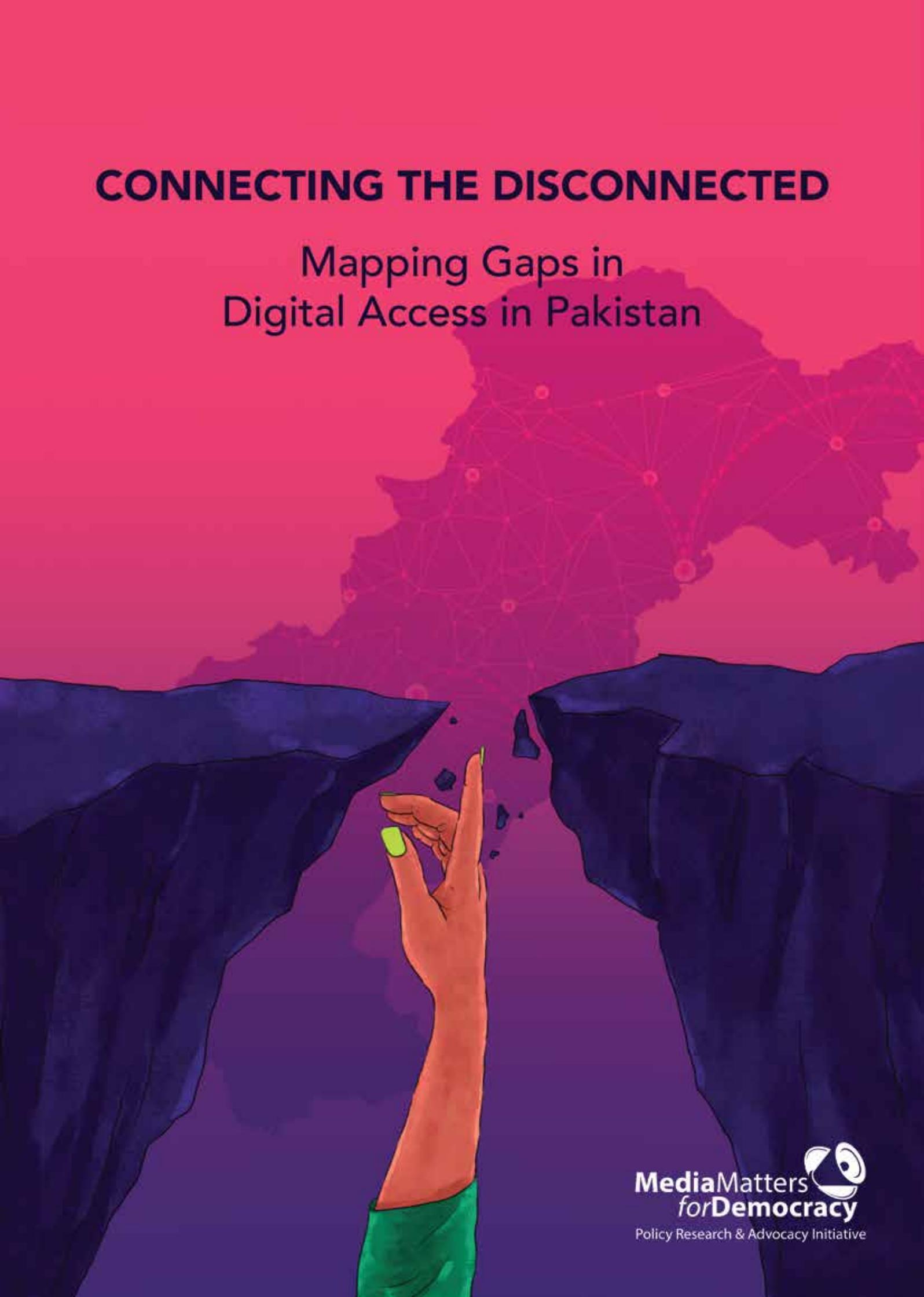


CONNECTING THE DISCONNECTED

Mapping Gaps in Digital Access in Pakistan



Connecting the Disconnected:

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Research Team:

Hija Kamran
Sadaf Khan
Salwa Rana
Zoya Rehman
Maria Malik

Review and Edit

Hija Kamran

Format Design:

Aniqa Haider

Published by Media Matters for Democracy in May 2022.



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List of Abbreviations

A4Ai	Alliance for Affordable Internet
AJK	Azad Jammu and Kashmir
FANA	[Gilgit-Baltistan] Federally-Administered Northern Areas
FATA	Federally Administered Tribal Areas
GB	Gilgit-Baltistan
GST	Goods and Services Tax
NITB	National Information Technology Board
PTA	Pakistan Telecommunication Authority
USF	Universal Service Fund
ICT	Information and Communication Technology



Affordable and reliable internet has become a quintessential part of our lives: a key arena for exercising one's constitutional rights, as well as for supporting economic, social and human development. Moreover, access to an internet connection with sufficient bandwidth is essential for the development of an information society. However, internet access in Pakistan is far from being universal and meaningful. A significant number of people across Pakistan either do not have access to the internet or are unable to use it to its full potential owing to lack of infrastructure, affordability and digital literacy.

This research aims to map the situation for open and equitable internet access in Pakistan, by exploring the barriers people experience in accessing digital technologies. It investigates the deepening digital divide in Pakistan, as the increasing ubiquity of the internet is leaving those who remain unconnected even more marginalised in a world that is becoming more digitised by the day.

Experiences of marginalised people include but are not limited to a lack of access to basic services and day-to-day transactions – from governments and businesses to educational amenities — that are available online and make people's lives considerably easier. Those who do not have internet access are thereby excluded from the 'new' world of information and communications courtesy digital technologies. Those individuals are unable to enjoy the social, economic, and civic benefits stemming from digital connectivity.

Universal and equitable access to the internet should be considered a right, not a luxury or privilege, as it provides human beings the ability to continue exercising their rights to freedom of expression and association. Hence, through this research, we aim to delve into the legal and regulatory framework of internet governance in Pakistan, and the extent to which universal and equitable access to the internet is guaranteed therein. The reach, scope and evolution of this framework is an important factor to consider, as it lays bare the extent of access to broadband and cellular infrastructure in Pakistan.

Information has become a key commodity in today's digitised world. Who has access to this information, and how, is a question that comes up perennially in debates around internet access. Who produces and disseminates knowledge is a question of equity that is inextricably tied to the issue of internet access, with political and socioeconomic consequences, and a question very much related to existing social relations and orders as well.

It would also be important to assess whether cost barriers are being addressed in Pakistan, perhaps through zero-rating programs, and whether diverse and uncensored content is accessible in our online spaces that would go a long way toward bridging the digital divide. In short, it is essential to evaluate what steps are being taken to bring people across Pakistan more closely to the technology era and provide access to valuable tools for economic development, social engagement, and public expression.

It is important to take note of the fact that invisibility online starts from the very beginning: that is, from the very development and planning of internet infrastructure. It extends to connectivity and access, and continues through content creation. An important question, then, is this: *whose* knowledge is considered worthy, reliable, and visible at each of these levels? And how does the internet create hierarchies within knowledge production itself?

Following these considerations, we aim to explore the gaps vis-a-vis internet access in Pakistan with the help of the following research questions:

Research Question 1: Does the legal and regulatory framework in Pakistan effectively deal with different aspects of universal and equitable access?

Research Question 2: How has infrastructure availability for broadband and mobile internet in Pakistan changed over the last five years?

Research Question 3: Do demographics linked to geography, socio-economic class, education and gender have a significant impact on how individuals access and experience the Internet?

Research Question 4: Does a significant proportion of Pakistani citizens have the literacy, skill and/or access to tools that allow them to make optimum use of the internet?

Facts, Figures & Context

2

According to the Pakistan Telecommunication Authority, by July 2021, Pakistan had about 76.38 million internet users, making it the 14th largest population of internet users in the world.¹

Pakistan's ICT industry has grown rapidly over the past two decades. In 2001, only 1.3% of the population used the Internet, whereas by 2006 this figure had grown to 6.5% and in 2012 to 10.0%. The number of internet users in Pakistan increased by 11 million -- that is, by 17% -- between 2019 and 2020 alone.² As of August 2020, the percentage of internet users in Pakistan amounted to 40.95%, which translates into approximately 87 million Pakistani citizens having access to the internet.³ The COVID-19 pandemic has led to this surge in internet usage.⁴

As of March 2022, Pakistan has 193 million cellular subscribers making up 87.95% of the total population, 113 million 3G/4G subscribers (51.43% of the population), and 116 million broadband subscribers (52.79% of the total population).⁵



*Figures are updated as on March 2022

PTA records a total of 87.95% of the population are cellular subscribers in the country. Source: PTA

Having said that, Pakistan has the lowest internet penetration rate in South Asia. With internet penetration at 52.79%, more than 104 million people out of an estimated population of 220 million remain disconnected from online digital resources. The 2016 report by the GSM Association (GSMA), 'Pakistan: A Digital Future', affirms these facts, and presents a lucid picture contextualising the digital divide that exists in the country.⁶ The report states,

1. Telecom Indicators, PTA, July 2021, <https://www.pta.gov.pk/en/telecom-indicators>
2. Digital 2020: Pakistan — DataReportal – Global Digital Insights <https://datareportal.com/reports/digital-2020-pakistan>
3. Ibid.
4. Internet use rose 25pc during pandemic-induced lockdowns. (2020, September 13). DAWN.COM. <https://www.dawn.com/news/1579433>
5. Telecom Indicators, (March 2022). PTA. <https://www.pta.gov.pk/en/telecom-indicators>
6. Stryjak, J., & James, H. (2016, December). Country overview: Pakistan - A digital future. GSMA. https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2016/12/Country-Overview_Pakistan_Digital-Future.pdf

divide that exists in the country. The report states, “The enablers of mobile internet connectivity: infrastructure, affordability, consumer readiness and content, all rank low in Pakistan relative to its neighbours. These enablers are critical to creating the right conditions of supply and demand for mobile internet connectivity to flourish. Pakistan therefore has one of the lowest penetration rates in South Asia.”⁷

Pakistan is an emerging mobile economy, and digital technologies are beginning to transform the way people live and work here. Digital platforms have become the primary channel for accessing public and private services for a growing number of citizens, especially in regards to the retail, transport and banking sectors. The Universal Service Fund (USF) policy for broadband services in Pakistan was introduced in 2005 with the goal of advancing teledensity and broadband penetration and building telecenters across the country. The policy envisioned that by the end of the 2000s, 85% of the total population of the country would have access to the internet, and that by the end of the mid-2010s, it would increase to 95%. Pakistan also introduced its first Digital Pakistan Policy in 2018 with the goal of uplifting the digital ecosystem in the country, by enhancing connectivity and promoting innovation, technology and e-commerce.

With the Digital Pakistan Vision of the former ruling party Pakistan Tehreek-e-Insaf (PTI) in place,⁸ one would have expected its government to prioritise universal access and acknowledge internet access as a basic human right during its tenure that lasted almost four years. The Digital Pakistan Policy guarantees the development of IT Zones and Software Technology Parks in the country’s major cities to promote digitisation. It also envisions setting up telecenters in the remote areas of Pakistan.

These developments would be welcome in a country that currently ranks 90th out of 100 countries on the Inclusive Internet Index 2021 released by the Economist Intelligence Unit (EIU), thus falling into the last quartile of the global index, and second to last in the Asia region. Furthermore, mobile broadband accounts for less than five in 10 mobile connections. Pakistan scored a paltry 39.8 in the GSMA’s latest Mobile Connectivity Index, compared to an average of 45.7 for South Asia.⁹ Nevertheless, according to EIU, it did rank the highest within the quartile in terms of ‘Affordability’ due to improvements in the competitive environment and an overall decrease in mobile phone costs.¹⁰

Category of Internet Access	EIU’s Ranking
Availability	97th
Affordability	67th
Relevance	91st
Readiness	79th

Pakistan ranks in the last quartile on the global Inclusive Internet Index 2021. Source: EIU

7. Ibid.
 8. Digital Pakistan, <https://digitalpakistan.pk/home.html>
 9. GSMA Mobile Connectivity Index, <http://www.mobileconnectivityindex.com/>
 10. Jahangir, R. (2020, March 5). Pakistan ranked least internet inclusive country in South Asia: report. DAWN.COM. <https://www.dawn.com/news/1538509>

It must be pointed out that Pakistan, by far, has consistently had one of the largest gender gaps in the index, in regards to both mobile and internet access. According to the 2020 Mobile Gender Gap Report of the GSMA, the widest gender gap with regards to country-level trends in mobile ownership and mobile internet use is still in Pakistan, where women are 38% less likely than men to own a mobile phone and 49% less likely to use mobile internet.¹¹ According to an earlier research report of Media Matters for Democracy, 'Women Disconnected: Feminist Case Studies on Gender Digital Divide Amidst COVID-19', women who come from low income households continue to face barriers in accessing the internet in Pakistan – not only financial, but also geographical and cultural. Over 76% of women who participated in the research survey answered that internet services were unaffordable in Pakistan.¹²

Low levels of digital literacy and poor network quality in remote parts of the country are also factors that exacerbate Pakistan's digital divide. Moreover, most Internet usage in Pakistan is still in English. Some Urdu based newspapers do maintain an Urdu presence on the web; however, romanised Urdu is more commonly seen to be used online.¹³ It is crucial to note, once again, that since 2020, the coronavirus pandemic has not only affected healthcare systems in Pakistan but has also deepened the divide in internet access across the country.

In a press release dated April 2021, PTA reported, "Owing to supportive government policies, effective competition among telecom operators and PTA commitment to introduce and utilise innovative technologies, broadband subscriptions in Pakistan have reached a historic 100 million mark."¹⁴ PTA has also asserted that broadband penetration at the time stood at 43.5%, with teledensity at 82.34% which has since been increased to 87.95% in April 2022. What these figures fail to reveal is that almost half of Pakistan's population does not have access to the internet. Additionally, around 64% of Pakistan's population lives in rural areas, and with a significant rural-urban digital divide, full digital inclusivity cannot possibly be achieved unless the government takes concrete steps to ensure that the remotest areas of the country are treated equally and provided with internet access.

11. DRM. (2021, January 15). 6 in 10 women face restrictions when accessing the internet, new study finds. Digital Rights Monitor. <https://www.digitalrightsmonitor.pk/6-in-10-women-face-restrictions-when-accessing-the-internet-new-study-finds/>

12. Dawn. (2012, August 29). Urdu on the internet. DAWN.COM. <https://www.dawn.com/news/745420/urdu-on-the-internet>

13. Press Release. (2021, April 2). Mobile Broadband Subscribers Reach 100 Million Mark. PTA.

14. <https://www.pta.gov.pk/en/media-center/single-media/mobile-broadband-subscribers-reach-100-million-mark-030421>

The Universal and Equitable Access assessment is based on a framework built on six themes, including legal and policy environment, connectivity and usage, affordability, equitable access, local content and language, and ICT competencies. These themes correspond to the Accessibility related indicators in UNESCO’s Internet Universality Indicators (IUI) and explore different elements corresponding to the questions defined in the IUI framework. The IUI framework has been used as a basis to inform this research framework as the IUIs reflect a rigorous research process that explores the complexities that affect equitable and meaningful access.

The indicators are in the form of statements measured on four questions and statements each, which then explore the situation through interviews and available data. The framework includes a total of 24 questions and statements.

Assessment framework

THEME	Indicators			
Legal and Policy Framework	Universal service obligations are clearly defined in the law, with appropriate provisions for implementation of the policy.	A regulatory authority concerned with universal access is present and operational.	There is evidence that the legal and policy obligations for universal access are being implemented.	An effective strategy for facilitating public access for the disconnected population is included in the universal access policies.
Connectivity and Usage	A significant proportion of the country has operational broadband and mobile connectivity infrastructure.	A significant population of the country has access to and uses the Internet.	There is statistical evidence that the number of people who are connected to broadband Internet is steadily growing.	There is statistical evidence that the number of people who are connected to the mobile Internet is steadily growing.
Affordability	Is the cost of the Internet perceived to be a barrier to access?	Mobile handsets capable of Internet connectivity are affordable to all sections of the population.	The government makes zero rated and low cost internet access facilities available for poor and marginalised communities.	Telecommunication companies and internet service providers make available price packages appropriate for groups with low and variable incomes.

Equitable	Geographically diverse areas, urban and rural centres and all provincial regions have comparable broadband facilities.	Universal access policies are informed by statistical data regarding internet connectivity and usage among varied populations.	Specific measures are being taken to address gender digital divide.	There is a strategy in place to deal with social and cultural barriers affecting women's use of the Internet.
Local Content and Language	Effective local language processing softwares and systems are available.	Government websites, information about public services and other relevant information is easily available in local languages.	There is ongoing and significant research and development on local language processing technologies in public and private technology institutions.	There is a substantial and growing volume of content in different regional and indigenous languages, including user generated content.
Competencies	Use of ICTs digital and information literacy is a part of school curricula.	High quality STEM and ICT courses are offered at higher education levels and are easily accessible to all segments of the population.	Media and Information Literacy programs are in place, specially for citizens without formal literacy.	Educators in public and private educational institutions are well versed with ICTs and use technology skillfully.

Data Sources

To analyse the quality of internet access based on the indicators, the researchers rely largely on secondary research supplemented by primary research, using the following methods to collect data that has informed the assessment;

1. Legal & policy review
2. Literature review, specifically exploring previous research in the field
3. Interviews with relevant experts and professionals

4.1 - Legal and Policy Framework

Indicators Assessment

Legal and Policy Framework	Universal service obligations are clearly defined in the law, with appropriate provisions for implementation of the policy.
	A regulatory authority concerned with universal access is present and operational.
	There is evidence that the legal and policy obligations for universal access are being implemented.
	An effective strategy for facilitating public access for the disconnected population is included in the universal access policies.

Key Findings

While there are policies in place to promote universal access in the country, implementation strategies do not exist, creating a barrier in research and reporting on projects being carried out.

The first time the concept of public WiFis was introduced on policy level in the country was in 2015 through the Telecom Policy of Pakistan.

The Digital Pakistan Policy of 2018 also prioritises public access through telecenters and IT Zones, but implementation remains unclear.

The government has maintained that disconnected areas of tribal regions have been deprived of internet connectivity owing to security concerns, however, by the end of year 2021, internet in 6 out of 7 agencies of former FATA was restored after security clearance.

Analysis

In Pakistan, a number of policies and laws address access to the internet. In 2004, the Broadband Policy introduced the concept of universal service obligation for Pakistan and was followed by the Universal Service and Access Fund (USAF) that established the USF. Under this fund, multiple projects for broadband infrastructure are awarded to private telecommunication companies. In the past decade, universal access has been highlighted in

the 2015 Telecom Policy and the Digital Pakistan Policy of 2018 which prioritise access to the internet for everyone, however, lays down little or no details on implementation strategies. This also causes confusion in research and reporting on internet access, as it is hard to identify which projects were carried out under a specific policy.

Pakistan's Universal Service Obligations are recognised through the USAF of 2006 which establishes the USF fund and commits to providing high-speed affordable internet to unserved and underserved areas of Pakistan.¹⁵ Through the fund, the USF Board carries out open bidding to award service contracts to the most competitive telecom operator to develop internet and telecom infrastructure in areas that remain disconnected.

Prior to the establishment of the 2006 USF fund, the 2004 Broadband Policy was the first to lay down in detail the objectives and strategies for broadband access in Pakistan. It promised the development of more localised content to stimulate the demand for broadband internet connection and then addressed the issue of affordability in detail by recommending guidelines on how to make the broadband internet services affordable for the masses. To facilitate this, it aimed to remove restrictions on the number of service providers operating in Pakistan to avoid monopolisation.

The 2004 policy also took into account the cost of digital devices and equipment to access the internet, like the PCs, that is borne by the consumers, and vowed to introduce incentives to service providers to donate these devices to low income communities, provide loans for such equipment through service providers, and to remove import duties levied on inputs and finished products used in providing broadband services in order to reduce cost.

A decade after the USF Policy was passed, the Telecom Policy of 2015 went on to introduce public WiFis for the very first time for commercial use, based on international standards. It also eased right of way requirements and procedures in order to make it convenient for telecom operators to build infrastructure as required but it is unclear whether these procedures were helpful in any way when broadband projects were carried out.

More recently, the Digital Pakistan Policy in its Policy Objective Number VIII addresses the different types of digital divide including urban and rural, gender disparity, unserved and underserved areas and unequal access for the persons with disabilities. It promises the development of IT Zones and Software Technology Parks at major cities to promote digitisation, and to set up telecenters in unserved areas of Pakistan.¹⁶ Key Component 5: ICT for Girls of the Digital Pakistan Policy focuses on bridging the digital divide by increasing adoption of ICTs by girls and women through training in computer skills programs, by setting up computer labs in schools in under and unserved areas. The policy also takes into account other factors, such as infrastructural issues that have acted as major contributors to the digital divide in the country. However, the implementation strategies of this policy also remain non-existent, widening the gap in reporting on whether the implementation was carried out and to what extent.

Moreover, the policy does not elaborate on how it aims to assist the previous and existing policies, for instance, the 2015 Telecom Policy, in furthering their agenda of universal access and no specific implementation mechanisms can be found.

With regards to the regulatory authority, the USF operates through the state-owned

15. USF Vision/ Mission Statement- <https://usf.org.pk/aboutus/content/mission-statement>

16. Digital Pakistan Policy 2018, Ministry of Information Technology & Telecommunication, [http://moib.gov.pk/Downloads/Policy/DIGITAL_PAKISTAN_POLICY\(22-05-2018\).pdf](http://moib.gov.pk/Downloads/Policy/DIGITAL_PAKISTAN_POLICY(22-05-2018).pdf)

Universal Service Fund, which operates independently but falls under the Ministry of Information Technology & Telecommunication. The Pakistan Telecommunication Authority (PTA) is responsible for promoting the availability of a wide range of high quality, efficient, cost effective and competitive telecommunication services throughout Pakistan.

In recent years, a number of contracts have been awarded to telecom companies by the USF. The record of all projects is updated on the Fund's website. In addition, to ensure that the general public can access the internet easily, the USF, under its ICT for Girls Program, implemented a project for establishing Computer Labs at Women Empowerment Centers (WECs) operational under administrative control of Pakistan Baitul Mal (PBM).¹⁷ The aim of the project is to provide ICT and coding awareness to women. The project was conceived and implemented between 2016-18, under which 120 computer labs were established. In addition to this, in 2017, the USF entered into an agreement with Jazz to establish 10 telecenters across Pakistan to help bridge the digital divide.¹⁸

Whereas, PTA signed an agreement with GSMA Association - an industry organisation that represents the interests of mobile network operators worldwide, in March 2022 to work on reducing digital gender gap in Pakistan.¹⁹ PTA, in its press release, wrote, "GSMA will facilitate PTA by sharing data/insights/expertise in identifying target-oriented projects to reduce digital gender gap. These will include initiatives related to digital financial inclusion, accessibility, affordability, online security awareness and digital skills by females in both rural and urban areas." It further elaborated that the company will also give support to the authority "in designing SMS/WhatsApp/IVR based consumer surveys," which will help PTA in collecting authentic gender disaggregated data on various indicators, including SIM & device ownership, internet, social media usage and financial access gap. The partnership will also be focused on GSMA providing assistance by "providing Mobile Internet Skills Training Toolkit (MISTT) in Urdu language, a set of resources to promote digital literacy, and help people use the internet more safely on their mobile."²⁰

However, another digital divide that needs attention of policy framework is geographic barriers that bar millions living in underserved areas from accessing the internet. During the COVID-19 lockdown in the country, a number of petitions were filed in the high courts of the country to appeal for better internet coverage in remote and rural areas supplemented by on-ground protests by affected communities. The Islamabad High Court in April 2020 ordered the PTA to restore 3G and 4G services in the tribal districts of Khyber Pakhtunkhwa (the former FATA regions).²¹ Even though the decision was set aside by the Supreme Court, the case attracted global attention to Pakistan's connectivity issues and also highlighted that despite having multiple policies in place that promise access, there is a lot more that needs to be done to implement these policies.

However, the tribal regions that were disconnected since June 2016, have started to get internet access after constant efforts of communities to demand connectivity as the usage increased during the pandemic. On the petition of a student from former FATA, the Islamabad High Court settled the case after the federal government agreed to restore internet access in the tribal region.²²

17. WEC Impact Analysis- Report <https://usf.org.pk/UserFiles/file/Impact%20Assessment/WEC%20Impact%20Analysis%20Report-12th%20March.pdf>

18. Jazz and USF to Establish 10 Telecenters Across Pakistan- <https://pakorbit.com/2017/02/jazz-usf-establish-10-telecenters-across-pakistan/>

19. *Pta Gsma Sign Agreement To Accelerate Gender Inclusion In Icts In Pakistan*. (2022, March 1). PTA.

<https://www.pta.gov.pk/en/media-center/single-media/pta-gsma-sign-agreement-to-accelerate-gender-inclusion-in-icts-in-pakistan-010322>

20. Ibid.

21. Bashir, S. (2020, April 14). Islamabad High Court orders PTA to revive internet in former FATA. Express Tribune. <https://tribune.com.pk/story/2197950/islamabad-high-court-orders-pta-revive-internet-former-fata>

22. DRM. (2021, June 16). *Tribal Areas to get 3G 4G Service, Schedule Ready, High Court settles case*. Digital Rights Monitor.

In December 2021, PTA announced that it has restored internet connectivity in Kurram agency of former FATA, mentioning, “data services have been restored in six (6) out of seven (7) districts of Erstwhile FATA.”²³

23. Press Release. Data Services Restored In District Kurram. (2021, December 27). PTA.
<https://www.pta.gov.pk/en/media-center/single-media/data-services-restored-in-district-kurram-291221>

4.2 - Connectivity and Usage

Indicators Assessment

Connectivity and Usage	A significant proportion of the country has operational broadband and mobile connectivity infrastructure
	A significant population of the country has access to and uses the Internet
	There is statistical evidence that the number of people who are connected to broadband Internet is steadily growing
	There is statistical evidence that the number of people who are connected to the mobile Internet is steadily growing

Key Findings

- A significant population, 104 million people, remains disconnected from any kind of internet as of April 2022.
- A project worth 192 million PKR was awarded to Jazz by USF²⁴ in 2019 to connect 401 mouzas of North Waziristan. The region still remains disconnected.
- For the telecom sector, seeking approval from 14 security agencies to install one tower is a hurdle and delays work.
- Annual broadband penetration increased by almost 26 percent since 2016.
- 3G/4G LTE subscription saw an increase of 223,137 subscribers in 2019-2020 compared to the previous year 2018-2019, and an increase of 317,109 subscribers compared to the year 2019-2020.
- Monthly average cellular subscription stands at 187.57 million between May 2021 and March 2022.

Analysis

According to the March 2022 statistics of Pakistan Telecommunication Authority (PTA), at least 52.79 percent of the population, or 116 million people out of the population estimated at over 220 million, has access to some form of internet in the country.²⁵ However, where teledensity reflects that almost 88 percent of the population is connected to cellular services, the gap in the access to the internet is evidence of the unavailability of mobile internet and broadband internet services in most parts of the country. The PTA Telecom Indicators suggest that the subscriber base for broadband is currently 116 million, whereas 3G/4G

24. North Waziristan, USF, <https://usf.org.pk/projects/detail/rural-telecom-program/north-waziristan>

25. PTA Telecom Indicators, March 2022, <https://www.pta.gov.pk/en/telecom-indicators>

mobile internet subscription is 113 million, and basic telephony subscriber base stands at 2 million making up only 1.14 percent of the total population. While the increase in these numbers has been constant, over 47 percent of the population continues to be disconnected from the internet.

The gap in cellular and internet connectivity can be attributed to various factors, and onground experiences also depict discrepancy in the kind of access that is regarded to individuals and communities in both urban and rural areas. Where the data fails to break down the usage based on rural and urban divide, it also does not offer gender disaggregation of internet and cellular access in the country that continues to be one of the key barriers in acquiring an internet connection.

During the COVID-19 lockdown, this gap became more evident. Anecdotal evidence suggests that those on the peripheries and those residing in rural areas were the most affected owing to the lack of availability of proper infrastructure in the region, whereas those belonging to low-income communities suffered equally due to their inability to afford a smartphone and/or a working internet connection (discussed in **Section 4.3: Affordability**).

The mobile internet connectivity in the tribal regions of Khyber Pakhtunkhwa (KP) - formerly known as FATA - have been disconnected since June 2016 in the wake of a clash between armed forces on Pak-Afghan border in Torkham. While this is the most recent known date of disconnect, the area has suffered with lack of communication technology access since the beginning of war on terror in 2003 in the region. The security operation against armed extremists led to considerable damage of infrastructure in the vicinity, which also included whatever was available of telecom towers for mobile connectivity. Since then, very little was done to repair the damage caused to the technical infrastructure in the area, resulting in a consistent internet blackout until December 2021 when internet access in 6 out of 7 districts of former FATA were restored with the provision of connectivity in Kurram Agency.²⁶

A similar situation has been observed in neighbouring Balochistan, and Gilgit-Baltistan (GB), where both cellular and internet services are unavailable to the residents. The implications of this disconnection in the name of security as a result of security operations, and in most instances, due to the lack of authorities' and service providers' intention to invest in infrastructure, were drastic on the lives of citizens residing in those areas. Many shared personal and professional impacts like losing touch with family members abroad, having to travel long distances through unsafe terrain everyday to work and study, relocating to other cities, and not being able to access information outside of the region.²⁷ Several residents informed that while they are unable to connect to local telecommunication networks for communication purposes, those closer to the border have subscribed to Afghan telecommunication services in order to stay connected, whereas many have relocated.²⁸

Mr. Basharat Issa, a lecturer at a local university in Karachi, hails from Gilgit-Baltistan, and is one of the organisers of the online campaign #Internet4GilgitBaltistan that demanded the authorities to provide internet access in the region. In an interview for this research, he shares that during the COVID-19 lockdown when his work went remote, he decided to return to Yasin - his hometown in Gilgit-Baltistan. However, within a few days he realised that he cannot work from home due to the unavailability of internet access, and had to return to Karachi. He

26. Press Release. Data Services Restored In District Kurram. (2021, December 27). PTA. <https://www.pta.gov.pk/en/media-center/single-media/data-services-restored-in-district-kurram-291221>

27. Hija Kamran, A Year Without the Internet, Slate, August 21, 2017 <https://slate.com/technology/2017/08/the-internet-has-been-shut-down-in-pakistans-fata-for-more-than-a-year.html>

28. Ibid.

says, "There are many people who wanted to come back to their hometown, but could not because of the situation of internet connectivity."²⁹

In the region, only one telecom company, Special Telecommunication Organisation (SCO), is approved to operate and offers 2G, 3G and 4G mobile internet services.³⁰ However, Issa says that the connection is very weak and 3G/4G internet never works. He shares that the subscribers only receive 2G service on their phone that makes working on the internet impossible. Many young people move to the big cities for work and studies, which, Issa says, is the only way to remain connected.

A March 2021 media report suggested that according to the sources in the Ministry of Information Technology and Telecommunications (MoITT), the government has decided to open "digital roads" for Azad Jammu and Kashmir (AJK) and GB, and the auction proceeds for new spectrum would be finalised by the middle of May.³¹ During a briefing to the Prime Minister Imran Khan, the Ministry and PTA informed the meeting, "Traditional restrictions related to the security have been relaxed and high-speed internet services will be provided to almost all areas of GB and AJK, expectedly before the end of this year." The report further mentions, "The auction of 4G licences will be held before June 30 and it will not only bring high-speed internet to GB and AJK but also the benefits of higher revenues for their governments." The licences were finally awarded in October 2021 to three cellular mobile operators: CM Pak (Zong), Telenor Pakistan, and PTML (Ufone).³²

Although the disconnected regions have never really had uninterrupted and good quality internet or telecommunication services, telecom companies have time and again expressed interest in providing this access, while obtaining licence to provide services and seeking security clearance to set up infrastructure has been a challenge.

Mr. Ibrar Khan, Vice President Corporate and Economic Affairs at Jazz, tells Media Matters for Democracy that there are various challenges that the telecom sector faces while attempting to increase their coverage.³³ According to him, one of them is the Right of Way, "We have to take security clearance from 14 different agencies in order to install one telecom tower. Even if one agency refuses clearance, we cannot start the work. We cannot contest the decision of these agencies, and they do not provide a reason to reject the request. We don't understand what damage we could cause by setting up this tower that is intended to provide telecom services to residents."³⁴

Mr. Irfan Wahab Khan, CEO of Telenor Pakistan, while talking about the Right of Way, says, "Currently, Pakistan is only ahead of Afghanistan with its fibre penetration of less than 10 [percent], which has impacted access of high speed connectivity to masses. While [the Right of Way] policy has been approved, it is crucial for it to come into effect through implementation on a provincial level." He further adds, "It is important that network shutdowns are curtailed to very limited (security risk) areas, and blanket city and district wide forced shutdowns are avoided at all cost."³⁵

29. Interviewed for this research.

30. Kohari, A. (2021, June 23). Would you climb a mountain for internet access? Rest of World. <https://restofworld.org/2020/the-hills-are-alive/>

31. Ali, K. (2021, March 21). 4G broadband services to be launched in AJK, GB on 23rd. DAWN.COM. <https://www.dawn.com/news/1613738>

32. Press Release. Licenses For Next Generation Mobile Services In Aj&K And Gb Awarded. (2021, October 11). PTA. <https://www.pta.gov.pk/en/media-center/single-media/licenses-for-next-generation-mobile-services-in-ajk-and-gb-awarded-121021>

33. Interviewed for this research.

34. Ibid.

35. Ibid.

The disconnected regions of the country have constantly been denied access in the name of security. On April 13, 2020, the Islamabad High Court (IHC), while responding to a petition filed by a student from former-FATA who was distressed about the non-availability of the internet in the region and its impact on his online classes, ordered the PTA to restore internet access immediately. The Court also said, "The internet facility is the basic right of every citizen. Article 19 of the Constitution protects the citizen's right of freedom of expression."³⁶

In a follow up hearing on April 20, the Ministry of IT informed the court that while it was ready to restore internet services in ex-FATA, it needed more time to set up the infrastructure which was disbanded due to security reasons in 2016. However, the ruling was later overturned in light of a Supreme Court judgement dated April 22, 2020 in response to PTA's challenge to IHC's 2018 judgement that declared internet shutdowns unconstitutional in the country.³⁷ The Supreme Court judgement ruled that the government can shut down the internet and other communication channels under the powers given to the PTA as per the Pakistan Telecommunication (Re-Organisation) Act, 1996.³⁸

In light of the subsequent protests by students in the region during the COVID-19 induced lockdown in the country, almost a year later on January 20, 2021, during an address in Wana, Prime Minister Imran Khan announced the restoration of 3G/4G internet services in Waziristan from that day.³⁹ Subsequently, PTA directed cellular service providers to resume services in the region, and the services were later upgraded to 4G in February that year, with Jazz being the first one to upgrade, as per PTA.⁴⁰ However, the Universal Service Fund (USF) - a government-led company tasked to promote internet connectivity in the country and is funded via 1.5 percent profits of all telecom companies in the country, has awarded multiple contracts to telecom operators to set up infrastructure in the disconnected regions including the underserved areas in KP, Balochistan, Sindh and Punjab. USF has recently awarded 9 contracts worth 8.15 billion PKR to telecom companies to provide high speed broadband internet services to disconnected communities.⁴¹ In a press release dated March 19, 2021, USF states that its teams are "working relentlessly to provide High Speed Mobile Broadband services in areas such as Babusar Top, Lake Saif Ul Malook and Sharan Forest in Mansehra district, Kumrat Valley in Upper Dir district, Mahodand Lake in Swat district and Galiyaat."⁴²

Despite multiple contracts between USF and telecom companies in the country over the years to provide mobile internet services to underserved areas, many remain disconnected. For instance, in 2019, USF signed two contracts with Jazz to provide internet connectivity in South⁴³ and North Waziristan.⁴⁴ ⁴⁵ Regardless of the fact that these contracts were signed over three years ago, there is little to no update on the implementation and completion of these projects, and the region continues to struggle with poor quality access.

36. Bashir, S. (2020, April 14). Islamabad High Court orders PTA to revive internet in former FATA. Express Tribune. <https://tribune.com.pk/story/2197950/islamabad-high-court-orders-pta-revive-internet-former-fata>

37. Bashir, S. (2020, May 11). Islamabad High Court seeks assistance in tribal districts internet case. Express Tribune. <https://tribune.com.pk/story/2219308/1-islamabad-high-court-seeks-assistance-tribal-districts-internet-case>

38. Supreme Court, April 22, 2020, [PDF] https://www.supremecourt.gov.pk/downloads_judgements/c.a._977_2018.pdf

39. Dawn.com. (2021, January 20). PM says 3G/4G internet services to start in Waziristan from today. <https://www.dawn.com/news/1602557>

40. Press Release. (2021, February 19). 3g Data Sites Upgraded To 4g In South Waziristan. PTA.

<https://www.pta.gov.pk/en/media-center/single-media/3g-data-sites-upgraded-to-4g-in-south-waziristan-220221>

41. Press Release. (2021, March 21). USF Board approves nine contracts worth PKR 8.15 Billion for High Speed Mobile Broadband and Optic Fiber Cable Projects. Universal Service Fund. <https://usf.org.pk/news-detail/139>

42. Ibid.

43. Profit, USF, Jazz to bridge digital divide in South Waziristan, September 12, 2019, <https://profit.pakistantoday.com.pk/2019/09/12/usf-jazz-to-bridge-digital-divide-in-south-waziristan/>

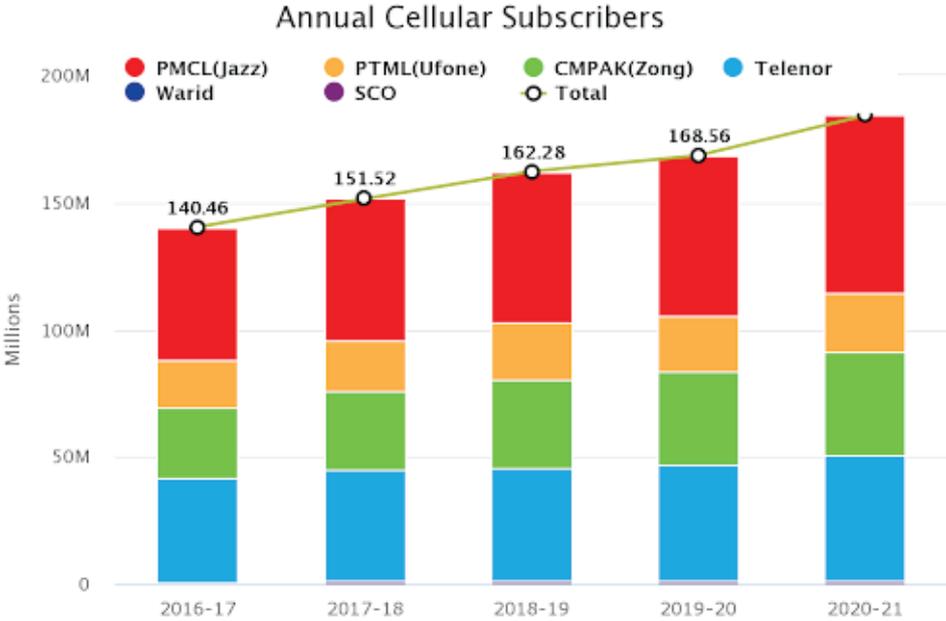
44. Jazz, Press Release, January 2019,

<https://jazz.com.pk/media-center/jazz-news-flash-detail/jazz-wins-usf-contract-to-provide-mobile-broadband-coverage-in-north-waziristan>

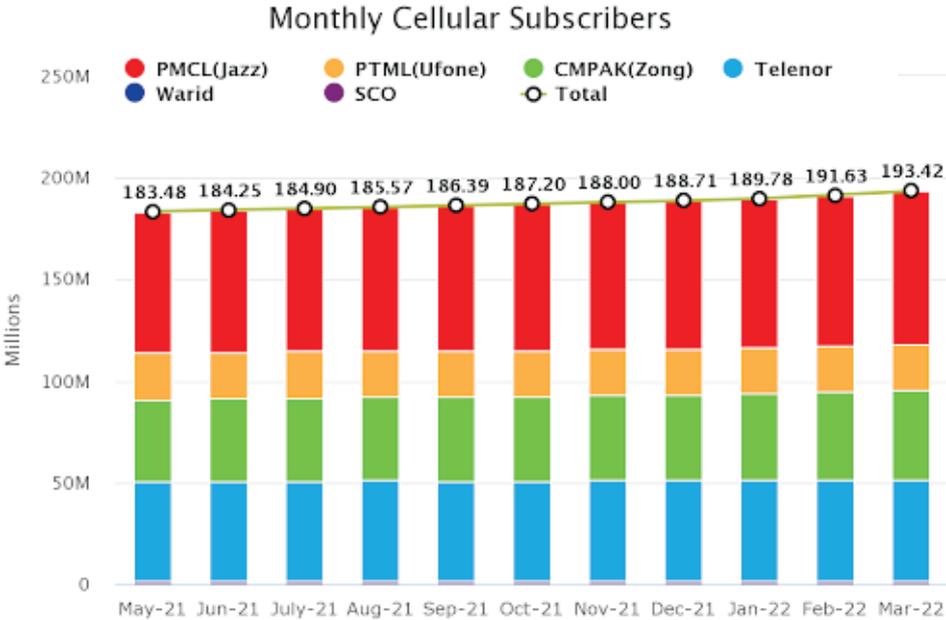
45. Profit, Jazz to bring broadband services to North Waziristan, February 6, 2019,

<https://profit.pakistantoday.com.pk/2019/02/06/jazz-to-bring-broadband-services-to-north-waziristan/>

Although a significant portion of the country is disconnected, there is statistical evidence from PTA that suggests that internet connectivity and mobile subscriptions are growing in the country. PTA Telecom Indicators suggest that the annual telecom subscription for the year 2020-21 has seen an increase of 43.79 million people compared to that in 2016-17,⁴⁶ with a monthly average increase of 187.57 million between May 2021 and March 2022. Whereas, the same statistics suggest that since 2016,⁴⁷ mobile broadband subscription has witnessed an increase of over 56.76 million subscribers, while total broadband subscriptions have increased by over 58 million.⁴⁸



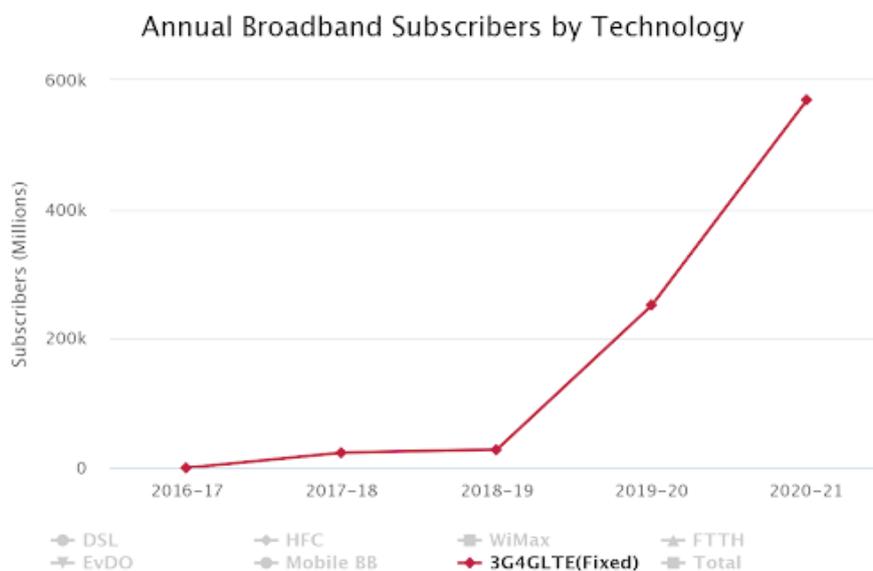
Annual Cellular Subscribers, April 2022. Source: PTA



Monthly Cellular Subscribers, April 2022. Source: PTA

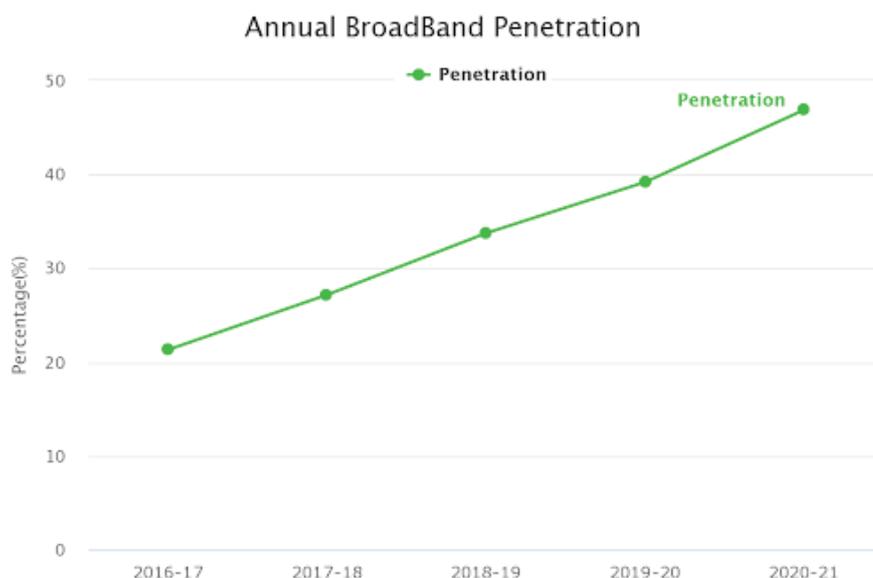
46. Cellular Subscribers, PTA, April 2022, <https://www.pta.gov.pk/en/telecom-indicators/1>
 47. Ibid.
 48. Annual Broadband Subscribers by Technology, PTA, April 2022, <https://www.pta.gov.pk/en/telecom-indicators/1#broadband-subscribers>

On the other hand, 3G/4G LTE subscription saw a spike in the year 2020-2021 with an increase of 540,246 subscribers compared to the year 2018-2019.⁴⁹



3G/4G LTE (Fixed) subscription increase over the years, April 2022. Source: PTA

DSL broadband internet saw a slight increase in subscription in the year 2020-2021 compared to a decline in 2019-2020. The steady growth of DSL subscribers until 2018-2019 saw a decrease of over 240,000 in the previous year. Whereas, the increase was noted to be over 94,000 in the year 2020-2021. The annual broadband penetration in the country has increased by almost 26.6 percent since 2016-2017.⁵⁰



Annual Broadband Penetration, April 2022. Source: PTA

49.

Ibid.

50. Annual Broadband Penetration, PTA, April 2022, <https://www.pta.gov.pk/en/telecom-indicators/1#broadband-subscribers>

4.3 - Affordability

Indicators Assessment

Affordability	Is the cost of the Internet perceived to be a barrier to access?
	Mobile handsets capable of Internet connectivity affordable to all sections of the population?
	The government makes zero rated and low cost internet access facilities available for poor and marginalised communities.
	Telecommunication companies and internet service providers make available price packages appropriate for groups with low and variable incomes.

Key Findings

Pakistan has some of the most affordable mobile internet packages. However, interviews, past research and collective analysis suggest that these tariffs continue to be expensive for people.

An absence of price control protocols from the regulators of the telecom industry leads to price wars in an attempt to retain users, which results in quality deterioration.

In order to offer workable internet connection and to cover high taxes imposed on the telecom industry, telcos charge high rates for internet access.

High cost of mobile devices is one of the major barriers to internet access in Pakistan.

In January 2022, the government imposed a new 17 percent tax on imported mobile phones, leading to an increase in prices to upto 30 percent.

Talks about assembling mobile phones locally in order to bring the cost down is in the works at the government level. NITB says that the goal is to bring the basic smartphone cost down to 4000 PKR.

Analysis

According to the Mobile Broadband Pricing for the year 2020 by the Alliance for Affordable Internet (A4Ai) - a global coalition hosted by the World Wide Web Foundation that works to make broadband affordable for everyone, Pakistan offers some of the cheapest broadband packages among the 101 countries that were surveyed.⁵¹ According to the survey, 1 GB

51. A4AI Mobile Broadband Pricing - USD 2020. (2020) A4AI. https://a4ai.org/extra/baskets/A4AI/2020/mobile_broadband_pricing_usd

mobile broadband in Pakistan costs 0.48 USD which is the second cheapest in the list with Guinea offering the cheapest rates for 1 GB internet at 0.42 USD.⁵² Pakistan's place has improved over the previous two years when it was the sixth cheapest country for 1 GB mobile broadband at 1.43 USD in the second quarter of 2019,⁵³ and at 1.30 USD in the fourth quarter of 2018.⁵⁴

However, despite the internet being cheap in Pakistan in comparison to the global market, access to the internet remains unaffordable against the income and buying power of the individuals in the country. The same A4Ai mobile broadband data analysis for the year 2020 also suggests that the cost of 1 GB internet data is equivalent to 0.51 percent of the GNI per capita in Pakistan.⁵⁵ A report by Media Matters for Democracy titled, "Women Disconnected: Feminist Case Studies on the Gender Digital Divide Amidst COVID-19", looked at the patterns of digital divide from a gendered lens and examined the reasons why the divide exists.⁵⁶ While the analysis exhibited various cultural, geographical and infrastructural barriers, affordability of the internet and devices to access it remained some of the key reasons for this gap in connectivity. Among the respondents that were surveyed for the study, 76 percent said that the internet is expensive for them, and more than a third of total respondents said that it was beyond the reach of an average person.

Sidra Jalil is a community builder with 14 years of experience working in the technology sector, particularly the entrepreneurial ecosystem, and has engaged with grassroots communities in rural, semi-urban and urban areas. She says, "The internet in Pakistan is so expensive that it is impossible for the masses to afford it. And if the country really wants to bring digital reforms, then you have to make sure that the internet is provided at very cheap rates."⁵⁷

Sidra elaborates, "For instance, the cost to set up [an internet router] aside, an average quality internet connection that costs 1000 PKR is reasonable enough in a household of 8 to 10 people using that connection. But the majority of the population in Pakistan is earning 15,000 - 20,000 PKR a month, so the cost of the internet becomes unaffordable." She says that the people who can afford the internet in the country are considered privileged because it is that expensive for the masses to afford.

Whereas, Ibrar Khan, Vice President Corporate and Economic Affairs at Jazz, attributes this unaffordability of internet access to the lack of price controls in the telecom sector in the country. "We don't have any floor pricing, and this results in a menace between the operators. So [in competing with other operators] the more you drop your pricing, the more you deteriorate your service drastically."⁵⁸

He adds that taxes on telecom services limit the operators to decrease their prices further. "Telecom is the only commodity in Pakistan that has a GST of 19.5 percent; others have 5, 6 or 16 percent at max. Withholding tax on telecom is 12.5 percent; corporate tax is also applied on us. So when a consumer gives us 100 PKR, 32 percent of it is deducted in taxes; 30 to 35 percent is expenses." Khan mentions that the telecom companies are a commercial entity and work for profit, while adding, "If we have invested 1 or 2 billion dollars in the

52. Ibid.

53. Mobile Broadband Pricing, Data for Q2 2019, Alliance for Affordable Internet, https://a4ai.org/extra/mobile_broadband_pricing_usd-2019Q2

54. Mobile Broadband Pricing, Data for Q4 2018, Alliance for Affordable Internet, https://a4ai.org/extra/mobile_broadband_pricing_usd-2018Q4

55. Affordability as % of Average Income, Mobile Broadband Pricing, Data for 2020, Alliance for Affordable Income, https://a4ai.org/extra/baskets/A4AI/2020/mobile_broadband_pricing_gni

56. Kamran, H., Rehman, Z., & Batool, Z. (2021, January). Women Disconnected: Feminist Case Studies on the Gender Digital Divide Amidst COVID-19. Media Matters for Democracy. <https://mediamatters.pk/3249-2/>

57. Interviewed for this research.

58. Ibid.

market, we do want to make 12 to 15 percent [in profit] before taxes. It is difficult for us to offer [our services] for free.”

Responding to PTA’s telecom indicators that depict 84 percent population’s connectivity to cellular networks with only 45 percent of the population having access to some form of internet,⁵⁹ he further adds that high prices and the new tax regime on smartphones adds to the inability of users to connect to the internet. He attributes expensive handset prices to be the biggest reason for this gap. Ibrar Khan says, “We see that [most] of the internet usage is done on the smartphone. Unless and until you have enough inexpensive smartphones available, you won’t be able to break the barrier [of the digital divide].”

In an August 2020 study evaluating the cost of ICT devices to connect to the internet in 95 low and middle-income countries, A4Ai looks at the prices of smartphones against the affordability of the population based on the average income of each country.⁶⁰ The report suggests that the average cost of a smartphone that allows its user to connect to the internet stands at 69.23 USD and the affordability (price in relation to the income) percentage is 52.58 percent, thereby making it difficult for many to be able to afford one. The Mobile Gender Gap Report 2020 by GSMA finds that out of the surveyed non-mobile phone owners in Pakistan, 26 percent said that the single most important barrier to owning a mobile phone for them is the cost of a handset and/or SIM card.⁶¹

The State of Mobile Internet Connectivity Report 2020 by GSMA,⁶² which looks at the extent of mobile connectivity in 170 countries representing 99 percent of the world’s population for the year 2019, finds that affordability of an entry-level internet enabled handset in South Asian countries dropped by 3 percent in 2020 reaching 25 percent compared to 22 percent in 2019.⁶³ In the year 2019, Pakistan ranked the lowest in mobile connectivity in South Asia, with affordability of the internet and handsets being the worst among the five countries that were surveyed in the category.⁶⁴ On a global scale, Pakistan ranked 32nd worst country in terms of mobile internet connectivity with an index score of 40.6 that year.⁶⁵

Affordability of a smartphone was addressed as the common barrier to access to the internet in the interviews conducted with technology industry and civil society representatives for this study.

Telenor Pakistan CEO Irfan Wahab Khan says, “Although there are over 180 million subscriptions [of cellular services] in the country, unique subscribers amount to over 90 million only with 67 percent of those having access to the internet through a mobile phone.”⁶⁶

He expresses that this is an opportunity for improvement by addressing the cause of the gap that exists. “This is a big gap not only in terms of internet subscribers but overall telecom

59. Stats from March 2021 when the interview was conducted.

60. Alliance for Affordable Internet. (2020, August). From Luxury to Lifeline: Reducing the cost of mobile devices to reach universal internet access. Web Foundation, https://1e8q3q16vyc81g8l3h3md6q5f5e-wpengine.netdna-ssl.com/wp-content/uploads/2020/08/Alliance-for-Affordable-Internet_Device-Pricing_PUBLI-C.pdf

61. Rowntree, O., & Shanahan, M. (2020, May). Connected Women: The Mobile Gender Gap Report 2020. GSMA. <https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2020/05/GSMA-The-Mobile-Gender-Gap-Report-2020.pdf>

62. Bahia, K., & Delaporte, A. (2020, September). Connected Society: The State of Mobile Internet Connectivity 2020. GSMA. <https://gsma.com/~/wp-content/uploads/2020/09/GSMA-State-of-Mobile-Internet-Connectivity-Report-2020.pdf>

63. Figure 15. (2021). Connected Society: The State of Mobile Internet Connectivity 2021. GSMA. <https://www.gsma.com/~/wp-content/uploads/2021/09/The-State-of-Mobile-Internet-Connectivity-Report-2021.pdf>

64. South Asia Factsheet, Mobile Internet Connectivity 2020, GSMA, <https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2020/11/Mobile-Internet-Connectivity-South-Asia-Fact-Sheet.pdf>

65. Global Scores (2020), GSMA Mobile Connectivity Index 2019. <https://www.mobileconnectivityindex.com/#year=2019&globalRankings=overall&globalRankingsYear=2019>

66. Interviewed for this research in April 2021.

access as well, but this presents a big opportunity if we collectively look at the reasons for this gap and try to address them.” He adds, “Infrastructure availability and affordability remain the prime reasons.”

High taxes on mobile phones has proved to be one of the reasons for the increased price of smartphones in Pakistan. The GSMA Mobile Connectivity Index 2020 examines Affordability as one of the four indicators of connectivity in its methodology, and analyses tax as a percentage of total cost of mobile ownership against the average income in surveyed countries. It finds that in Pakistan, where the overall affordability in 2019 stood at 40.6 - the 32nd worst among 170 countries, taxation on an entry-level internet-enabled handset accounts for 28 percent of the cost of the device.⁶⁷

In January 2022, the existing tax on imported mobile phones was increased by 17 percent as part of the Supplementary Finance Budget 2022, that increased the price of handsets to upto 30 percent.⁶⁸

Shabahat Ali Shah, the CEO of National IT Board (NITB) at the time, says, “[The] government at the FBR and Ministry of Commerce level have already taken a decision to give subsidies to the mobile and handset manufacturing industry. So if somebody wants to come in and start the assembly of mobile phones here that can push the capital cost [of smartphones] down, we are going to give them subsidies and tax breaks as well.”⁶⁹ He adds that there are already manufacturers gearing up to set up their assembly lines in Pakistan that will bring the cost of mobile phones down in the local market. According to Ali Shah, “The cheapest smartphone in Pakistan costs 7000 to 8000 PKR. We have been talking about [reducing] this price to as low as 4000 PKR so it can become sustainable and affordable for normal citizens who want to leverage digital services on the phone.”

He further adds, “We are not going to cut down the tax on the high category handsets that are coming from abroad, like Apple and Samsung, because they are already so expensive. We believe that the people who can afford a mobile handset of that cost factor won’t care about paying 50,000 or 60,000 PKR more on top of the capital cost. However, we are going to cut taxes on those handsets which should be affordable, or which can be manufactured and assembled locally.”

Owing to the push to manufacture smartphones in the country, Samsung - one of the largest manufacturers of mobile phones across the world, set up its assembly site in Pakistan in partnership with Lucky Group in December 2021, which is expected to help in dropping tax on smartphones on locally assembled handsets.⁷⁰ Whereas, according to PTA, the local manufacturing plants manufactured/assembled 3.94 million handsets in the month of February 2022 compared to 0.36 million handsets that were imported commercially. However, out of this 3.94 million, 2.38 million handsets were 2G phones and 1.56 million were smartphones. The PTA data further reveals that 47 percent of the devices registered on Pakistani networks are 2G devices, while 53 percent devices are 3G/4G enabled smartphones.⁷¹

67. Pakistan, Detail and Analysis, Index Score 2019, Mobile Connectivity Index 2019, GSMA,

<https://www.mobileconnectivityindex.com/#year=2019&zoneIsoCode=PAK&analysisView=PAK>

68. Kamran, H. (2022, January 27). Pakistan Government Imposes Additional 17% Tax on Mobile Phones. Digital Rights Monitor.

<https://www.digitalrightsmonitor.pk/pakistan-government-imposes-additional-17-tax-on-mobile-phones/>

69. Interviewed for this research in April 2021. Shabahat Ali Shah was the CEO of NITB at the time of the interview.

70. Ayub, I. (2021, December 1). Samsung starts producing mobile phones in Pakistan. DAWN.COM. <https://www.dawn.com/news/1661220>

71. Amin, T. (2022, April 3). 0.36m sets imported: 3.94m mobile phones assembled locally in Feb: PTA. Recorder.

<https://www.recorder.com/news/40164870/036m-sets-imported-394m-mobile-phones-assembled-locally-in-feb-pta>

Ibrar Khan attributes the high number of ownership of feature phones among the population as the major reason for the disconnect from the internet in the country. He says, "To overcome this, we need to have a sunset on all the 2G phones. [And] till the time the government of Pakistan does not do away with 2G phones, our penetration to the internet will remain the same."

He adds, "Every month, 1.2 million handsets and yearly approximately 10 to 11 million handsets are being sold, and only upto 2.5 million handsets go towards new connections, and the rest of the handsets go towards the old connections as people change their phones."⁷²

Ibrar Khan informs that in an attempt to increase internet penetration in the country, Jazz has introduced a new 4G enabled smartphone called Jazz Digit 4G, with the starting cash price of 4,099 PKR. He believes that it is more affordable than what is currently available in the market.

He adds, "It is a highly competitive industry, and it is evolving rapidly. Therefore, the government should not take it as an opportunity to tighten the environment here, instead should relax it."

In January 2022, the Cabinet of Pakistan approved the Supplementary Financial Budget, through which taxes on various telecommunication services, including on imported mobile phones and mobile data services, were increased. Where an additional tax of 17 percent on imported mobile phones was imposed, withholding tax rate on calls and internet usage was increased to 15 percent from the previous 10 percent.⁷³ As a result, not only smartphones became expensive, connectivity to telecom services also became unaffordable. This new tax will be most evident in the usage of those with limited financial resources to access mobile phone connectivities. The Dawn states that this increase "indicates that the country's fiscal policymakers still consider connectivity a luxury rather than an essential service or a good."⁷⁴

The government had previously proposed a tax of Rs.1 for each call exceeding three minutes in the earlier version of the Federal Budget 2021-2022, Rs.5 for every 1 gigabyte of internet usage, as well as 10 paisa per SMS, a decision which was later reverted.⁷⁵

Where the internet has become a basic tool for communication with most of those with easy access to digital platforms moving to WhatsApp and other internet-based platforms, those with limited access to the internet still rely on mobile services for their communication. The affordability to access mobile and internet services is crucial for the growth of the digital economy as well as the progress of various other industries as the world moves its reliance for communication, education, healthcare, education, businesses and other needs, to the internet. It is imperative that the focus is given to make digital platforms and tools more accessible and affordable for everyone.

72. Stats quoted by the interviewee in April 2022 when the interview was conducted. There is a possibility that these figures have been revised since the interview.

73. Ansari, I. (2022, January 18). Telecom users feel pain of 'mini-budget.' Express Tribune.

<https://tribune.com.pk/story/2339305/telecom-users-feel-pain-of-mini-budget>

74. Editorial. (2022, January 29). Tax on cellular services. DAWN.COM. <https://www.dawn.com/news/1672062/tax-on-cellular-services>

75. Government Proposes Increase in Tax for Phone Calls Exceeding Five Minutes, Digital Rights Monitor, June 28, 2021,

<https://www.digitalrightsmonitor.pk/?p=7004>

4.4 - Equitable Access

Indicators Assessment

Equitable Access

Geographically diverse areas, urban and rural centres and all provincial regions have comparable broadband facilities.

Universal access policies are informed by statistical data regarding internet connectivity and usage among varied populations.

Specific measures are being taken to address gender digital divide.

There is a strategy in place to deal with social and cultural barriers affecting women's use of the Internet.

Key Findings

Internet access across Pakistan varies, and the situation is not easily comparable, especially in relation to regions such as Gilgit-Baltistan, South Waziristan and Balochistan, which lack good broadband facilities.

A new reliance on virtual life in the COVID-19 era has laid bare the lack of internet access for much of Pakistan.

According to the PTA, approximately one million students have consistent access to the internet. However, in a country where 47.21% of the population does not have access to either fixed or mobile broadband, academics have been completely halted for those without internet access.

PTA has awarded licences to Telenor, Zong and Ufone to extend Next Generation Mobile Services in Gilgit Baltistan and AJK, but update on the provision of services remains unknown as yet.

Equitable access is a cross-cutting issue.

Analysis

Internet access across Pakistan varies, and the situation is not easily comparable, especially in relation to regions such as Gilgit-Baltistan, South Waziristan and Balochistan, which lack good broadband facilities. A new reliance on virtual life in the COVID-19 era has laid bare the lack of internet access for much of Pakistan. For instance, online classes cannot take place in most of Balochistan because the majority of areas in the province do not have fibre optic lines. 9 out of 32 districts in the province completely lack mobile internet services, as the internet was shut down due to security reasons.⁷⁶

76. Stats as of April 2021.

According to the PTA, approximately one million students have consistent access to the internet. However, in a country where 47.21% of the population does not have access to either fixed or mobile broadband,⁷⁷ academics have been completely halted for those without internet access.

In order to prevent the spread of the virus, the Pakistani government ordered all academic institutions to shift their classes online. While private universities could afford to completely transition to digital learning, many public universities, where students of low and middle income families are enrolled, have been unable to continue their teaching. Twitter campaigns such as #ShameOnTelecomSector and #WeRejectOnlineEdu trended in the country in 2020 where university students have been voicing their opinions. People are asserting that online education is not an option given the cost and absence of high-quality internet. Students in rural regions in provinces such as Balochistan, Khyber Pakhtunkhwa (KP), interior Sindh and Gilgit-Baltistan have been complaining about internet issues. Students returning to their homes in Balochistan and KP after the closing of educational institutions have been impacted more than others. Many in these provinces have been protesting through rallies, petitions in high courts, demonstrations and even hunger strikes. However, they have had little success. Instead, they have even been subject to arrests and violence as was the case in Quetta, Balochistan during a June 24, 2020 protest against online education.⁷⁸

The Pakistan Bureau of Statistics (PBS) survey for the year 2019-2020 suggests that the urban-rural digital divide is stark, and finds that where 30.66 percent of the population has internet access in urban areas, this number drops to 11.65 percent for rural population, indicating a wide digital divide that leaves many behind.⁷⁹ A 2018 GISWatch study suggests that where 55 percent of the population in the country lives in rural areas, PTA said that those connected to the internet only make up 8 percent of this population.⁸⁰

The PBS survey data further elaborates on this divide on the provincial level and suggests that Balochistan is the most affected by urban digital divide where the lowest percentage of the urban population (21.77 percent) is connected to the internet in urban areas. However, the overall glimpse of the data suggests that Khyber Pakhtunkhwa is the most affected province out of the four, where only 14.3 percent of the entire population is using the internet, compared to 14.73 percent in Balochistan, 19.66 percent in Punjab, and 22.17 percent in Sindh. The total urban-rural divide in internet usage in the country is over 19 percent.⁸¹

The internet can be a powerful tool for greater equality. It boosts our collective capacity to archive information, search through large quantities of it, and retrieve it, rapidly. It is said that the internet will expand access to education, good jobs, and better health; and that it will create new deliberative spaces for political discussion and provide citizens with direct access to government. Insofar as such claims are plausible, internet access is an important resource. Hence, inequality in internet access is a significant public policy issue.

As internet penetration increases, those who advocate against inequality of access to new information technologies should shift their attention from the “digital divide” — inequality between the “haves” and “have-nots” differentiated by dichotomous measures of access to

77. According to PTA as of April 2022.

78. Staff Reports. (2020, October 10). COVID-19 Reveals the Divide in Internet Access in Pakistan. BORGEM. <https://www.borgenmagazine.com/internet-access-in-pakistan/>

79. Pakistan Bureau of Statistics. (2021). Percentage of Individuals using the Internet, Pakistan Social And Living Standards Measurement 2019–2020. https://www.pbs.gov.pk/sites/default/files/pslm/publications/pslm_district_2019-20/tables/3.3.pdf

80. Wireless for Communities (W4C) Pakistan. (2018). Global Information Society Watch. <https://giswatch.org/en/country-report/infrastructure/pakistan>

81. Pakistan Bureau of Statistics. (2021). Percentage of Individuals using the Internet, Pakistan Social And Living Standards Measurement 2019–2020. https://www.pbs.gov.pk/sites/default/files/pslm/publications/pslm_district_2019-20/tables/3.3.pdf

or use of the new technologies — to digital inequality, by which we refer not just to differences in access, but also to inequality among persons with formal access to the internet.

Paul DiMaggio and Eszter Hargittai state that five dimensions of digital inequality deserve additional attention: inequality in equipment, autonomy of use, skill, social support, and the purposes for which the technology is employed.⁸² Specifically, they raise questions about both the beginning and the end of the phrase “access to the internet.” They redefine “access” in social as well as technological terms: “as the technology penetrates into every crevice of society, the pressing question will be not ‘who can find a network connection at home, work, or in a library or community centre from which to log on?’, but instead, ‘what are people doing, and what are they able to do, when they go on-line.’” Furthermore, they recognise that the internet itself is not a fixed object, but “rather a protean family of technologies and services that is being rapidly reshaped through the interacting efforts of profit seeking corporations, government agencies and nongovernmental organisations.” Hence, patterns of inequality will reflect not just differences in individual resources, but also the way in which economic and political factors make such differences matter.⁸³

In the context of Pakistan, where geographical inequalities and lack of enabling infrastructure creates barrier in access to the internet, other factors including economic (affordability), social factors (permissions from patriarchs in the household), and political factors (denial of services based on security concerns), all play a critical role. Urban-rural divide needs to also be seen from gendered and economic perspectives to examine the situation better. The PBS data suggests that in Pakistan the male-female usage of the internet varies by 10.42 percent – where over 24 percent men use the internet, only 13.6 percent of women are using the internet.⁸⁴ The cost of this disconnect is not mere inconvenience, rather it widens various other gaps like in literacy rate, employment rate, and in access to healthcare that has proven to be life threatening in places where mobile phone and internet usage of women is low. For instance, in former-FATA regions of KP, pregnant women have died before childbirth because they could not get connected to a healthcare facility in time owing to the lack of connection and a mobile phone in their possession. In other cases, healthcare information, like menstruation, pregnancy, breast cancer and many others, has been barred on them because of this divide leading to a gap in information that is otherwise considered a taboo, that they acquire and impart about their bodies.⁸⁵ In a lot of cases, where the divide was not because of the lack of connectivity, patriarchal and familial control on access has been a hindrance, resulting in a continuously wide gender digital divide.⁸⁶

This control is not restricted by geography, rather is the case in most households in Pakistan where women and young girls depend on their patriarchs to allow them to own or use a mobile phone and access the internet. This access comes with constant scrutiny resulting in the experience of the internet being limited.

In addition, as discussed, many factors play their role in connecting and acquiring access to the internet in a country like Pakistan that was late in adopting the technology on a mass scale. Many areas in the country, like parts of Balochistan and KP, have either been deprived of this access because of security concerns, or because of their disputed status, like former-

82. DiMaggio, P., & Hargittai, E. (2001, July). *From the “Digital Divide” to “Digital Inequality”: Studying Internet Use as Penetration Increases*. Princeton University, School of Public and International Affairs, Center for Arts and Cultural Policy Studies. <https://econpapers.repec.org/paper/pricpanda/15.htm>

83. Ibid.

84. Pakistan Bureau of Statistics. (2021). Percentage of Individuals using the Internet, Pakistan Social And Living Standards Measurement 2019–2020. https://www.pbs.gov.pk/sites/default/files/pslm/publications/pslm_district_2019-20/tables/3.3.pdf

85. Kamran, H., Rehman, Z., & Khan, Z. (2021, January). Women Disconnected: Feminist Case Studies on the Gender Digital Divide Amidst COVID-19. Media Matters for Democracy. <https://www.digitalrightsmonitor.pk/wp-content/uploads/2021/01/Women-Disconnected-Gender-Digital-Divide-in-Pakistan.pdf>

86. Aurangzeb, A. (2020, September 4). For women, access to the internet is more than simply having a device. Digital Rights Monitor. <https://www.digitalrightsmonitor.pk/for-women-access-to-the-internet-is-more-than-simply-having-a-device/>

FATA and Gilgit Baltistan. After the merger with the neighbouring province KP, the tribal regions of former-FATA have gotten some access as a result of the constant struggle of residents during the COVID-19 pandemic.⁸⁷ However, despite the government's increased focus on promoting tourism, most of Gilgit-Baltistan remains disconnected, and where there is some connectivity available, the quality is inadequate to perform basic internet search, let alone do business or attend classes.

According to Nosheen Ali, a sociologist and a Visiting Associate Professor at The Gallatin School, New York University, "Even today, nature remains the primary modality through which Gilgit-Baltistan is understood within the Pakistani national imagination. Its magnificent peaks and breathtaking valleys invoke within Pakistanis a simultaneous sense of emotional attachment and proud ownership, permitting them to claim Pakistan as 'beautiful'. But while Gilgit-Baltistan is externally produced as an idyllic tourist destination, it is internally managed as a suspect security zone. This is because the region is internationally considered as part of the disputed area of Kashmir—a territory that both Pakistan and India claim, and have turned into the most militarised zone in the world over the last seven decades."⁸⁸

Since its liberation from Jammu and Kashmir's ruling Dogra dynasty in 1947 and subsequent accession to Pakistan, the territory of Gilgit-Baltistan has had indeterminate status under Pakistan's constitution. It was in the aftermath of the Gilgit-Baltistan Empowerment and Self Governance Order 2009 that the region was finally named Gilgit-Baltistan in accordance with the locals' wishes, having previously been known simply as the Federally-Administered Northern Areas (FANA). The Governance Order further allowed GB to have its own legislative assembly for the first time.⁸⁹

Basharat Issa, a native of Gilgit-Baltistan and a lecturer at a university in Karachi, grew up in the 'last village' of Gilgit-Baltistan, Yasin Valley. Issa did his masters in Social Anthropology from London School of Economics, but before that, he did his primary schooling from his village before moving to Gilgit Town, and then eventually migrating to Lahore for higher education. Issa's research interests primarily lie in investigating the politics of the Gilgit-Baltistan region, particularly sociopolitical and other forms of marginalisation.

Issa has been involved as one of the organisers in the campaign #Internet4GilgitBaltistan, and has worked extensively to bring the issue to the mainstream. He says, "Just like we are politically and constitutionally marginalised, we are also digitally marginalised. I would mention it as a fact because this is in fact the case." According to Issa, "Our exoticised depiction contradicts the negligence that befalls our history and existence in Pakistan. We are absent from the national imagination, from mainland Pakistan."

He says that the region and its problems are neglected, and attributes it to the lack of representation in mainstream Pakistani politics. "I'd say that we are presented, not represented. Pick up [tourism] posters of the federal government, or see the videos of white vloggers who visit Gilgit Baltistan. They portray an image of everything being nice and peaceful in the region," adding that this representation is not true. "Because of this presentation, the actual issues of the region are brushed under the carpet." Issa highlights that these issues are diverse, "ranging from basic infrastructure, access to the internet, and even electricity. Nobody talks about this." Basharat posits that the mainstream electronic and

87. Siddique, A. (2020, July 9). Despite Protests And Promises, Pakistani Regions Denied Internet Access. Gandhara.

<https://gandhara.rferl.org/a/despite-protests-and-promises-pakistani-regions-denied-internet-access/30716739.html>

88. Ali, N. (2014, January). Spaces of nature: Producing Gilgit-Baltistan as the eco-body of the nation. Aga Khan University.

[https://ecommons.aku.edu/cgi/viewcontent.cgi?article=1285&context=pakistan_iced_pdc&context=1285&context=pakistan_iced_pdc](https://ecommons.aku.edu/cgi/viewcontent.cgi?article=1285&context=pakistan_iced_pdc&context=1285&context=pakistan_iced_pdc&context=1285&context=pakistan_iced_pdc)

89. Shahid, K. K. (2019, February 16). Gilgit-Baltistan: Pakistan's Geopolitical Loophole. The Diplomat.

<https://thediplomat.com/2019/02/gilgit-baltistan-pakistans-geopolitical-loophole/>

print media plays a huge role in this presentation as well – “these mediums do not give any coverage to our issues either, unless it’s a cultural event and even that only gets a short report in the name of coverage.”

He says, “Everything has to do with our citizenship status, which is in limbo, and the reason for marginalisation of this region. This is linked to the issue of human rights and responsibilities of the state in relation to the region. It is unfortunate that we don’t fall into a formal contract with the state; special grants are not enough to deal with the special problems of the province.”

He informs that in all of Gilgit-Baltistan, there is only one telecom and internet service provider that has limited capacity and capabilities to effectively and efficiently provide services to the entire region. He highlights that other telecom companies such as Telenor claim to be providing 2G/3G services in the area, but even their quality is very poor and inadequate. He says, “PTA and MoITT should be asked about why other service providers, including PTCL, are not providing services in Gilgit-Baltistan.”⁹⁰

On October 11, 2021, PTA announced the issuance of licences to Telenor, CM Pak that operates Zong in the country, and PTML that operates Ufone, to set up Next Generation Mobile Services in Gilgit Baltistan along with Azad Jammu & Kashmir. At the time, the Federal Minister for Kashmir Affairs and GB said that through these licences, “digital divide will be reduced and tourism will flourish further in the regions.”⁹¹ Yet, at the time of writing this report, the update on the provision of services and their quality remains unknown.

As a result of the efforts of the residents through various campaigns that they ran, along with previous PTI government’s vision of Digital Pakistan, the PTA along with MoITT has on various occasions announced efforts to increase connectivity in disconnected, underserved and unserved areas of the country.

In the past few years, when the issue of digital divide became evident, the government started to have a conversation on advancing internet connectivity and introduced initiatives to fill the gap. Apart from spectrum auctioning, issuance of licences and awarding various USF-funded projects to telecom and internet service providers, focus on ICT for women and digital skills development was also taken up through initiatives. The Digital Pakistan policy puts special emphasis on bridging the digital divide - not just geographic, but also gender. It focuses on enhancing ICT for girls by promoting “the use of ICT technology among women and girls for their empowerment and to bridge the digital divide,” and by initiating “ICT for Girls’ programs across the country for training in computing skills so that girls can have an opportunity to earn.” The Digital Pakistan policy also aims to provide “incentives to boost digital services and applications for Girls’ empowerment (direct-to-mobile strategy) lowering barriers to technology adoption.” In addition, the policy also emphasises that it will “strengthen international cooperation in the area of access to ICT and active participation of women and girls in the digital society,” along with providing “legal protection to women and girls to encourage online participation.”⁹²

However, the implementation of this policy is a grey area, and more so after the changing of the government in April 2022. On a policy level, barely anything has been done to bring

90. Interviewed for this research in March 2021 Press Release. Licenses For Next Generation Mobile Services In Aj&K And Gb Awarded. (2021b, October 11).

91. PTA. <https://www.pta.gov.pk/en/media-center/single-media/licenses-for-next-generation-mobile-services-in-ajk-and-gb-awarded-121021>

92. Digital Pakistan Policy 2018. (2018). Ministry of IT & Telecommunication. [http://moib.gov.pk/Downloads/Policy/DIGITAL_PAKISTAN_POLICY\(22-05-2018\).pdf](http://moib.gov.pk/Downloads/Policy/DIGITAL_PAKISTAN_POLICY(22-05-2018).pdf)

disconnected communities online, but during the pandemic, e-education became a focus of the government leading to setting up of computer labs in public schools and introduction of digital learning related policies in the education sector (discussed in **4.6: Competencies**).

4.5 - Local Content and Language

Indicators Assessment

Local Content and Language	Effective local language processing softwares and systems are available.
	Government websites, information about public services and other relevant information is easily available in local languages.
	There is ongoing and significant research and development on local language processing technologies in public and private technology institutions.
	There is a substantial and growing volume of content in different regional and indigenous languages, including user generated content.

Key Findings

Through various initiatives and value added services, the telecom industry is working to contribute to the promotion of local language and local content in the country.

English is given priority at the government level in official communications, including public notices and public officials' comments on the internet; most government websites are in English with no option to toggle between or change to local languages.

While making the internet inclusive through content development around local languages is part of the Digital Pakistan policy, little efforts have been made in this regard by the government. Most content produced and shared to promote Digital Pakistan on the internet has also been in English.

New smartphone applications introduced by the government are also being developed in Urdu. The Citizen's Portal application prioritises Urdu over English.

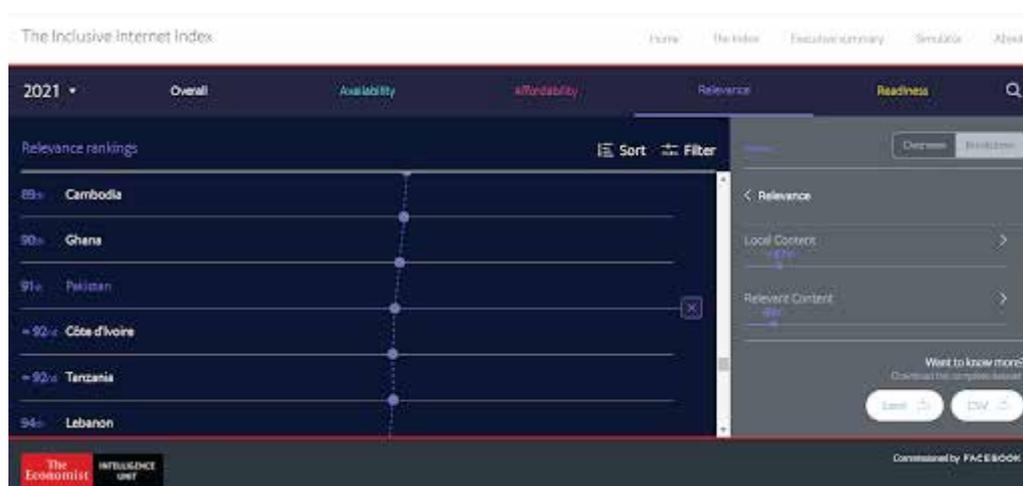
Native regional language speakers say that there is not enough representation of their regional language in news and entertainment media and in government communication, and this representation is also lacking on the internet in general.

Analysis

According to The Inclusive Internet Index 2021, Pakistan ranks 90th out of 120 countries surveyed by the Economist Intelligence Unit that examines the countries on the basis of four indicators: Availability, Affordability, Relevance and Readiness.⁹³ This ranking places Pakistan in the bottom quartile of the Index, and second to last in the Asia region. Where the country

93. Pakistan Overview: The Inclusive Internet Index 2021. (2021). Economist Intelligence Unit. <https://theinclusiveinternet.eiu.com/explore/countries/PK/>

scores the lowest for Availability amongst the four indicators, it ranks second worst in Relevance, and is placed at 91st on the indicator that looks at the extent of local language content and local content on the internet.⁹⁴



Pakistan scores 87th for Local Content, and 89th for Relevant Content with overall ranking at 91st for Relevance. Source: The Inclusive Internet Index 2021

This ranking is based on the analysis of the kind of content that is created on the Pakistani internet compared with its relevance with local audiences and context. Pakistan has a literacy rate of 59 percent as of 2017, according to UNESCO. Ethnologue finds that as of 2018, there are over 25 million English speakers in the country with a population of over 220 million people.⁹⁵ The statistics depict that there exists a huge gap in the understanding of a language that also enjoys the status of an official language along with Urdu, which is a national language and is understood by the masses in Pakistan.

English was made a de facto official language after the independence of the subcontinent in 1947 when British colonists left the region, and was constitutionally made the co-official language alongside Urdu in 1973 in Pakistan when its status was defined in its Constitution. It is granted priority in official documents and communications. This is further reflected in the kind of content that is created on the internet as well. Public officials and departments communicate in English in official notices, announcements and updates meant for the public, and also on their online profiles and websites.

Despite the fact that the internet transcends boundaries, content in local and regional languages is seen less and less in online spaces and English script continues to be the most common medium of communication on Pakistan's internet. This also has to do with the unavailability of Urdu and/or regional language scripts on keyboards in the past. It was not until recently that Urdu keyboard was introduced on smartphones. However, most online written communication in local languages is typed in Roman script that uses English alphabets to make use of phonetics.

94. Relevance: Pakistan Overview: The Inclusive Internet Index 2021. (2021). Economist Intelligence Unit.
 95. <https://theinclusiveinternet.eiu.com/explore/countries/PK/performance/indicators/relevance>
 Pakistan, Ethnologue, <https://www.ethnologue.com/country/PK/>

The Urdu keyboard was not made available on iOS until 2014 when a Pakistani-American software developer, Mudassir Azeemi, wrote to Apple’s Tim Cook after years of struggling to write in his native language. The keyboard that Azeemi made to type Urdu in 2010 was downloaded over 165,000 times in two years; however, the script was not supported on the phones it was being used on.

Similarly, the only Urdu typing software that is heavily used in print media, InPage, is restrictive in its application. The software is not actively updated, and has not seen significant updates since 2019. InPage, which enables writing Urdu script on Windows computers and allows for the script to be converted into vector for high resolution printing, is only available on select devices and operating systems, and is not accessible to people who would want to incorporate Urdu script in their communications, or in regular online content creation.

This restrictive use of Urdu and local and regional languages is also seen in the way the government communicates with citizens through its online portals, such as websites and smartphone applications, notices, official documents etc which are all, by default, in English. The official website of the Government of Pakistan is in English with no option to toggle between languages. In addition, the website of the National Heritage and Culture Division of the Government of Pakistan which is tasked to promote, preserve and regulate the use of local languages in the country, is also in English, with no option to change language.

While these websites are visibly outdated and have not been updated in recent years, the vision to make the internet more inclusive through content development in local languages is part of the government’s initiative of Digital Pakistan. However, the communications and outreach under the initiative have mostly been in English, with occasional switch to Urdu; even then, the most recent videos on its YouTube channel are entirely in English.

Most of the government departments’ websites that have evidently been updated recently are entirely in English. And while they do provide relevant and critical information which is timely updated on the platforms, all of this communication is primarily in English, and does not provide an option to switch to local or regional language. For instance, during the COVID-19 spread in the country, the Ministry of National Health Service Regulations and Coordination (NHSRC), commonly referred to as the Ministry of Health, actively updated its website with information related to the virus. However, despite the critical nature of the information and in light of the gap of understanding of English amongst masses, this information disseminated through the website in the form of updates, press releases and other news regarding the health crisis in the country was not offered in Urdu through the online platform. Additionally, the COVID-19 dashboard that was setup by the Ministry is also completely in English.

Sidra Jalil, a community builder, with 14 years of experience in the tech sector and working with local communities, says that all the government notices are primarily released in English and then their Urdu translation is done on a secondary basis. “Only a few government departments translate their notices into Urdu. They take it as value addition, and not as a mandatory symbol. For example, commissioner offices translate their notifications into Urdu

96. Kohari, A. (2021a, April 29). How to bring a language to the future. Rest of World. <https://restofworld.org/2021/bringing-urdu-into-the-digital-age/>
97. Government of Pakistan, <https://pakistan.gov.pk/>
98. National Heritage and Culture Division of the Government of Pakistan, <http://heritage.pakistan.gov.pk/>
99. 6. Local Languages Content Development, Page 11, Digital Pakistan Policy, [http://moib.gov.pk/Downloads/Policy/DIGITAL_PAKISTAN_POLICY\(22-05-2018\).pdf](http://moib.gov.pk/Downloads/Policy/DIGITAL_PAKISTAN_POLICY(22-05-2018).pdf)
100. Digital Pakistan (@DigitalPak_GoP), Twitter, https://twitter.com/DigitalPak_GoP
101. Digital Pakistan, YouTube, <https://www.youtube.com/channel/UC52mw6nNJKPTFHTBaKbSg>
102. Ministry of National Health Service Regulations and Coordination (NHSRC), <http://www.nhsrc.gov.pk/index>
103. COVID-19 Dashboard, Ministry of Health, <https://covid.gov.pk/>

because they acknowledge that they have to produce it for the masses and they cannot understand English. But all notifications from health and education departments are in English.” She highlights that where Urdu is not given a priority in official updates, the situation with regional languages on this level is even worse. “I have not seen any government notification in a regional language yet. But these languages are liberally used in jalsas, political rallies, and other gatherings. So if you think that regional languages are important enough to be used in these public spaces, then why do you not use [them] in official communication.”¹⁰⁴

Under the Digital Pakistan Policy, the Languages Authorities of the Ministry of IT & Telecom are designated to facilitate setting up of the mechanisms of creating local languages content development. The Policy directs the authorities to reduce digital divide through local content creation, designing of text to speech software, and R&D and collaboration initiatives.¹⁰⁵

Nevertheless, the barrier in creation of Urdu and local language content in official websites and documentations does not contribute to the bridging of the gap and in making the internet inclusive for everyone in the country. The Inclusive Internet Index gives Pakistan a score of 1 on a scale of 0 to 2 for Availability Of E-Government Services In The Local Language under the category of Relevance.¹⁰⁶ This indicator looks at whether the government of the largest city in the country offers e-governance services, including applying for a business licence or permit. The score of 1 indicates that while the main local government authority Karachi Metropolitan Corporation (KMC) of Karachi, the largest city of Pakistan, does have a website, it does not allow for conducting transactional services online. However, the Index does not clarify the status of the local language content on the surveyed websites.

Shabahat Ali Shah, former CEO of National IT Board (NITB), says that the government is taking initiatives to make websites and applications inclusive of Urdu language. “We, the government, are developing both versions side by side. We make sure that whatever app we develop, there is a version of the local language that should be developed, and that people have the option to navigate through any of the languages.” Shah says that the government is doing it on its level, and highlights that a lot of private sector companies are taking similar initiatives. “Demand pulls the supply here. If there is a demand, I think it is going to be built. I don’t think we need to worry too much about [content in local languages being developed]. The market drives [this] phenomena.”

One of the most downloaded government apps that is developed by the NITB, Citizen’s Portal, has over 1 million downloads on Google Play Store,¹⁰⁷ and offers Urdu text next to the English text, instead of the ability to toggle between the two languages. The app that was launched in 2018 allows citizens to report any complaints to the Prime Minister’s office directly. It asks for the basic information to register an account, which includes full name, CNIC Number, phone number, whether the person is an inland citizen or overseas Pakistani or a foreigner, and a password. All the content is simultaneously presented in both English and Urdu. The app seems to be prioritising Urdu over English based on Urdu text appearing on top, and some sections of the app being entirely in Urdu.

104. Interviewed for this research.

105. Annexure-1, Roles & Responsibility Matrix, Page 23, Digital Pakistan Policy, [http://moitgov.pk/Downloads/Policy/DIGITAL_PAKISTAN_POLICY\(22-05-2018\).pdf](http://moitgov.pk/Downloads/Policy/DIGITAL_PAKISTAN_POLICY(22-05-2018).pdf)

106. Local Content, Relevance. Pakistan Overview: The Inclusive Internet Index 2021, (2021). Economist Intelligence Unit. <https://theinclusiveinternet.eiu.com/simulator/countries/PK/relevance/local-content>

107. Apple’s App Store does not indicate the number of downloads for any app, hence it was not possible to specify that number on iPhone and other Apple products



Welcome screen | Sign in Screen | Sign up screen. Source: Citizen's Portal



Urdu text appears before English text, possibly indicating the priority being given to the local language.
Source: Citizen's Portal

Sidra Jalil says that it is the government's responsibility to ensure that local languages are used on official platforms and in notifications from the government. "Of course, the government alone cannot work progressively, and citizens and community service providers play an important role in bringing any change. [The promotion of Urdu language] can be outsourced to one of the many independent volunteer-led organisations working on promotion of the language; there's even a Tiger Force that the Prime Minister [Imran Khan at the time] himself started which is a huge network of volunteers. They can play a very important role if [the government] tasks this network to dedicate some hours to translate online content and service into Urdu."¹⁰⁸

108. At the time the interview was conducted in April 2021, former Prime Minister Imran Khan and his party Pakistan Tehreek-e-Insaf (PTI) were the ruling party. Prime Minister Imran Khan was ousted through a no-confidence motion by opposition parties in the parliament on April 10, 2022.

She adds that the core responsibility continues to lie with the government to begin the promotion of Urdu and regional languages through its own platforms. “Whenever there is an official notification being issued, the government departments must make sure that it is being released in both English and Urdu. And once it’s issued, it should be placed on official websites as well.” Sidra mentions that just as the promotion of the Citizen’s Portal has been made mandatory for every government website, then it should be equally important for the government to translate websites and notifications into Urdu as well.

It is also imperative to look at the local news being offered in local languages by mainstream media on the internet. The Inclusive Internet Index gives the score of 4 to Pakistan on the scale of 0 to 4, indicating that the domestic news websites do publish news content in local languages at least weekly, which is the threshold for the Index to determine scoring.¹⁰⁹ Most mainstream media channels produce online news content in Urdu and regional languages by default, with some being exceptions where the website is primarily in English and only produces English content.

Regional languages

While it is critical to examine whether the government and various industries are contributing to the development of local language content, it is also important to analyse whether other regional languages are given importance in content development on various levels. Although the most popular language in official documents remains English, and entertainment content does seem to have adequate Urdu representation, the 74 regional languages that are spoken in Pakistan rarely get attention on mainstream platforms, and are restricted to accounts and platforms dedicated to those languages. According to the 2017 census data of Pakistan Bureau of Statistics (PBS), the majority of the population in the country (38.77 percent) recognises Punjabi as their mother tongue, Pashto being second with 18.24 percent of population identifying as mother tongue, while Urdu is recognised by 7 percent of the population as their mother tongue.¹¹⁰

For this research, a flash survey with 20 respondents who represent 7 regional languages of Pakistan was conducted through crowdsourcing via Twitter, to understand whether online content is generated in their language. This standardised survey looked at three aspects of this content creation: government level, media level (news and entertainment), and user level.

The surveyed languages included Sindhi, Balochi, Pashto, Saraiki, Punjabi, Hindko and Mawati. 75 percent of the respondents were native speakers, 20 percent were fluent speakers, and only 1 respondent had intermediate understanding of the language they were representing which means that they could speak and understand the language but are not very fluent in it. 95 percent of the respondents spoke the language everyday, and 70 percent use it in their daily communication on the internet.

While 20 is not the number indicative of the experiences of large number of populations that speak and represent various regional languages in the country, the survey was conducted to generalise the anecdotal experience with an assumption that the surveyed individuals, via their social circle, navigate the part of the internet that uses the regional language in their

109. Local Content, Relevance. Pakistan Overview: The Inclusive Internet Index 2021. (2021). Economist Intelligence Unit. <https://theinclusiveinternet.eiu.com/simulator/countries/PK/relevance/local-content>

110. Census 2017. (2017). Population By Mother Tongue, Sex And Rural/ Urban. Pakistan Bureau of Statistics. https://www.pbs.gov.pk/sites/default/files//population_census/census_2017_tables/pakistan/Table11n.pdf

online content production.

Keeping this in mind, where 75 percent of respondents said that they post spoken and/or written content in the regional language they speak on the internet regularly, 50 percent of the total respondents said that they regularly see content in this language from others on their timelines. However, despite the fact that 70 percent of the respondents said that people are constantly writing and producing online content in the language they represent, 75 percent said that there is not enough content being developed in their language.

With regards to the news in regional languages, 85 percent of the respondents said that the news is regularly posted in their respective language, but 55 percent said that they do not access it regularly. Entertainment content in regional languages saw a divide as well where 60 percent said that quality entertainment content is not being developed, and 70 percent said that what is developed is available on the internet to be accessed.

90 percent said that there is not enough representation of their regional language in news and entertainment media and in government communication, whereas, 75 percent said that there is not enough representation of their language on the internet.

A doctor by profession, Muhammad Jan Leghari is a native Saraiki speaker, and says that the responsibility of increasing representation of regional languages lie with the government. Wardah Noor and Haseeb Ahmad, who are both entrepreneurs and native Saraiki speakers, agree with Leghari. Waqas Alam, who is a journalist by profession, and is a fluent Sindhi and Balochi speaker, also confirms and says, "Inclusion of regional languages in state affairs, media advertisements and curriculum, and limitations to English obsession in corporate culture and competitive exams" can lead to increasing representation of regional languages on the internet.

Shafeeq Gigyani, who is a native Pashto speaker, and a development practitioner, seconds and says that the government should make regional languages part of the school curriculum until at least eleventh grade.

An anonymous respondent of the survey who is a native Pashto speaker, emphasises that the public officials should use regional language in their communication on the internet instead of just in Urdu and English, in order to increase the spread of these languages online.

Muizze Kamran, a native Punjabi speaker, seconds these comments and says that the government and media houses should focus on creating more content in regional languages. "There should be more news channels that use the Punjabi language, more books published in Punjabi and more good quality entertainment in the language rather than the main form of television representation being trashy stage shows and dramas." Granaz Baloch, a native Balochi speaker, agrees with Muizze and says that, "the government needs to initiate news channels, and literary magazines must be available to [give] more representation [to regional languages]. Public documents must be available to anyone [in their regional language] who cannot read Urdu."

Sanodia Abrar, a sales professional, is a native Pashto speaker, and says that the issue hindering the spread of regional languages in Pakistan is the way they are regarded in the country. In particular, Sanodia refers to Pashto's treatment in the country that has been subjected to disrespect and negative connotations attached to it, and says, "The main problem is the rash & disrespectful stereotypes attached with Pukhtoos. If we work on those, we can then normalise and humanise Pashto and Pukhtoos."

Muhammad Asad, a fluent Saraiki speaker and a student, agrees and says that the responsibility of increasing representation lies with the native speakers of the language. "Most of the people who have Saraiki as a native language and have moved to big cities don't even speak it any more."

Nirmal Riaz, a student and native Sindhi speaker, agrees and says that regional languages in Pakistan are only appreciated in specific circles, mostly among the native speakers and the regions the languages belong to. "Representation usually lies with patrons of arts, or institutes built for the purpose of promoting arts and culture in general but I feel like the patronage towards regional languages in Pakistan is very limited and exists only in specific circles," she adds.

Whereas, Shahroze Ahmed Shaikh, a teacher by profession and a native Sindhi speaker, says that it is a multifaceted problem. "For instance," he says, "There aren't many online portals which allow one to type Sindhi properly, lack of resources and funding for Sindhi media channels and publications which keep them from expanding online, etc."

Madyha Leghari, a native Saraiki speaker and an artist by profession, says that apart from the government and community, this responsibility also lies with private enterprises, especially in the context of how the internet is inherently designed.

Ibrar Khan, Vice President Corporate and Economic Affairs at Jazz, says that the telecom sector is dedicated to promoting local languages and local content in the country, and calls the industry a prime example of this. "90 percent of the value added services of Jazz are locally developed and locally nurtured in Pakistan. For example, whenever an exceptional startup is incubated at the National Incubation Centers that we have, Jazz is the first one to facilitate them. There are over 700 local companies whose services we utilise, and the content that they produce are in both Urdu and English." Ibrar Khan acknowledges that a lot of things are bundled abroad, but the majority of these services are being developed and done in Pakistan.

Irfan Wahab Khan, CEO of Telenor Pakistan, shares that Telenor has been actively involved in encouraging the development of local content in local languages in the country through various initiatives. He says, "Having such a diverse customer base, we certainly look to encourage content creation in local languages through our partners. When it comes to digital content, Telenor Pakistan aims to have 'Something for Everyone', and we are developing a content portfolio to cater to all genres as well as indigenous consumer segments." Wahab Khan adds that various partnerships help the telco to advance the promotion of local content in the country, "The spectrum of our content portfolio stretches across the premium market through our partnerships with Netflix, Starzplay & Spotify. We have products like Goonj which is a TV streaming app, Vidly for on demand movies [and] dramas, Bajao for premium Urdu and English music, Filmpoint for Punjabi movies, Teleclips for regional movies, and Koyal for regional music. We also have advisories for [the] farming community available on Khushaal Zamindaar in three local languages."

4.6 - Competencies

Indicators Assessment

Competencies	Use of ICTs digital and information literacy is a part of school curricula.
	High quality STEM and ICT courses are offered at higher education levels and are easily accessible to all segments of the
	Media and Information Literacy programs are in place, specially for citizens without formal literacy.
	Educators in public and private educational institutions are well versed with ICTs and use technology skillfully.

Key Findings

Pakistan's public expenditure on education as a percentage to GDP is estimated at 2.3 percent in the fiscal year 2019-20, which is the lowest in the region.¹¹¹

Literacy is defined as the 'ability to write and read', and in Pakistan it is more narrowly defined as the ability to do signature, and an illiterate person is one who cannot do his/her signature. For successfully enabling literacy, digital literacy must be included in the definition.

Various digital literacy and STEM education initiatives were announced in the aftermath of the COVID-19 pandemic, however, these initiatives continue to remain redundant when the country has the second highest number of out-of-school children between the age of 5 to 16 years.

The government had introduced various initiatives through public and private partnerships to promote e-education, especially during the COVID-19 pandemic. These initiatives include the etaleem Initiative that focuses on teleschool and a radio school, and are established by the Ministry of Education in partnership with Digital Pakistan Initiative.

It is important to not only increase the allocated budget for education, but also dedicate a budget for digital literacy programs.

Analysis

The world is now witnessing a fourth industrial revolution which places a huge emphasis on ICT skills. In absence of such skills it can create a digital divide that may drive the economic disparity between those who are digitally literate and those who are digitally illiterate to

111. Education Budget of Pakistan. (2021). Pakistan Alliance for Girls Education. <https://page.org.pk/education-budget-of-pakistan/>

unprecedented levels. The present and past governments have put emphasis at policy level to make ICTs and STEM education an integral part of the formal sector education in Pakistan. However, the budget allocated to education is not enough to fill the gulf that remains in building capacities of the teachers and students to take full advantage of technological revolution. In the fiscal year of 2020-21, the government allocated 8.3 billion Rupees for Education Affairs, a 2.5 percent increase from the previous year 2019-20.¹¹² However, in the Human Development Report 2020, Pakistan ranks 154 out of 189 countries in the United Nations Development Programme's (UNDP) Human Development Index (HDI), dropping two places from the previous year 2019.¹¹³ The index finds that the expected years of schooling is 8.3 years, with mean years of girls education being 3.8 years and mean years of boys education being 6.3.¹¹⁴

The Constitution of Pakistan guarantees the right to education as a fundamental right under Article 25A, and states, "The State shall provide free and compulsory education to all children of the age of five to sixteen years in such manner as may be determined by law." But a 2018 Human Rights Watch report states that no concrete efforts have been made by the government to ensure provision of education to the citizens.¹¹⁵ Where most of the people have access to education through the public sector, the facilities lack very basic infrastructure to establish a conducive study environment. With the exception of a few, most of the educational institutions do not provide free access to internet services on campus, if at all. Previous governments have offered schemes to provide laptops to students in higher education institutions to promote digital connectivity, but without the internet those devices are of not much use.

The lockdown imposed during the COVID-19 pandemic in the country revealed that a laptop with no working internet connectivity offers very little value to the students who have returned to their hometowns with no internet access, or for those who could not afford a continuous access.

However, despite this, the status of ICTs and STEM at primary, secondary and tertiary levels are equally worse due to lack of infrastructure and skilled teaching staff. Where universities may have computer libraries for students to access, these facilities do not exist liberally in primary and secondary schools under the government's control. There are two universities in the entire country that offer distance learning programs on the degree level, including Allama Iqbal Open University (AIU) and Virtual University, in different disciplines including ICT, computer sciences, Business and Administration, at different levels across Pakistan.

Beginner's level courses of varying difficulty levels in Computer Sciences are offered at middle, secondary and higher secondary levels. Advanced and professional degrees in ICT and computer studies are offered at university levels at both private and public sector institutions. However, the public sector institutions largely lack modern and working infrastructure to effectively impart this training.

The previous government by the Pakistan Tehreek-e-Insaf (PTI) had put extraordinary emphasis on digitisation in every sector including education. In March 2020, the Ministry for

112. *Education Budget of Pakistan*. (2021). Pakistan Alliance for Girls Education. <https://page.org.pk/education-budget-of-pakistan/>

113. *Human Development Index Ranking*. (2020). UNDP.

https://hdr.undp.org/?utm_source=EN&utm_medium=GSR&utm_content=US_UNDP_PaidSearch_Brand_English&utm_campaign=CENTRAL&_src=CENTRAL&_src2=GSR&gclid=Cj0KCQjwplmTBhCmARIsAKr58cxWK3pZD1aiiLoL0sX7YfdiB-tTxDYorBEyBoz9MldC2sfr-7LD0OcaAu_LEALw_wcB

114. *Human Development Indicators. Human Development Report 2020*. (2020). UNDP. <https://hdr.undp.org/en/countries/profiles/PAK>

115. "Shall I Feed My Daughter, or Educate Her?" (2018, November 13). Human Rights Watch.

<https://www.hrw.org/report/2018/11/12/shall-i-feed-my-daughter-or-educate-her/barriers-girls-education-pakistan/>

Science and Technology announced in 2020 that 456 schools will be converted into STEM schools and the number will be doubled in the next one year.¹¹⁶ Later in August 2020, the then-Prime Minister Imran Khan approved the setting up of computer labs in 40 higher secondary schools in collaboration with universities.¹¹⁷

The National Education Policy also stresses upon innovative use of technology. It states that ICT should be used to maximise and achieve results in the education sector. The action plan in face of COVID-19 has proposed measures to ensure home based learning for students across Pakistan. It emphasises on self- to guided-learning programs from primary to higher secondary which are being proposed by employing technology and ICTs. This includes measures for self-learning which involves provision of home based learning materials including workbooks, notebooks and textbooks, TV and radio-based learning programs, featured smartphone apps and web platforms for learning, digital audio books and use of social media in facilitating e-learning, online digital classrooms and video conferencing.¹¹⁸

However, Pakistan has the highest number of out-of-school children worldwide after Nigeria; approximately 22.7 million Pakistani children aged 5 to 16 — 44 percent of this age group — did not participate in education in 2017.¹¹⁹ The government's initiatives on ICTs education under its extensive Digital Pakistan policy do not acknowledge that poverty is the main reason for massive school dropout rates. The 2018 HRW report states, "Across all provinces generation after generation of children, especially girls, are locked out of education—and into poverty. In interviews for this report, girls talked again and again about their desire for education, their wish to "be someone," and how these dreams had been crushed by being unable to study."¹²⁰ The report states that with the lack of focus of the government on education, private, unregulated schools took up the opportunity to offer low-cost education, "which in many areas are the only form of education available to poor families." It further mentions, "While attempting to fill a critical gap, these schools may be compromised by poorly qualified and badly paid teachers, idiosyncratic curricula, and a lack of government quality assurance and oversight."¹²¹

The Policy Objective II of the Digital Pakistan Policy of the previous PTI government was focused on promoting the use of technology in education along with other sectors, and states, "Encourage the use of ICT in public schools and ensure they are online and have a meaningful impact on the current education ecosystem in a phased manner."¹²² During COVID-19 and in the aftermath, this policy focused on creating smart universities and worked on providing university students with 'smart bags' that have a laptop; in creating Smart Classrooms to make ICT an integral part of learning supported by smart campuses under which blanket WiFi coverage is provided across the universities. e-Education policy envisages TeleTaleem which focuses on primary to tertiary levels and from teacher education to technical education and training – focusing highly on the use of video conferencing.

116. Ehsan, S. (2020, March 13). *Government planned to convert 456 schools into STEM schools across the country*. Technology Times.

<https://technologytimes.pk/2020/03/13/government-convert-456-schools-stem-schools-country/>

117. Shehzad, R. (2020, August 21). *PM approves STEM education project*. Express Tribune.

<https://tribune.com.pk/story/2260608/pm-approves-stem-education-project>

118. *Pakistan National Education Response And Resilience Plan (K-12) For Covid-19*. (2020, May 4). Ministry of Federal Education and Professional Training, Government of Pakistan.

http://moft.gov.pk/SiteImage/Misc/files/0_%20NERRP%20COVID-19%20MoFEPT%204%20May%202020%20Ver%2001.pdf

119. *Pakistan Education Statistics 2016 -17*. (2018, March). Ministry of Federal Education and Professional Training, Government of Pakistan.

<http://library.aepam.edu.pk/Books/Pakistan%20Education%20Statistics%202016-17.pdf>

120. "Shall I Feed My Daughter, or Educate Her?" (2018, November 13). Human Rights Watch.

<https://www.hrw.org/report/2018/11/12/shall-i-feed-my-daughter-or-educate-her/barriers-girls-education-pakistan/>

121. Ibid.

122. *Digital Pakistan Policy 2018*. (2018). Ministry of IT & Telecommunication.

[http://moib.gov.pk/Downloads/Policy/DIGITAL_PAKISTAN_POLICY\(22-05-2018\).pdf](http://moib.gov.pk/Downloads/Policy/DIGITAL_PAKISTAN_POLICY(22-05-2018).pdf)

The government had introduced various initiatives through public and private partnerships to promote e-education, especially during the COVID-19 pandemic. These initiatives include the etaleem Initiative that focuses on teleschool and a radio school, and are established by the Ministry of Education in partnership with Digital Pakistan Initiative.¹²³ Other digital platforms in partnerships with various other organisations working on education and ICTs include Noon Academy, Muse, Sabaq Foundation, Knowledge Platform and Taleemabad.¹²⁴ The basic aim of the education focused Digital Pakistan policy is to personalise the education experience for learners by offering flexibility and tailoring the learning experience.

The Digital Pakistan policy, through its focus on e-education, also aims to improve reach and accessibility based on equal access through different tools of technology, such as, internet and use of social media platforms. It also envisions personalised educational experiences for students. The barrier to this goal is the cost of the devices i.e. mobile phones and the internet packages which are not affordable for the masses (discussed in **4.2 Connectivity and Usage** and **4.3. Affordability**). Further to this, even when people are able to afford or have access to a smartphone or a laptop and an internet connection, they lack digital literacy which keeps them from utilising the socio-economic and informational benefits that the ICTs may bring. For instance, the majority of those from the working class are unable to benefit from the government's economic programs like Benazir Income Support Program (BISP) and Employees' Old-Age Benefits Institution (EOBI) because of lack of digital illiteracy.

The policy posits that remote learning will also help reduce gender and urban-rural disparities in education. The access to education ultimately reduces information asymmetries and equalises opportunities for the masses. This however can be contested based on unequal access to the Internet when it comes to different regions/provinces of Pakistan.¹²⁵ During lockdown in the face of COVID-19, the students from areas such as Gilgit Baltistan and Balochistan had suffered the most loss, as they did not have access to networks, let alone Internet. The students living far from the urban centres were not able to attend classes or take online exams because of various reasons, including but not limited to lack of internet access in the region, unavailability of mobile networks, and in a lot of instances, because of disconnection of electricity and load shedding in their vicinity. These barriers did not just impact their education, but also barred them from accessing credible information about the COVID-19 pandemic.¹²⁶ Umar Wazir, a journalist from Waziristan shares that a local resident who he spoke to "has adopted all precautionary measures to prevent the contamination of the virus. But due to the lack of concrete information among other residents, he is constantly at risk." Daraz informs, "A man shook hands with him, hugged, then blew on his face, and said that your faith is weak. The resident says that a lot of people are still taking the virus as a joke and a conspiracy."¹²⁷ Unless this digital divide is dealt with, the particular objective of Digital Pakistan to promote e-education across the country cannot be achieved, rather it will increase this divide by excluding disconnected people from new initiatives and policy measures.

The Digital Pakistan policy also suggests that as processes will be digitised in the education system, efficiency and cost savings are promoted. For example, Mobile Financial Services can

123. e-Taleem Initiative. (2020). Ministry of Education. <https://etaleem.gov.pk/digital-platforms>

124. Digital Platforms. e-Taleem Initiative. (2020). Ministry of Education. <https://etaleem.gov.pk/digital-platforms>

125. Kamran, H., Rehman, Z., & Khan, Z. (2021, January). Women Disconnected: Feminist Case Studies on the Gender Digital Divide Amidst COVID-19. Media Matters for Democracy. <https://www.digitalrightsmonitor.pk/wp-content/uploads/2021/01/Women-Disconnected-Gender-Digital-Divide-in-Pakistan.pdf>

126. Kamran, H. (2020, April 1). An Internet Shutdown Is Keeping Coronavirus Information From Millions in Pakistan. Slate Magazine. <https://slate.com/technology/2020/04/coronavirus-covid19-pakistan-internet-shutdown-fata.html>

127. Wazir, U. D. (2020, April 20). DRM Exclusive: Internet Shutdown in former FATA - Online classes a hurdle to right to education of students in the region. Digital Rights Monitor.

<https://www.digitalrightsmonitor.pk/drm-exclusive-internet-shutdown-in-former-fata-online-classes-a-hurdle-to-right-to-education-of-students-in-the-region/>

be utilised to automate financial transactions for students and parents. Furthermore, attendance of both teachers and students can be monitored through the use of digital technology. The value of this digitisation became clear during the COVID-19 pandemic when classes went online, and parents, teachers and students found themselves struggling to attend classes and mark attendance digitally. Under the Digital Pakistan policy, several programs ranging from skill and development training for teachers to provision of computers, digitising of books, biometric attendance for students and teachers, cash benefits for ensuring female enrollment in schools were launched in provinces that eased some of the challenges that schools and students were facing, however, the follow-up and implementation effectiveness remains unclear.

In addition, communication can also take place more effectively between parents and the schools. The possibility of this being happening can be increased once the definition of literacy is revised and replaced with an all encompassing principle that goes beyond the ability to read and write one's own name, and includes digital literacy as well. This is only when digital literacy will and can be taken up more actively on primary and secondary education level. Unless digital literacy becomes a policy focus, all other innovations in the ICTs, STEM education and media literacy becomes irrelevant. It simply cannot be assumed that a literate person determined by the current standards is also digitally literate.

In conclusion, to make the masses benefit from developments in ICTs and STEM education it is important to not only increase the allocated budget for education, but also dedicate a budget for digital literacy programs. It is also imperative to focus on developing the infrastructure of the public sector institutions to enable digital technology and increase the capacity of teachers to operate and impart formal and non-formal curriculum on digital literacy. Along with this, the governments – federal, provincial and local – must encourage and improve public-private partnership in providing network and internet in all regions of the country. A study conducted by the GSMA found that around 40 percent of mobile phone owners who do not use the mobile internet had difficulty understanding how to use their mobile handset, so to bridge this gap, access to devices and a working internet connection is important.

To enable all of this, it is critical that the government focuses on making the internet and digital devices accessible and affordable to everyone in the country.

Access to the internet should be considered as a fundamental human right. It is unfortunate that Pakistan is far behind in this regard. While some efforts are being made to bridge the digital divide in Pakistan, the nuances involved in the right to internet access are not being addressed adequately. Having a working internet connection is a matter of personal and collective wellbeing. Moreover, the pandemic has clearly shown that we depend on the internet now more than ever.

Having said that, there are several factors to consider when we talk of digital access and inclusion. We believe that it is important that digital rights defenders deconstruct the mythology of the internet that assumes that the internet is inherently democratic, participatory, and emancipatory, so we can strive toward an internet that lives up to its inclusive potential. This means working toward a higher standard of equity and equality than access alone and a stronger metric of participation than just freedom of expression. We need to work together to build and defend an internet that is truly of, by, and for us all. This work begins with a process of engagement, consultation, and collaboration. We must centre the knowledge of marginalised communities in internet governance, infrastructure, and content.

The internet should be central to our human rights debates, but we have to move beyond spectrums of access (from unconnected to connected) or expression (from censorship to freedom). Meaningful human rights of the internet need to recognise the power imbalances built into this system, including at the point of access. If extending internet connectivity continues in its current form, the internet we experience will only replicate and intensify the inequalities that marginalised communities endure offline every day. Marginalised peoples—the majority of the world—deserve meaningful online access, and we deserve to share our histories and knowledge easily and safely. Only then will the human rights of the internet result in knowledge justice online.

This is not just a matter of mere access to the internet though. Meaningful access can only be achieved if Pakistani internet users are also able to access tech that is Free and Open Source (FOSS), interoperable, and decentralised. Such technology is sorely needed in Pakistan, and if built, it can ensure that no institution anywhere in the world could own or control it. This would alleviate many problems of territorial jurisdiction. Adding in new legal tools to complement an overhaul of the digital ecosystem would further strengthen digital rights in Pakistan.

According to Tania Aidrus, the former Head of ex-Prime Minister Imran Khan's Digital Pakistan Initiative, it is clear that Pakistan has to simplify access and digital connectivity, and reduce the coverage gap. More than half of mobile connections do not have active mobile broadband connections; we need to understand why. The reasons likely range from cost to socio-economic factors; we need to tackle those systematically. Additionally, while we have reached over 116 million broadband subscribers as of March 2022, some basic hurdles need to be removed for the remaining Pakistanis. Handset prices need to be curtailed, while the government continues to explore ways to both reduce the tax burden on imports and drive local production. The right incentives across the board will be required to achieve this. The private sector also has a role to play, with some operators already offering instalment plans on low-cost handsets. If we are to truly start thinking of the internet as a fundamental right for all, the ecosystem needs to work together to make solving these issues a priority.

1. Ensure that human and social justice values drive technical development and use in Pakistan.
2. Ensure that all policies and regulations related to internet access follow a rights respecting model.
3. Make every effort to bridge the digital divide in terms of class, gender, age and geography, and focus on increasing digital literacy.
4. Make the internet economy work for everyone.
5. Address the need for online social norms, and empower people to shape their own future.
6. Put users' interests first with respect to their own data, and take a collaborative approach to security. In addition, accountability for data handlers must be increased.
7. Build strong, secure, resilient networks.

List of Interviewees

Basharat Issa is a resident of Gilgit Baltistan (GB), currently working in Karachi, Pakistan as an Assistant Professor at Habib University. He has been working on campaigning around internet blackouts in GB through online and offline efforts, including running a campaign #Internet4GilgitBaltistan

Shabahat Ali Shah is serving as the Chief Executive Officer of National IT Board since 2019. He is also the Chairman of Board of IGNITE and among the Board of Directors of Universal Service Fund (USF), Pakistan Telecommunication Corporation Limited (PTCL) and National Telecommunication Corporation (NTC).

Sidra Jalil is a Marketing and Research Enthusiast with diverse 13 years of experience of Technology and Social Sector related to Research, Communications, Digital Marketing and Innovation. In the track of Internet, Information technology and telecommunications, she has contributed to the ecosystem wearing several hats yet the objectives are the same, i.e. to promote innovation and support in developing tech savvy society.

Irfan Wahab Khan is the CEO of Telenor Pakistan. Khan has over 20 years of diverse management experience with leading telecommunication companies across North America, Europe and Asia. Since 2009, he has served as Group Vice President Devices and VP-Head of Asia Distribution within the Telenor Group in Norway and Thailand respectively.

Sidra Kamran is a PhD candidate in Sociology at The New School where she explores how contemporary capitalism both creates and burdens new forms of social life in cities in the Global South. She's working on the research around how TikTok and other social media platforms enable women towards financial independence.

Ibrar Khanis the Vice President Corporate & Economic affairs at Jazz. He is a senior telecom industry professional with over 30 years of experience in telecom and services, is a go to professional in the fields of Commercial development, Corporate, Regulatory and Public Affairs in Pakistan. Has embraced senior management roles for over 20 years including Country Head Sales and Distribution from 1994 to 2002 at Jazz and as Consultant for Telecom Operators in Pakistan, Afghanistan, Tajikistan, Uzbekistan, Maldives and Philippines.

