In order to boost the efficiency in spectrum use, the Telecommunications Policy describes a series of market-based mechanisms that are to be implemented.**

Spectrum strategies that are to be adopted under the Telecommunications Policy 2015 shall include: (i) auctioning of spectrum with an indication of approximate timescales, as an attempt to bind the authorities to keep with pre-determined timelines; (ii) spectrum to be subject to Administrative Incentive Pricing (AIP); and (iii) spectrum subject to spectrum trading and/or other market mechanisms. AIP should reflect the opportunity cost of spectrum to encourage efficient use of spectrum and will be introduced for congested spectrum that has not been subject to an auction (e.g. microwave spectrum). Where the use of AIP is considered to be inadequate, the Telecommunications Strategy supports the use of administrative cost recovery (ACR), with price reflecting the administrative costs incurred. In addition, it is stated that spectrum should be re-farmed when spectrum has not been utilized or has been inefficiently used.<sup>70</sup> Finally, and in tandem with the introduction of market-based mechanisms in spectrum management, the Telecommunications Policy also establishes that unlicensed spectrum be used for fixed access and backhaul by LL and Class Value Added Service (CVAS) licensees and that it will be made available in a manner consistent with ITU-R Radio Regulations.<sup>71</sup>

**58. Subsequent to the Telecommunications Policy, 2015, the PTA has approved a Spectrum Trading Framework.**<sup>72</sup> In accordance the Telecommunications Policy, only spectrum that has been acquired through a pricing arrangement (e.g. auction) or subject to AIP can be subject to trading.<sup>73</sup> This risks leaving, for instance most spectrum held by public authorities and spectrum holdings subject to administrative cost recovery outside of the trading framework, even though they represent spectrum categories most likely to be ‘hoarded’ or inefficiently used. Another important restriction on spectrum trading concerns the prohibition of trading spectrum between different types of license holders.<sup>74</sup> Underpinning these prohibitions are both reasons pertaining to interference risks, as well the MoIT’s view that spectrum trading should not impact the “*the basic value of the different categories of spectrum*”. However, it would be worth reconsidering the latter prohibition when it is justified by reasons other than interference, as long as the acquirer or lessee complies with FAB’s eligibility requirements. The Framework allows for the following types of spectrum trading: (i) transfer, i.e. outright sale of rights and obligations; (ii) leasing; and (iii) swapping.<sup>75</sup> Prior to the trading, interested parties ought to apply before the PTA, with intimation to FAB.<sup>76</sup> The Framework also establishes a spectrum cap for spectrum trading, by determining that licensees cannot surrender more than 75% of the spectrum they hold.<sup>77</sup> Besides the situations of spectrum trading, the Framework also imposes the obligation to file a merger notification with the PTA whenever a licensee is either acquired or sold.<sup>78</sup> In practice, this creates an additional framework for merger review in the mobile telecoms sector, in addition to the merger control systems of the Competition Act, 2010, (the Draft Competition Rules which haven not been adopted gave PTA the power to prohibit mergers that substantially lessen competition in the market).<sup>79</sup> However, and

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<sup>70</sup> Telecommunications Policy, 2015, Section 8.3.

<sup>71</sup> Telecommunications Policy, 2015, Section 8.13.

<sup>72</sup> PTA, Spectrum Trading Framework, November 2016.

<sup>73</sup> Telecommunications Policy, 2015, Section 8.15.7.

<sup>74</sup> Telecommunications Policy, 2015, Section 8.15.8.

<sup>75</sup> Spectrum Trading Framework, Section 4.

<sup>76</sup> Spectrum Trading Framework, Section 5.

<sup>77</sup> Spectrum Trading Framework, Section 6(c).

<sup>78</sup> Spectrum Trading Framework, Section 10.

<sup>79</sup> Draft Competition Rules, Part IV.

contrary to the latter, the Spectrum Trading Framework does not set forth the substantive criteria that determines the cases in which the PTA may prohibit a merger or acquisition involving a spectrum licensee.

**59. Following the same line of improving the efficient use of spectrum in Pakistan, PTA also developed a Framework for Spectrum Sharing in 2018.**<sup>80</sup> Spectrum sharing relies on a number of radio technological developments that allow the use of the same frequency by multiple users while avoiding interference (e.g. TV white spaces). Contrary to the Spectrum Trading Framework, spectrum sharing can take place between any licensees for the same or different service(s),<sup>81</sup> provided that the relevant license permits sharing,<sup>82</sup> or in case MoIT specifically authorizes the sharing to take place on public interest grounds.<sup>83</sup> Spectrum sharing may be of three types: equal rights between all licensees; protection of primary users against interference caused by usage of shared spectrum by secondary users; and authorization of secondary users subject to the condition that it does not cause interference or degrade quality of service to the primary user.<sup>84</sup> Spectrum sharing is designed in a way similar to spectrum trading, i.e.: primary licensee and secondary users are required to enter into an agreement, that is to be submitted to the PTA, specifying the spectrum to be shared, type of sharing, duration, location and time for sharing.<sup>85</sup> Hence, spectrum sharing depends on the private autonomy of the parties involved as it is still based on a property right rule. Alternatively, Pakistan should consider developing a framework for mandatory spectrum sharing independently from the will of the licensee; in such situation, uses of the licensed spectrum holding which did not interfere with the primary user could be allowed subject to a liability rule should harmful interference occur.

**60. Furthermore, a framework governing unlicensed spectrum is not yet in place, but this becomes increasingly important in light of recent technological developments, such as the Internet of Things (IoT), which relies on unlicensed spectrum.** The development of a framework for unlicensed spectrum is in line with the Telecommunications Policy, 2015, which determines that *“License-exempt spectrum will be made available in a manner consistent with ITU-R Radio Regulations. Devices will be type approved, conform to international standards or those published by PTA and access will be on a non-interference and non-protection basis.”*

#### E. Cross-cutting Bottlenecks in Pakistan’s Mobile Telecom Value Chain that Hinder Service- and Facilities-Based Competition

- i) The institutional framework underpinning PTA and Frequency Allocation Board (FAB) could be strengthened in order to adequately shield them from undue private and public influence

**61. Governments are typically responsible for setting market rules that provide firms with the ability and incentives to enter, compete and expand in markets, thus**

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<sup>80</sup> PTA, Spectrum Sharing Framework, 2018.

<sup>81</sup> Spectrum Sharing Framework, Section 1.

<sup>82</sup> Spectrum Sharing Framework, Section 2.

<sup>83</sup> Spectrum Sharing Framework, Section 3.

<sup>84</sup> Spectrum Sharing Framework, Section 4.

<sup>85</sup> Spectrum Sharing Framework, Section 6.

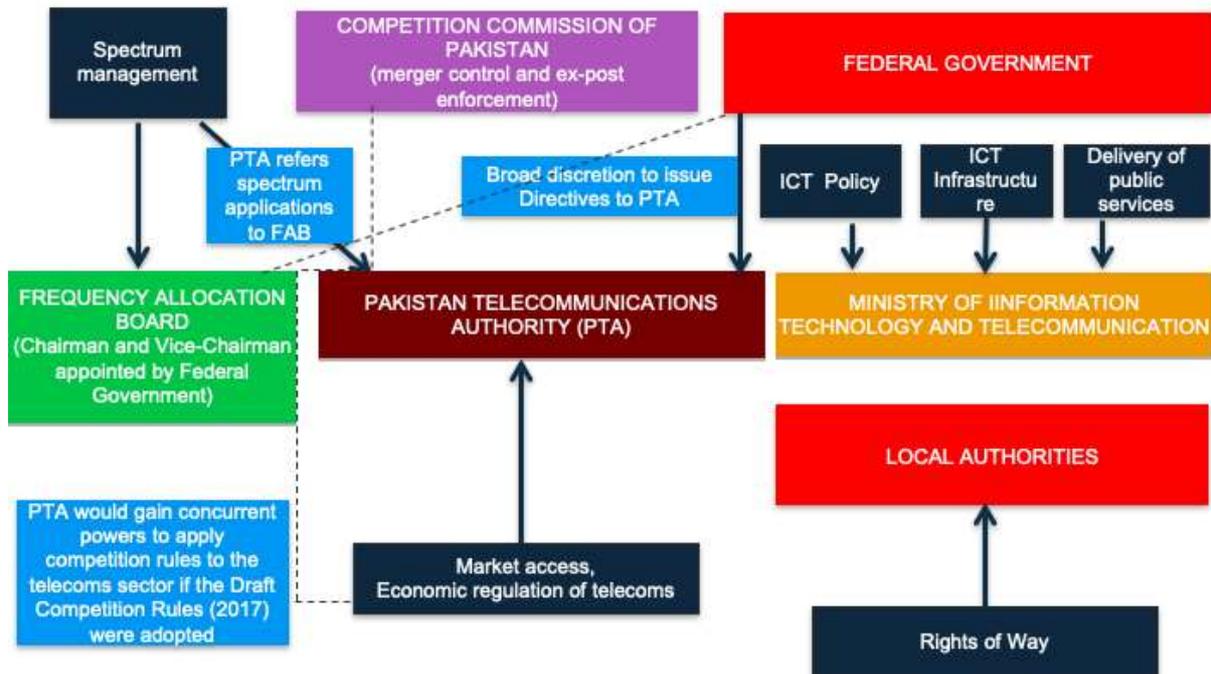
**generating benefits for users.** On the other hand, competition can be constrained when there is a lack of pro-competition Government interventions that can foster entry and ensure a level playing field between firms. In particular, anticompetitive outcomes along the supply chain can be facilitated when Government interventions (or the lack of interventions): (i) limit entry and facilitate dominance by increasing concentration and reinforcing dominant positions; (ii) facilitate collusion or restrict firms' choice of strategic variables; or (iii) provide certain firms with an undue advantage or protect vested interests. On top of mitigating or eliminating substantive regulations that result in anticompetitive outcomes, it is paramount to develop an institutional framework that shields regulators from undue private and public influence.

62. **Drawing on international best practices, it is possible to identify a series of entry points that help build an institutional framework that would be shielded from undue external influence from the private and public actors.** A key aspect of the independence of a sector regulator is the ability to act without day-to-day management of a minister or the political bodies of government. This includes the power to make final decisions with direct effect on firms that engage in anticompetitive behavior. Only a high degree of independence helps insulate regulators from political pressures, cronyism and interference with their core mandate to safeguard competition. Technical independence may be compromised when: (i) a regulator is a department in a line ministry, (ii) a line ministry can revoke, has veto powers or has the final say on decisions and cases, (iii) the line ministry is responsible for industry matters, which might conflict with the pursuit of regulatory goals. Independence can also be strengthened through a series of other rules and practices. Having a Board with multiple members instead of a single commissioner as Head of the regulator reduces the risks of private or public influence. Moreover, it allows for a greater pool of skills and therefore increases the likelihood of higher quality decisions. The law should also establish the qualifications necessary to become a Board member (ideally, expertise in competition law or economics).<sup>86</sup> Separation between investigation and decision-making functions can provide additional protections against undue influence from both public and private entities.

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<sup>86</sup> Jenny, F. 2016. *The Institutional Design of Competition Authorities: Debates and Trends*. In: Jenny F., Katsoulacos Y. (eds) *Competition Law Enforcement in the BRICS and in Developing Countries*. International Law and Economics. Springer, Cham, pp. 30-31.

**Figure 26: Mobile communications’ institutional framework in Pakistan**



Source: Authors’ elaboration

ii) The telecommunications regulatory framework would benefit from clearly establishing the “three-criteria-test” as the trigger for imposing ex ante asymmetric remedies

63. **Pakistan’s telecoms regulatory framework contains a presumption of significant market power (“SMP”) based on the existence of a 25% market share, which may unduly impose regulatory burdens on operators without market power.** Under the Telecommunications Rules, an operator is presumed to have SMP if it holds a market share greater 25% in a particular telecommunications market.<sup>87</sup> This presumption is rebuttable, meaning that the PTA can establish that an operator holds (or lacks) SMP independently from its actual market share. In such case, the PTA shall take into consideration the operator's ability to influence market conditions, its turnover relative to the size of the relevant market, its control of the means of access to customers, its access to financial resources and its experience in providing telecommunication services and products in the relevant market.<sup>88</sup>

64. **In line with the Telecommunications Policy, in 2017, the MoIT developed a draft regulatory framework with all the competition rules applicable to the telecoms sector.**<sup>89</sup> These competition rules, which have not been adopted, would have created a mechanism for market analysis, determining which operators have SMP and what remedies should be applied ex ante or ex post.

<sup>87</sup> Telecommunications Rules, 2000, Section 17(1).

<sup>88</sup> Telecommunications Rules, 2000, Section 17(2).

<sup>89</sup> MoIT, Draft Pakistan Telecommunication Competition Rules, 2017.

65. **The Draft Pakistan Telecommunication Competition Rules (2017) defined SMP as the ability an operator has to materially affect the terms of participation** (having regard to price and supply) in a relevant market, either because it controls an essential facility or by virtue of its market position.<sup>90</sup> Albeit this definition, the Draft Rules also maintain a rebuttable presumption of SMP for operators with a share of 40% or above in a given relevant market.<sup>91</sup> This presumption can be rebutted when the PTA makes a finding that a market is effectively competitive.<sup>92</sup> When the PTA makes a finding on the existence of SMP regardless of the market share held by the operator, it may consider the following factors when determining the existence of SMP:

- a. Number of licensees;
- b. Pricing behavior;
- c. Control of an essential facility;
- d. Availability of reasonable substitutable services;
- e. Barriers to entry and expansion;<sup>93</sup>
- f. Technological superiority;
- g. Countervailing buyer power;
- h. easy or privileged access to capital market and financial resources;
- i. product or service diversification;
- j. economies of scale and scope;
- k. highly developed distribution and sales network;
- l. bundling of products/services;
- m. vertical integration;
- n. lack of active competition on non-price factors;
- o. excess profitability;
- p. Barriers to consumer switching.<sup>94</sup>

66. **Pakistan's regulatory framework lacks clear criteria governing the imposition and sunset of *ex ante* asymmetric regulation on operators with SMP.** Pursuant to the Draft Competition Rules, once PTA has identified operators with SMP in a specific market, it shall impose appropriate specific regulatory measures.<sup>95</sup> Remedies that can be imposed on operators with SMP include: (i) transparency obligation in terms of access and interconnection; (ii) obligation of non-discrimination; (iii) accounting separation; (iv) obligation to provide wholesale access; (v) obligation to give access to specific network facilities; and (vi) price control and cost accounting obligations – including the requirement to apply cost orientation - for example this could include Long Run Incremental Cost (LRIC) based interconnection charging.<sup>96</sup> The existence of SMP must be reviewed every two years in order to avoid scenarios of over-regulation, which can reduce the incentives to invest and chill innovation in the market.<sup>97</sup> Finally, according to the Telecommunications Policy 2015, should a market be subject to the competition rules which are to be adopted for the telecoms sector, wholesale and price regulation will be entirely removed.<sup>98</sup> However, the existing regulatory framework fails

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<sup>90</sup> Draft Pakistan Telecommunication Competition Rules, 2017, Section 2(v).

<sup>91</sup> Draft Pakistan Telecommunication Competition Rules, 2017, Section 9(1).

<sup>92</sup> Draft Pakistan Telecommunication Competition Rules, 2017, Section 9(2).

<sup>93</sup> Draft Pakistan Telecommunication Competition Rules, 2017, Section 9(3).

<sup>94</sup> Draft Pakistan Telecommunication Competition Rules, 2017, Section 9(5) and (6) for single and collective dominance respectively.

<sup>95</sup> Draft Pakistan Telecommunication Competition Rules, 2017, Section 9(4).

<sup>96</sup> Telecommunications Policy, 2015, para. 5.1.9.

<sup>97</sup> Draft Pakistan Telecommunication Competition Rules, 2017, Section 9(8).

<sup>98</sup> Telecommunications Policy, 2015, para. 5.1.8.

to make any mention to the sunseting of ex ante regulation once the market at stake becomes effectively competitive. In this regard, it would be useful to clearly adopt the three criteria test in determining the markets that should be subject to regulation. According to this test, a market may justify the imposition of ex ante regulatory obligations if the following three criteria are cumulatively met:

- q. high and non-transitory structural, legal or regulatory barriers to entry are present;
  - r. there is a market structure which does not tend towards effective competition within the relevant time horizon, having regard to the state of infrastructure-based competition and other sources of competition behind the barriers to entry;
  - s. competition law alone is insufficient to adequately address the identified market failure(s).<sup>99</sup>
- iii)* Lack of clarity of the regulatory framework governing the application of merger control rules and the ex post enforcement of competition law strengthens the dominance of operators with SMP and does not deter anticompetitive behavior

**67. There are several possible ways to harmonize the enforcement of competition law with the enforcement of sector-specific regulation (see Table 3 below for a comparison of CCP and PTA's competition law enforcement powers).** There can be concurrent jurisdiction between the competition agency and the sector-specific regulator. This is the case in the UK, where sector-specific regulators, in addition to their own specific regulatory powers, are competent to deal with anti-competitive agreements or abuses of a dominant position which relate to activities in their respective sectors concurrently with the Competition and Markets Authority (CMA).<sup>100</sup> In light of this overlap, sector-specific regulators are required to consider whether the use of Competition law is more appropriate before using their enforcement powers. In order to avoid institutional conflicts, the CMA and Regulators must put in place arrangements for sharing with each other certain minimum kinds of information. In this context, the CMA assumes a leadership role as the entity: (i) competent to issue guidance on commitments and to make procedural rules; (ii) competent to solve disputes with regulators; (iii) entrusted with the power to transfer a case from one authority to another or to take over a case; and (iv) given the duty to report annually on the use of concurrent powers in the regulated sectors. Another solution has been to incorporate competition rules directly into the sector-specific legislation and then give the regulators explicit powers to enforce such rules (e.g. telecommunications and energy regulators in Germany). Several countries have seen competition and sector regulators developing memoranda of understanding (MoUs) on how they will exercise their functions when dealing with issues involving overlaps. Such protocols are common in Europe (Albania, Bulgaria, Croatia, Czech Republic, Hungary, Portugal, etc.), as well as in the U.S. (The Federal Trade Commission and the Department of Justice often advise sector specific regulators on non-merger matters with a competition impact) and in some African countries, including Kenya and Zambia.

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<sup>99</sup> Cave, Martin & Stumpf, U & Valletti, Tommaso. (2006). A review of certain markets included in the Commission's Recommendation on Relevant Markets subject to ex ante Regulation. An independent report to the DG Information, p. 8.

<sup>100</sup> Competition and Markets Authority, Regulated Industries: Guidance on concurrent application of competition law to regulated industries, March 2014.

68. **The Telecommunications Policy 2015 put forward a system of competition law enforcement where the telecommunications regulator is bestowed with the power to apply and enforce competition rules to the telecoms sector.**<sup>101</sup> In this regard, the CCP issued a Policy Note to the Government of Pakistan, recommending the review of the Telecommunications Policy sections and asserting its sole power to apply the competition rules of the Competition Act, 2010.<sup>102</sup> In effect, Article 18(b) of the Competition Act empowers the CCP to apply the competition rules to all sectors of the economy, telecommunications included.
69. **Contrary to the CCP’s Policy Opinion, the MoIT went ahead with the development of Draft Pakistan Telecommunication Competition Rules in 2017 (“Draft Competition Rules”), even though their approval is still pending.** The Draft Rules establish a parallel set of prohibitions to engage in anticompetitive conduct in the telecommunications sector.<sup>103</sup> In particular, Section 3(1) prohibits agreements that prevent or lessen or are likely to prevent or lessen competition substantially in a market, whilst Section 7(2)(d) prohibits the abuse of a dominant position in the market.
70. **Whilst the Competition Act sets forth criteria for the CCP to grant exemptions to anticompetitive agreements in a specific set of circumstances, the Draft Rules appear to establish open-ended criteria that leaves much room to discretion in exempting anticompetitive conduct.** Pursuant to Section 9(1) of the Competition Act, the Competition Commission may give exemptions in respect of agreements which substantially contribute to: (i) improving production or distribution; (ii) promoting technical or economic progress, while allowing consumers fair share of the resulting benefit; or (iii) the benefits of that clearly outweigh the adverse effect of absence or lessening of competition. Therefore, hardcore competition restraints shall be deemed to be always prohibited since they are highly unlikely of creating any benefit to consumers. Hardcore horizontal restraints typically lead to higher prices, reduced output and an inefficient allocation of resources, thus invariably reducing consumer welfare. In such cases, the harm to competition always outweighs any potential consumer welfare gains. In this regard, the Exemptions Regulations clearly establish that agreements, such as price fixing are regarded as having an appreciable adverse effect on competition.<sup>104</sup> On the opposite side of the spectrum, the Draft Rules appear to explicitly enable the PTA to fix prices or restrict output,<sup>105</sup> co-ordinate bids<sup>106</sup>, or to otherwise prevent or lessen competition substantially in a market.<sup>107</sup> Thus, the Draft Rules seem to allow for the PTA to award competition exemptions even when hardcore agreements are at stake.
71. **The Draft Competition Rules also establish a separate system for merger control that appears to override the CCP’s powers to review mergers in all sectors of the economy.**<sup>108</sup> Pursuant to Section 14, A licensee shall not merge/ acquire any other

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<sup>101</sup> Telecommunications Policy, 2015, p. 8.

<sup>102</sup> Telecommunications Policy, 2015, Section 5-1; CCP Policy Note November 25, 2016.

<sup>103</sup> Draft Pakistan Telecommunication Competition Rules, 2017, Part II.

<sup>104</sup> Exemption Regulations, Schedule, Form A, Section 5.1.1.

<sup>105</sup> Draft Rules, Section 3(2)(a).

<sup>106</sup> Draft Rules, Section 3(2)(b).

<sup>107</sup> Draft Rules, Section 3(2)(e).

<sup>108</sup> Competition Act, 2010, Section 11.

licensee without prior approval and/or obtaining No Objection Certification (NOC) from the PTA with regard to adverse effect on provision of licensed services along with other licensees.<sup>109</sup> The merger shall be prohibited if it will prevent or lessen, or is likely to prevent or lessen, competition substantially in a market.<sup>110</sup>

**Table 3: Competition law enforcement competences**

Competences		CCP (Competition Act, 2010)	PTA (Draft Competition Rules, 2017)
<b>Ex ante</b>	SMP regulation	No	Yes Section 2(v): SMP consists of the ability an operator has to materially affect the terms of participation (having regard to price and supply) in a relevant market, either because it controls an essential facility or by virtue of its market position  Section 9(1): 40% rebuttable presumption of SMP  Section 9: Power to impose remedies on operators with SMP subject to a 2-year review
	Merger control	Yes (Section 11) – prohibits mergers which substantially lessen competition by creating or strengthening a dominant position in the market	Yes: dual system: 1) Section 16: prohibits mergers which substantially lessen or prevent competition in the market  2) Spectrum Trading Framework, 2016 (Section 10): mergers involving a spectrum licensing must be filed with the PTA under intimation to FAB (no substantive test to prohibit the merger is provided)
<b>Ex post</b>	Abuse of dominance	Yes (Section 3)	Section 7(2)(d)
	Anticompetitive agreements	Yes (Section 9)	Section 3(1)
	Exemptions	Yes (Sections 5-9) – agreement must substantially contribute to: a) improving production or distribution b) promoting technical or economic progress, while allowing consumers fair share of the resulting benefit c) the benefits of that clearly outweigh the adverse effect of absence or lessening of competition	Yes (Section 3(2), (b) and (e)) – PTA can exempt all types of anticompetitive agreements, including hardcore agreements consisting of price fixing, quantity fixing and bid rigging

Source: Authors' elaboration.

**72. Should the Draft Competition Rules be adopted, the CCP and the PTA would benefit from formalizing to a greater extent the exercise of their competences in**

<sup>109</sup> Draft Rules, Section 14(1).

<sup>110</sup> Draft Rules, Section 16(1).

**order to prevent any risk of conflict.** Collaboration between competition authorities and sector regulators is key to enhance the effectiveness and efficiency of their actions to the benefit of consumers. Having a common understanding of the market and competition instruments and recognizing the value that each authority brings to the table, are essential for collaboration. MoUs delineating respective areas of intervention are critical to ensure effective resource allocation while avoiding contradicting decisions and potential discretionary policy application (e.g. merger in a regulated sector). Such MoUs should govern the effective exercise of their responsibilities and establish mechanisms for practical cooperation in the exercise of those responsibilities, including the exchange of information, mutual support, general cooperation and the use of the sector-specific expertise of the PTA in respect of competition law investigations. In addition to MoUs, CCP and PTA should consider establishing working groups on competition issues and exchanging staff in order to develop expertise in the application of competition law in telecoms. In this regard, the experience of the UK can be used as best practice in shaping the development of the relationship between CCP and PTA (see Box 5).<sup>111</sup>

**Box 5: Concurrent application of competition rules by CMA and the telecoms regulator in the UK**

The UK has a system of concurrent application and enforcement of enforcing of competition law. The CMA has a coordination and leadership role in relation to concurrent competition law application and enforcement, whilst sector-specific regulators may perform the following roles:

- (i) consider complaints about possible infringements of the competition rules;
- (ii) impose interim measures to prevent significant damage;
- (iii) carry out investigations both on the Regulator’s own initiative and in response to complaints (Regulators have the same powers as the CMA to require the production of documents and information, to interview individuals that have a connection with a business under investigation and to search premises);
- (iv) impose financial penalties, taking account of the statutory guidance on penalties issued by the CMA;
- (v) give and enforce directions to bring an infringement to an end;
- (vi) accept commitments that are binding on an undertaking;
- (vii) accept commitments that are binding on an undertaking;
- (viii) adopt confidential informal advice and publish an opinion; and
- (ix) agree to settle a case where the business under investigation is prepared to admit that it has breached.

In terms of hierarchy in enforcing the competition rules, the Concurrence Regulations contain provisions for the co-ordination of the performance by the CMA and the Regulators of their concurrent functions. The general principle in terms of case allocation is that the CMA or the relevant Regulator will be responsible for a case depending on which of them is better or best placed to do so. The factors to be considered in determining which authority deals with the matter shall include:

- (i) the knowledge of the sector;
- (ii) whether the case affects more than one sector;
- (iii) previous contacts between the parties and the CMA or Regulator;
- (iv) previous experience in dealing with the relevant firms; and
- (v) whether the CMA considers it necessary to take over the case in order to develop UK competition policy or to provide greater deterrent and precedent effect for the benefit of competition and consumers, either within the relevant regulated sector, or more widely.

Furthermore, the CMA alone, however, has powers to issue guidance on penalties, to issue guidance on commitments and to make procedural rules. In what concerns merger control in the telecoms sector, the CMA will take Ofcom’s views into account in reaching its conclusions in the same way as it would

<sup>111</sup> Memorandum of understanding between the Competition and Markets Authority and the Office of Communications – concurrent competition powers.

consider views from other third parties received during the course of its investigation. Ofcom shall also advise the Secretary of State when it intervenes on media public interest grounds, but the law does not create a specific statutory role for Ofcom.

*Source:* Competition and Markets Authority, Regulated Industries: Guidance on concurrent application of competition law to regulated industries, March 2014 / Concurrency Regulations contain provisions for the co-ordination of the performance by the CMA and the Regulators of their concurrent functions / CMA, Mergers: Guidance on the CMA's jurisdiction and procedure, January 2014.

- 73. To tackle the aforementioned restrictions along the mobile telecommunications value chain, a set of entry points for reform were identified and prioritized based on their importance and feasibility (see Section III below).**

### III. ENTRY POINTS FOR REFORM OF THE MOBILE TELECOMMUNICATIONS SECTOR

Recommendations	Responsibility	Priority
<b>1. Recommendations to promote entry, expansion and a level-playing field by services-based competitors</b>		
1.1. Continue the process of lowering MTRs and of obtaining cost-based data to implement a LRIC test	PTA	High
<b>2. Recommendations to promote entry, expansion and a level-playing field by facilities-based competitors</b>		
2.1. Develop a general authorization regime separate from the existing licensing regime.	Parliament and Government	High
2.1.1. Clarify the circumstances in which the number of operators can be limited, and an auction procedure followed, under the licensing regime.		
2.1.2. As a general rule, the number of operators in the market should only be restricted whenever scarce resources (e.g. specific radio frequencies), and the authorization regime should be adopted for the remaining situations.		
2.2. Develop a coherent and harmonized regime for public and private RoW, which encourages private investment in infrastructure	MoIT and PTA	High
2.3. Implement a revised framework for the sharing of passive and active infrastructure, which takes into consideration the competition implications of sharing agreements	PTA and CCP	High
2.4. Develop a framework clarifying the modes of access and pricing to backhaul spare capacity held by utilities	PTA	Medium
<b>3. Recommendations on strengthening spectrum management</b>		
3.1. Adopt binding timetables for the release and assignment of spectrum in order to make the process more expedite and aligned with market changes, as well as to prevent the awarding of undue competitive advantages.	PTA, FAB MoIT, CCP	High
3.2. Put in place safeguards against spectrum concentration so as to level the playing field between operators (e.g. spectrum caps).	PTA, FAB and MoIT, CCP	Medium
3.3. Consider expanding the Spectrum Trading Framework to spectrum holdings that were not subject to auctions or AIP.	PTA, FAB and MoIT, CCP	Medium
3.4. Consider expanding the Spectrum Trading Framework to include situations where sharing does not depend on an agreement by the license.	PTA, FAB and MoIT, CCP	
3.5. Consider developing a framework for unlicensed spectrum in line with the orientations provided by the Telecommunications Policy, 2015.	PTA, FAB and MoIT	Medium

4. Cross-cutting recommendations		
4.1. Harmonize the competition rules established in the Competition Act and in the Draft Competition Rules enacted by the MoIT	CCP, PTA, FAB and MoIT	High
4.1.1. Eliminate the possibility of the PTA giving exemptions to hardcore horizontal agreements in the telecoms sector		
4.1.2. Develop an MoU between the CCP and the PTA which clarifies the cooperation modalities in enforcing competition rules in the telecoms sector should the Draft Competition Rules be adopted		
4.2. Strengthen the institutional guarantees of PTA and FAB in order to strengthen their technical independence and ensure the integrity of their decisions	Government and Parliament	Medium
4.2.1. Implement a transparent and technical selection process to appoint board members.		
4.2.2. Clarify the circumstances in which the Government can directly intervene in telecom markets bypassing PTA and FAB.		
4.3. Undertake a functional review of PTA and FAB to identify areas for making its mandate more effective.		
4.4. Focus regulation on markets that need it. Markets should meet the 'three criteria test': (1) high and non-transitory barriers to entry; (2) market structure does not tend towards effective competition; (3) inadequacy of competition law to tackle market failure.	Government and Parliament	High
4.4.1. Ensure that the markets with SMP players are periodically reviewed.		
4.5. Adopt the bylaws necessary to ensure the effectiveness of the Telecommunications Policy 2015 (e.g. development of a general authorization regime and a regime for unlicensed spectrum)	PTA, CCP, FAB, MoIT,	High

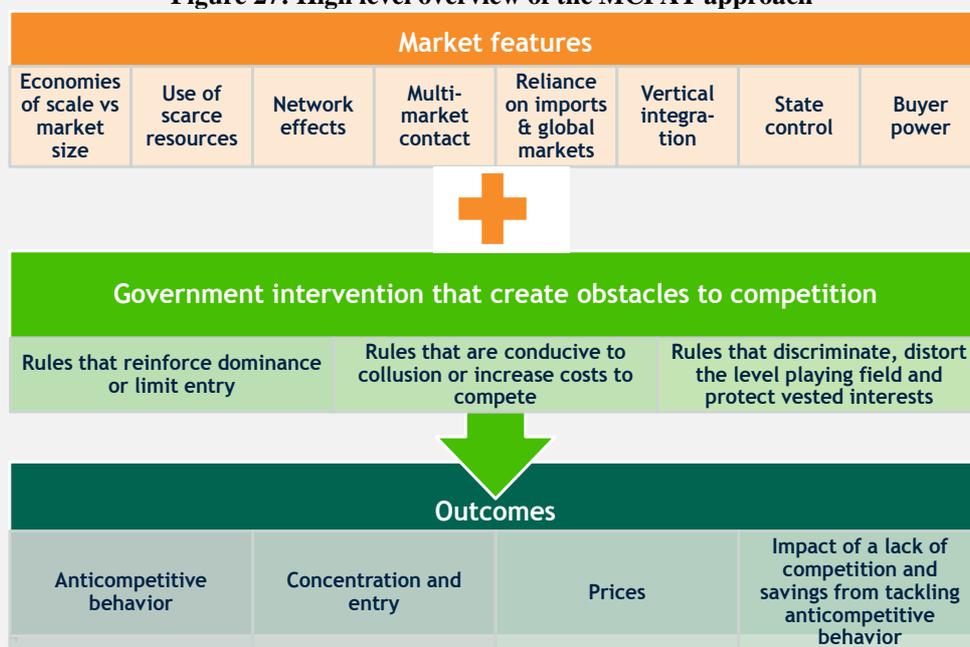
## Annex I: The MCPAT Framework

### Box 6: The World Bank Market and Competition Policy Assessment Tool (MCPAT)

The MCPAT is a methodological instrument of analysis developed by the WBG Markets and Competition Policy team to identify specific problems at the market level and prioritize competition tools accordingly—markets to be prioritized as well as the tools vary by country – and in some cases, complement each other. Having a practical nature and a focus on implementation, this methodology has been developed based primarily on the experience of the WBG Markets and Competition Policy Team implementing pro-competitive reforms in more than 45 developing countries. Therefore, The MCPAT provides a standardized and comprehensive tool with which to understand i) competition dynamics created by market feature (including supply-side characteristics and buyer characteristics) and ii) identify and assess the potential anticompetitive effects of Government intervention in markets. The interaction between these two elements can then be analyzed to determine the risk of anticompetitive behavior, both in terms of collusion and exclusionary abuse of dominance.

This assessment can then inform the development and prioritization of effective strategies to promote competition through changes in policies, regulations, and rules.

**Figure 27: High level overview of the MCPAT approach**

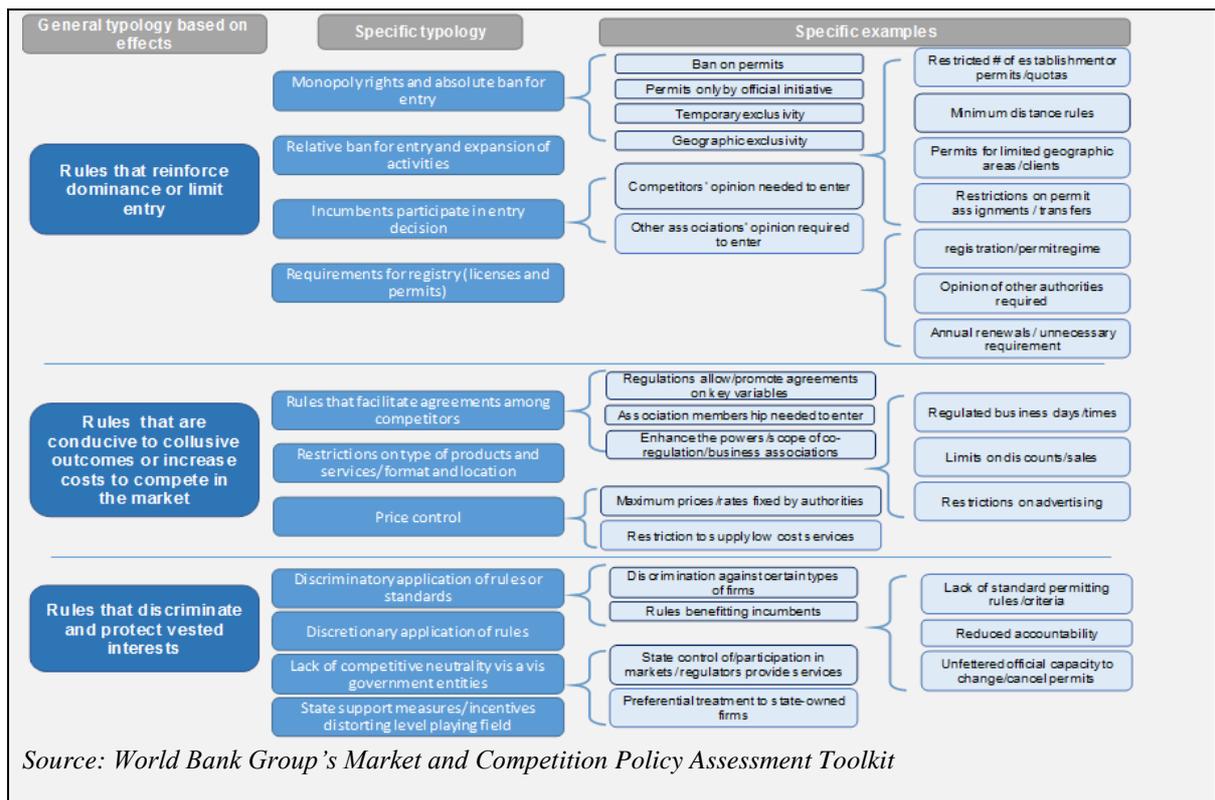


As described in Figure 28, the MCPAT builds on the identification of those rules and regulations that may have anticompetitive effects on the basis of the following typology:

- (1) Rules that reinforce dominance or limit entry;
- (2) Rules that are conducive to collusive outcomes or increase costs to compete in the market;
- (3) Rules that discriminate and protect vested interests.

Within each of these categories, specific sub-typologies of rules have been identified and illustrated with specific examples. This typology feeds into a holistic step-by-step methodology to promote competition reforms.

**Figure 28: MCPAT Typology of competition restrictions**



Source: World Bank Group's Market and Competition Policy Assessment Toolkit

## Acronyms:

ANCOM	Autoritatea Nationala pentru administrare si reglementare in comunicatii (Romanian Regulator for Communication)
BTS	Base Transceiver Stations
CAPEX	Capital Expenses
CMA	Competition and Markets Authority
CVAS	Class Value Added Service
FAB	Frequency Allocation Board
FDC	Fully Distributed Cost
GDP	Gross Domestic Product
GSM	Global System for Mobiles
HHI	Herfindahl-Hirschman Index
ICT	Information and Communications Technologies
IoT	Internet of Things
ITU	International Telecommunication Union
ITU-R	International Telecommunications Union - Radiocommunications
LL	Local Loop
LLU	Local Loop Unbundling
LRIC	Long Run Incremental Cost
LTE	Long Term Evolution
MCPAT	Markets and Competition Policy Assessment Toolkit
MoIT	Ministry of Information Technology and Telecommunication
MTR	Mobile Termination Rates
MVNO	Mobile Virtual Network Operator
NOC	No Objection Certificate
PTA	Pakistan Telecommunication Authority
RCC	Romanian Competition Council
RoW	Rights of Way
SMP	Significant Market Power
TAGR	Trust for Accelerated Growth and Reforms
WLL	Wireless Local Loop