



ISSUE 43
March - April 2020

The inevitable growth of 5G infrastructure cost;
can MNOs maintain the profits?

Pakistani Startups Making
Waves Internationally

Video Gamers-The New
Social Media Celebs

History Of
Pandemics





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Adnan Khan
Managing Editor

Dear readers,

Since the start of 2020, a new respiratory infection called COVID-19 starting spreading in China that briskly engulfed the whole world. More than 200 countries have reported COVID-19 infections, while the outbreak has been declared a pandemic by the World Health Organization (WHO). Sadly, Pakistan is one of the countries where the infection is spreading rapidly with more than 1300 cases reported throughout the country till date.

Our telecom and IT industry is playing a monumental role in current time of emergency. The industry is not only making valuable donations in the relief funds but the technological interventions introduced over the years are now providing much needed facilitation to the people. From education, health, and stay-at-home jobs to banking, and commerce; everything has gone digital. The modern technology has been the true blessing in these difficult times which is quite comforting. We all need to come forward and play our part in this national emergency.

To undergo a pandemic at like this is a nightmare that our country is living at the moment. But we are sure that with the grace of Almighty Allah we will get through these trying times and emerge as a stronger nation. As you all know that the government has implemented social distancing to curtail the spread of Covid 19 and businesses have been closed down either completely or partially. Therefore, this time we will not be printing our magazine but our esteemed readers can download the digital copy of the latest issue from Phone world's website.

In these challenging times, we are all navigating through uncertainty for ourselves, our loved ones and our community. We hope you are staying healthy and safe.

Thank you,
Adnan Khan
Managing Editor

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By Zainab Saeed

How will AI make all our woes disappear?



Most people are probably not familiar with the Artificial Intelligence concept, so before heading towards any discussion, we all should know what exactly AI is? Basically, Artificial intelligence (AI) is making a computer program or a machine able to think and learn. AI technology is making computers smart. It transforms every aspect of life. Moreover, it enables people to rethink how we integrate information, analyze

data, and use the resulting insights into the improvement of decision making.

AI enables people to rethink how we integrate information, analyze data, and use the resulting insights into the improvement of decision making

Artificial intelligence is altering the world but are those changes beneficial? That's the billion-dollar question.

The experts believe that artificial intelligence will impact the fortune of every industry and of course, the future of every person on the planet earth. Artificial intelligence is valuable in driving the emergence of new technologies such as big data, robotics and IoT, in the future, it will act as a technological innovator.



Artificial intelligence is valuable in driving the emergence of new technologies such as big data, robotics and IoT

It is believed that artificial intelligence will resolve a lot of problems that we are facing presently. The focus of AI is not just on cool home gadgets or on process optimization and automation but can be used to rethink how to solve the world's problems.

AI has a great potential to improve different aspects of life, including healthcare, education, poverty and security. Today, AI machines are doing very beneficial things which were not possible for humans to do on their own.

All the tech giants are now focusing on building AI solutions for good. Following are some of the challenges that we are facing today but can get rid of them in future with the help of AI.

Hunger

United Nations estimated that to feed the world's population by 2050; there is a need to increase food production by 70% across the globe. Artificial Intelligence can help us in this context by detecting disease for earlier interventions, automating the tough tasks and applying herbicide accurately. AI can develop seeds production and maximize the production of crops.

United Nations estimated that to feed the world's population by 2050; there is a need to increase food production by 70% across the globe

Health Care

AI has brought a massive revolution in the health care sector, and with time, it is helping to detect the disease before the involvement of any medical professional. It is also assisting the healthcare staff in the care of the patient that is under observation.

Artificial intelligence is developing innovative drug therapies and customized medicine, robots are also supporting in the surgeries

Volumes of data created by Healthcare systems will remain unused without the artificial intelligence support. It is important to note that not only the artificial intelligence is developing innovative drug therapies and customized medicine, but robots are also supporting in the surgeries.

Human Rights

Artificial intelligence can help the world to reduce human rights violations to a great extent by identifying human trafficking quicker in a more comprehensive way. The AI face recognition technology can help us to find missing people by analyzing the photos correctly.

Education

Artificial intelligence can support the learning in and out of the classroom with its valuable tools. It has excellent potential to bring a drastic transition by the learning of any course, any time, from anywhere across the globe. AI-powered education is helping to equip students with fundamental IT skills. In the future, with the help of AI, students will be able to get access to a broader range of courses.

Helping People with Disability

AI technologies help to solve general accessibility, transportation and communication problems. It is enabling people to live an independent life. Primarily, AI facilitates the disabled people in employment and improvement of their daily experience by reducing or removing technology barriers that people with disabilities are facing.



Combat Fake News

Artificial Intelligence can be used to fight against the spread of fake news by verifying the authenticity of the articles and news. Humans can't identify the fake news as the amount of content generated daily is uncountable. Still, AI can offer a smart solution to identify fake news by using predictive analytics. Many social media platforms and news organizations are using artificial intelligence (AI) tool to weed out false stories.

Climate Change

We all are aware of the fact that our planet is facing a significant issue of climate change. If we fail to take appropriate action on time to solve this global issue, then there is a possibility that the problem can get more severe. But AI can give us benefit by providing solutions to tackle this current challenge. The AI inventors are developing different ways to control the significant issue of climate change by applying some useful technological methods. For example, AI tools are monitoring wildlife more accurately and efficiently. Other than that, the Drone technology is also helpful in monitoring the wildlife population and count animals.

Montreal Institute for Learning Algorithms (MILA), Microsoft, and Conscient AI Labs researchers have used GANs, a type of AI, to simulate what homes are likely to look like after being hit by rising sea levels and storms with high intensity.

AI also has the potential to unlock new insights from the massive amounts of complex climate simulations generated by the climate modelling field

AI also has the potential to unlock new insights from the massive amounts of complex climate simulations generated by the climate modelling field.

National Security

For the security of nations, AI can play a substantial role. The American military is deploying AI that alerts human analysts when there is any suspicious activity. The Deputy Secretary of Defense Patrick Shanahan stated that "the goal of emerging technologies in this area is to meet our warfighters' needs and to increase [the] speed and agility [of] technology development and procurement."

Transportation

AI is introducing major inventions in transportation. Autonomous vehicles such as cars, trucks, buses, and drone delivery systems are using advanced technological capabilities. All these automated vehicles are equipped with the features of guidance and braking, lane-changing systems. They are using the cameras and sensors for collision avoidance. More importantly, these vehicles are using the AI to analyze information in real-time, and the deep learning systems to adapt to new circumstances via detailed maps.

Smart Cities

With the collaboration of IoT, Artificial Intelligence can address critical challenges posed by an excessive urban population, including traffic management, healthcare, energy crises, and many other issues. It also has the potential to bring improvement in the lives of the citizens and businesses that inhabit a smart city.

Artificial intelligence has the potential to improve the efficiencies of our workplaces and bring a distinctive change in the lives of humans.

With better monitoring and diagnostic capabilities, artificial intelligence can dramatically influence all the sectors of industry and aspects of our life

With better monitoring and diagnostic capabilities, artificial intelligence can dramatically influence all the sectors of industry and aspects of our life.



GIK Students Design Pakistan's first Real-Time Online Shopping Website



As constraints caused by the spread of Coronavirus continues to disturb the economic environment across the globe, millions of masses across the world are also suffering from this pandemic situation. Similar is the case with Pakistan, where because of the strictly imposed lockdown by the government body has limited human life from every resource. The citizens of Pakistan are not allowed to go outside, and most of the stores and markets are completely closed for the public. However, there are few stores which are providing online shopping opportunities to people, but most among them are taking benefit of the prevailing situation by overpricing products.

In the current situation of lockdown, online shopping is regarded as one of the best options but citizens of Pakistan are very much confused due to the online scams and costly products. But there is no need to worry anymore because of the first time in Pakistan,

“An online shopping website has been designed by Graduates of GIKI which can also track live location of your packet named Shoppingum.com.”

Muhammad Bilal Jamil and Syed Ali Abbas Haider are the talented young men who have made this live tracking online shopping website and have resolved nearly all the problems which public is generally facing while shopping from online websites.

Both the founders have utilized unique mechanism of machine learning and data mining algorithms for live tracking of your package and not only that you can also incorporate online stores which are close to you and are providing their online services as well.

One of the main problems which people were encountering during online shopping was overpricing of certain products, but now there is no need to worry because shoppingum is here for you to resolve all your problems. Also, you can easily compare price on your desired product.



OPPO Reno 3 Pro

Stunning Batter Phone

Design

The Reno 3 Pro measures 6.22 by 2.88 by 0.31 inch (HWD) and sports a 6.4-inch screen on the front with a small cutout at the top for two selfie cameras. It feels comfortable in the hand, but its reflective body, while attractive, easily catch marks.

Volume controls are on the left side of the phone, while the right side holds a power button that also activates Google Assistant. Unlike many competing models, the Reno 3 Pro uses an under-screen fingerprint sensor, rather than one on the side. Facial recognition is also available and worked to unlock the phone quickly in testing.

Display

The Oppo Reno 3 Pro has a 6.4-inch Super AMOLED panel with a Full HD+ resolution. The bezels are decently slim, and the sides curve for improved ergonomics. The colour accuracy also seemed to be on the higher side, if not a tad oversaturated.

Processor & Software

Powering the smartphone is the new Mediatek Helio P95 SoC, an octa-core processor clocked at 2.2GHz, paired with 8GB of RAM. The smartphone is available in two storage variants, 128GB and 256GB. You do have the option to expand storage using a microSD card.

The Reno 3 Pro runs on ColorOS 7 based on Android 10 like every other Oppo phone. It's a more straightforward and cohesive software skin that looks more mature and polished. On the visual front, we get cleaner icons, a better-arranged settings screen, beautiful interactive animations that flow smoothly, and a redesigned quick toggles menu. There's a system-wide dark mode too for more visual appeal as well as battery savings.

Camera

Oppo is aiming for the big leagues with the Reno 3 Pro's cameras. We have a total of six cameras split across the front and the back. The rear camera array has a 64MP f/1.8 primary shooter, followed by an 8MP ultra-wide lens, a 13MP telephoto lens and a mono lens.

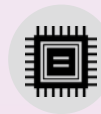
The cameras have a very pleasing color tone and respectable dynamic range, with a slight preference towards exposing the shadows. It can make the results seem contrast-less. The details and sharpness are well-retained. It also does an excellent job of identifying when a yellow light should be balanced, and when it should be left warm.



Battery

The Oppo Reno 3 Pro has one of the best battery lives we've seen on a smartphone in a while. We're talking about over 8 hours of screen-on-time on most days, extending the charge cycles to over a day in most scenarios.

The Reno 3 Pro also supports the new 30W VOOC Flash Charge 4.0, which takes the phone from zero to full in just about 60 minutes. The initial thirty minutes fill up around 65% of the 4,025mAh battery.



**256GB Built-in,
8GB RAM
Octa-core**



**Non-removable Li-Po
4025 mAh battery**



6.4 inches



64MP+13MP+8MP+2MP

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Pros

- Nice display
- Solid battery life

Cons

- Clunky Android skin

Final Verdict

The Oppo Reno 3 Pro offers solid specs and performance in a flagship-level design.

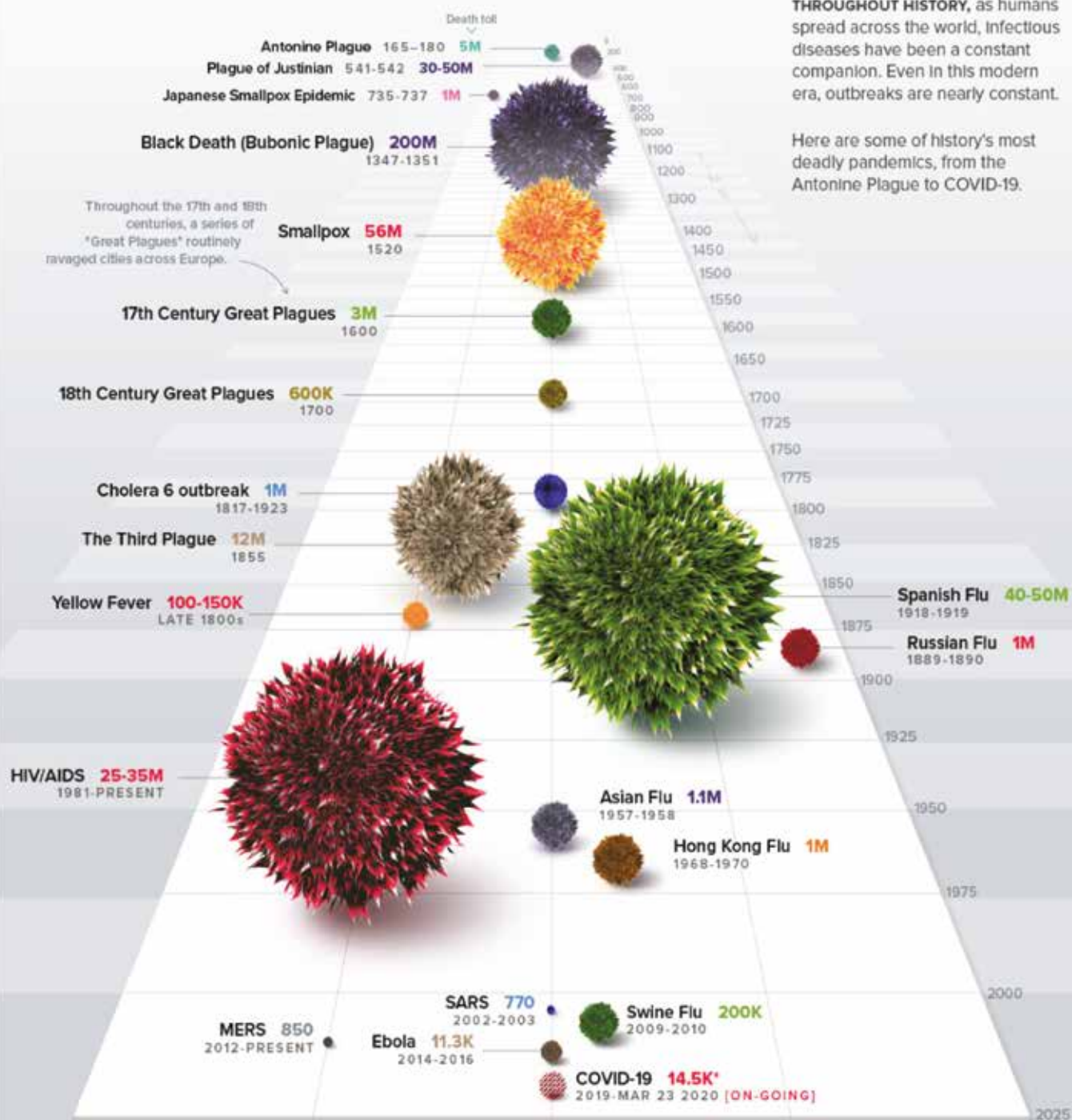


HISTORY OF PANDEMICS

PAN-DEM-IC (of a disease) prevalent over a whole country or the world.

THROUGHOUT HISTORY, as humans spread across the world, infectious diseases have been a constant companion. Even in this modern era, outbreaks are nearly constant.

Here are some of history's most deadly pandemics, from the Antonine Plague to COVID-19.



DEATH TOLL [HIGHEST TO LOWEST]

***As of Mar 23, officially a pandemic according to WHO**

It is hard to calculate and forecast the impact of COVID-19 because the disease is new to medicine, and data is still coming in.

200M

Black Death (Bubonic Plague)
1347-1351



The plague originated in rats and spread to humans via infected fleas.

The outbreak wiped out 30-50% of Europe's population. It took more than 200 years for the continent's population to recover.

56M

Smallpox
1520



Smallpox killed an estimated 90% of Native Americans. In Europe during the 1800s, an estimated 400,000 people were being killed by smallpox annually. The first ever vaccine was created to ward off smallpox.

40-50M

Spanish Flu
1918-1919



30-50M

Plague of Justinian
541-542



The death toll of this plague is still under debate as new evidence is uncovered, but many think it may have helped hasten the fall of the Roman Empire.



25-35M
HIV/AIDS
1981-PRESENT



12M
The Third Plague
1855



5M
Antonine Plague
165-180



3M
17th Century Great Plagues
1600



1.1M
Asian Flu
1957-1958



1M
Russian Flu
1889-1890



1M
Hong Kong Flu
1968-1970



1M
Cholera 6 outbreak
1817-1923

A series of Cholera outbreaks spread around the world in the 1800s killing millions of people. There is no solid consensus on death tolls.



1M
Japanese Smallpox Epidemic
735-737



600K
18th Century Great Plagues
1700



200K
Swine Flu
2009-2010



100-150K
Yellow Fever
LATE 1800s



11.3K
Ebola
2014-2016



850
MERS
2012-PRESENT



770
SARS
2002-2003

14.5K
COVID-19

2019-MAR 23 2020

Pakistan Ranked 4th Generation Regulator by ITU



Pakistan has been ranked as 4th Generation Regulator (G4) by the International Telecommunication Union (ITU) and has become the only country in South Asia to have achieved this goalpost. Out of 38 economies in Asia-Pacific, only 8% states have managed to achieve G4 status.

According to ITU's report "Global ICT Regulatory Outlook 2020 (GIRO)", Pakistan scored 88 out of 100 which means that Pakistan's ICT regulations are led by economic and social policy goals. Pakistan is also among the top 5 regulators in the entire Asia-Pacific region with a global rank of 48. GIRO is built on high-quality data provided by 193 countries worldwide that forms the basis of 'ICT Regulatory Tracker'.

The Tracker, developed by ITU, is an evidence-based tool that helps decision-makers and regulators monitor the rapid evolution of ICT regulation.

The report further reveals that Pakistan has scored full marks (20/20) for Regulatory Authority, 19/22 for regulatory mandate, 22/30 for regulatory regime and 27/28 for competition framework. Pakistan's journey towards collaborative regulation has also been highlighted as a special feature in the report.

Pakistan Telecommunication Authority (PTA) is continuously striving to achieve new international benchmarks by showing its commitment to protect consumer interests and enhance public-private collaborations for the digital transformation & socio-economic benefit of Pakistan.



Uber and PSO Honor Female Drivers across Pakistan



The International Women's Day 2020 managed to cause quite a stir in Pakistan, with individuals and businesses taking steps to express their support towards women empowerment in the country. Uber is one such platform that has consistently endeavored to encourage female mobility, as well as increase valuable and safe economic opportunities for them in Pakistan.

With this objective in mind, Uber recently partnered up with Pakistan State Oil (PSO), to honor their female partner drivers and reward them with DigiCash cards and giveaways. This activity was done in multiple cities across Pakistan, and recognized female partner drivers working diligently to support their households with earnings from Uber. The DigiCash card adds considerable convenience for drivers, enabling efficient fuel and vehicle management for them. This would make it easier to keep track of fuel budgets and expenses and minimize the use of cash-based transactions.

In addition to convenience, the PSO DigiCash cards are an added safety measure for female partner drivers, which has always been a priority for Uber. The company has over time added numerous features in their app and operations to ensure safety for their drivers, which also include the ability to track their rides, and flexible working hours. 'With this provision in hand, I can feel much at ease, since I wouldn't need to worry about carrying enough cash for refueling, or stopping at ATMs in between rides or at odd hours,' comments Uber partner driver Beenish Faraz.

The idea of a woman to generate income from the ride-hailing industry in Pakistan is steadily gaining momentum, despite the existence of a considerable gender-based mobility gap. Effective efforts from businesses like Uber to build a strong community of females in Pakistan, by providing them with safe employment opportunities, are encouraging a number of them to step out of socio-cultural stereotypes and opt for this field of work.

'It is perfectly acceptable for a woman to work as a driver on the Uber platform, considering their staunch focus on safety concerns for both riders and drivers. This medium has made me strong, independent and empowered!' reiterates Shaista Jabeen, another Uber partner driver.

With a focus on providing low-cost, safer and easier solutions to the female partner drivers, Uber intends to significantly benefit their earning potential, facilitating an improvement in their livelihood standards, and also giving them freedom of movement, exposure and safer economic opportunities.



If gender gap is closed, Pakistan's mobile industry would benefit from a potential revenue uplift of 54%

Claire Sibthorpe, Head of Connected Women and Connected Society at the GSMA



What is the importance of GSMA's Mobile Gender Gap Report for the industry?

There is a lack of data on the mobile gender gap, despite the fact that data is critical to understanding and measuring the mobile gender gap and informing policy and business choices which can address it. The data and insights provided in this report are therefore, important if we are going to address the mobile gender gap and ensure women are not being left behind in an increasingly connected world.

Our Mobile Gender Gap Report 2020 highlights the magnitude of the gender gap in mobile phone access, smartphone access and mobile internet use across low- and middle-income countries, and therefore the opportunity for the industry of reaching more female customers with mobile technology

Our Mobile Gender Gap Report 2020 highlights the magnitude of the gender gap in mobile phone access, smartphone access and mobile internet use across low- and middle-income countries, and therefore the opportunity for the industry of reaching more female customers with mobile technology. The report also reviews the barriers to mobile ownership and mobile internet use and how these have changed over time.

A range of gender-disaggregated data is provided for 15 low and middle-income countries across Africa, Asia and Latin America to help the mobile industry better understand this opportunity in their markets and take action. Recommendations are provided for mobile operators as well as other stakeholders on how to overcome the barriers preventing women from accessing and using mobile technology.

What are the main findings of this year's Mobile Gender Gap Report?

54 per cent of women in low and middle-income countries now use mobile internet and the gender gap is narrowing. Women are 20 per cent less likely to use mobile internet than men, down from 27 per cent in 2017. This reduction was driven primarily by an improvement in South Asia where the gap narrowed by 16 percentage points.

Percent. Handset affordability remains the primary barrier to mobile-phone ownership for men and women

Despite this progress, the gender gap in mobile internet use in low and middle-income countries remains substantial, with over 300 million fewer women than men accessing the internet on a mobile. The gender gap is still widest in South Asia at 51 percent. Handset affordability remains the primary barrier to mobile-phone ownership for men and women. Among mobile users who are aware of mobile internet, a lack

of literacy and digital skills continues being the main barrier to use.

The gender gap is still widest in South Asia at 51 per cent

Both men and women across surveyed markets report that mobile provides important benefits. In all 15 markets surveyed, the majority of male and female mobile owners report that mobile ownership makes them feel safer and provides access to important information that not only assists them in their daily lives but that they would not have received otherwise.

How exactly can mobile phones bring improvement in the lives of women? Currently what women are missing out on?

Digital technologies have become a powerful force for social and economic development, delivering substantial benefits for women. Access to mobile and the internet enable women to get information and services that were previously unavailable to them, opening new opportunities for income generation, personal development and engagement with the community and political decision-making.

For example, Gallup research shows that mobile phone ownership supplemented with internet access is associated with an improvement in women's wellbeing.

In the GSMAi Consumer Survey 2019, over half of the mobile phone-owning women in Pakistan stated that the device made them feel safer, helped them with their day-to-day work and provided access to information they would not have otherwise

In the GSMAi Consumer Survey 2019, over half of the mobile phone-owning women in Pakistan stated that the device made them feel safer, helped them with their day-to-day work and provided access to information they would not have otherwise.



Can digital gender equality bring social equality for women as well?

Yes. For example, GSMA research across 15 low and middle-income countries in 2019, shows that

- 58% - 90% of women in every country said mobile phones help them with their day-to-day work.
- 53% - 94% of women in every country said mobile phones help provide them with access to information they would not have otherwise.
- 54% - 91% of women in every country reported they feel safer with a mobile phone.

The importance of digital inclusion for promoting women's rights and development is clearly recognized in the 2030 Agenda for Sustainable Development, and SDG target 5.B urges the international community to "enhance the use of digital and other enabling technologies to promote the empowerment of women."

Is there any improvement seen from last year?

Mobile ownership and mobile internet use in Pakistan have both seen growth since 2017. In particular, growth in female mobile internet use outstripped male growth, resulting in the mobile internet gender gap reducing to 49%.

In Pakistan, growth in female mobile internet use outstripped male growth, resulting in the mobile internet gender gap reducing to 49%

Encouragingly, Pakistani men and women are increasingly aware of mobile internet and increasingly recognizing the relevance of mobile technology to their lives. Women's awareness of mobile internet has grown even faster than men, from only 39% of women in 2017 to 70% in 2019. This has resulted in the gender gap in mobile internet awareness closing from 16% to 11%.

What are the main factors preventing equal mobile ownership and mobile internet use for women and men in countries like Pakistan?

In Pakistan, as well as South Asia more generally, conservative social norms govern many women's choices and behavior.

Family disapproval is the most important barrier preventing Pakistani women from owning a mobile phone and using mobile internet. 38% of women in Pakistan who do not yet own a mobile phone report family disapproval as the main factor preventing them from owning one, compared to only 7% of men, and 29% of female mobile users in Pakistan report family disapproval as the main factor preventing them using mobile internet, vs only 2% of men.

Family disapproval is the most important barrier preventing Pakistani women from owning a mobile phone and using mobile internet

Other important factors reported by women – and also men – in Pakistan that prevent them from accessing mobile phones and using mobile internet include underlying difficulties in reading and writing, and the cost of mobile handsets and data.

How Can We Close the Gender Gap in Mobile Phone Use in Pakistan?

The digital gender gap in Pakistan is not going to close on its own. Its root causes are driven by a complex set of social, economic and cultural barriers. Targeted intervention and collaboration is needed among a range of stakeholders, including the mobile industry, policymakers and the development community to address the barriers faced by women. . For example, policymakers can invest in public education and digital literacy



initiatives that increase women's and girls' mobile digital literacy, and support initiatives to help reduce the cost of devices and services for customers, and mobile operators can ensure marketing and services consider the role of the gatekeeper and are accessible for those with lower literacy levels and digital skills, and support industry efforts to lower the cost of internet-enabled mobile phones.

Targeted intervention and collaboration is needed among a range of stakeholders, including the mobile industry, policymakers and the development community to address the barriers faced by women

What role government can play in closing the mobile gender gap? What policy and regulation changes are required in Pakistan?

Bridging the digital divide, including the gender disparity, is one of the key objectives of the Digital Pakistan policy.

For example, in April 2019, the government of Pakistan launched a policy on support programmes for the most vulnerable people in society, including 'Kifalat', which is intended to ensure digital and financial inclusion of around 6 million women through the "one woman, one bank account" policy.

Such initiatives are welcome and more needs to be done to closing the gender gap in mobile ownership and mobile internet use in Pakistan. In particular, this will require a proactive approach, with specific targets and strategies to stimulate digital inclusion among women.

Addressing the affordability barrier, in particular, is necessary, and the government can play a key role here by considering the further reduction or elimination of sector-specific taxes on devices and services, to make them more affordable to users.

By equipping people with the skills and tools that support digital and financial inclusion, this can help bring more people into the formal economy and, by extension, expand the tax base.

Addressing the affordability barrier, in particular, is necessary, and the government can play a key role here by considering the further reduction or elimination of sector-specific taxes on devices and services, to make them more affordable to users

Finally, we encourage the government to invest in public education initiatives that increase females' mobile digital literacy and confidence, including for girls and women across all levels of education, income and familiarity with the mobile and the internet.

These are some of the topics that were discussed at the recent National Dialogue High-Level Roundtable in October, and the GSMA will continue supporting the Pakistani government in this area, leveraging the PTA-GSMA Capacity Building Centre of Excellence that was established last year to provide opportunities of capacity building to professionals and policymakers from Pakistan and from across the region to get training on cutting-edge technologies and digital inclusion issues.



Once we are successful in closing our country's mobile gender gap, what commercial and economic opportunities will open up for Pakistan?

Closing the mobile gender gap represents an important commercial and economic opportunity in Pakistan. In 2017, Pakistani mobile operators generated \$3.4bn revenue, contributing \$1.8bn of direct economic value to the Pakistani economy (0.6% of GDP). The GSMA estimates that closing the gender gap in mobile internet use across low and middle-income countries could add \$700 billion in GDP growth (representing an additional 0.7 per cent of GDP growth) in these countries over the next five years. According to GSMAi data, Pakistan's mobile industry would benefit from a potential revenue uplift of 54% if it closed both the gender gap in mobile ownership and the gender gap in spending on mobile services.

Greater access to mobile services among women also has the potential to transform economies, accelerating economic growth and development. Improvements in mobile connectivity can improve communication and trade within an economy, while also making a country more attractive for foreign investment.

Greater access to mobile services among women also has the potential to transform economies, accelerating economic growth and development

Closing the gender gap in mobile money can also expand access to financial services, providing low-income women with a secure, accessible and convenient method to manage their finances.

How do you see the progress of the mobile industry in Pakistan?

Mobile technology has the potential to become a vital tool to drive digitally enabled social development and economic growth in Pakistan. The technology remains at the heart of Pakistan's digital transformation with mobile broadband networks now covering 80% of the population, and 97% of internet connections based on mobile connectivity.

The technology remains at the heart of Pakistan's digital transformation with mobile broadband networks now covering 80% of the population, and 97% of internet connections based on mobile connectivity

The total value-added generated by mobile operators in 2018 – taking into account direct, indirect and productivity effects – was around \$16.7 billion, equivalent to 5.4% of GDP. Yet Pakistan has the largest mobile gender gap in the world. Despite progress, only half of the Pakistani women own a mobile phone, compared to 81% of men, and only 19% of Pakistani women use mobile internet, compared to 37% of men.

Mobile operators such as Telenor and Jazz recognize this opportunity and

taking action to reach more female customers. The gender gap in access to mobile phones and mobile internet use is both reducing and Pakistani men and women are increasingly aware of mobile internet and increasingly recognizing the relevance of mobile technology to their lives. Women's awareness of mobile internet has grown even faster than men's, from only 39% of women in 2017 to 70% in 2019.

What are your thoughts on the state of women in Pakistan, especially in the ICT world?

The country lags behind many of its neighbors in South Asia on several key human development indicators, including gender equality. The country was ranked 151st out of 153 countries in the WEF 2020 Global Gender Gap report. A major challenge, for example, is the difference in literacy rates between men (71%) and women (46%), which has an impact on women's professional representation in the ICT sector. However, there have been some notable developments, and we recently welcomed the appointment of Tania Aidrus as Special Assistant to the Prime Minister on Digital Pakistan.

There have been some notable developments, and we recently welcomed the appointment of Tania Aidrus as Special Assistant to the Prime Minister on Digital Pakistan

We believe that this appointment will be key to drive the digital agenda in Pakistan going forward, including looking at ways to close the digital gender divide.



PTCL Group Posts Rs 32 Billion Revenue for Q1, 2020



Pakistan Telecommunication Company Limited (PTCL), the country's leading telecom and ICT services provider, has announced its financial results for the quarter ended March 31, 2020 at its Board of Directors' meeting held in Islamabad on April 9, 2020.

COVID-19 pandemic has created global shockwaves and its effects have changed the landscape of every perceptible area of ordinary life. PTCL stands with the nation in this tough time and continues to provide seamless connectivity across Pakistan. Our frontline teams, equipped with all protective gears, are at the forefront to serve our customers nationwide. The Company has enabled more than 1,200 contact center agents with 'work from home' facilities to ensure that due social distancing is maintained, while serving the connectivity needs of our customers. To ensure continuity of essential services for our valued customers, certain customer service centers have also been kept open. Our sales and customer care teams are constantly in touch with our corporate customers to cater, not only, to their existing requirements, but to also address any new customer needs emanating from COVID-19 pandemic.

PTCL Group's revenue of Rs 31.8 Billion in Q1 2020 is lower by 5% as compared to the same period of last year. When normalized for the impact of certain regulatory changes, the revenue is 3% higher than Q1 2019 on a like-for-like basis. UBank, a microfinance banking subsidiary of PTCL, continued its growth momentum and has achieved a 44% growth in its quarterly revenue over last year. The Group's operating profit and bottom line have deteriorated over last year due to rupee devaluation, increase in interest rates, higher power tariffs and the effects of COVID-19 pandemic. PTCL revenue of Rs 17.7 Billion for the quarter is 1% lower than last year but on a like-for-like basis the revenue is stable and at par with Q1 2019. In line with its ambition to be a customer centric organization.

Corporate and Wholesale businesses continued their growth momentum and have achieved an 8% overall revenue growth YoY. This has been possible through PTCL's leading market position in IP Bandwidth and its strong presence in Managed Services, Cloud and other ICT services segment. Similarly, international revenue has also shown 5% growth as compared to same period last year. Wireless revenue for the quarter has shown a 3% YoY revenue growth. Despite growth in the above segments, shrinkage in other segments has meant a like-for-like stable revenue in Q1 2020.

PTCL's Operating and Net Profit after Tax for the quarter have declined as compared to last year due to increase in operating costs. However, increase in non-operating income on account of disposal of obsolete assets and higher income on investments due to higher interest rates, has helped lessen the gap at the bottom-line level with comparative period.





Redmi 8A

Incredible Value at an Unbelievable Price

Design

One glance at the Redmi 8A and it is hard to believe that this is such an affordable smartphone. Xiaomi has done an excellent job of designing this device, which is priced low. The front of the Redmi 8A has a big 6.22-inch display with a water drop notch at the top. This is much bigger than the 5.45-inch display on the Redmi 7A. Xiaomi has pushed the earpiece towards the frame of the device. The Redmi 8A has noticeable bezels on all sides. The chin is quite thick, and Xiaomi has put a Redmi logo here.

Xiaomi has curved the sides of the Redmi 8A, which makes it comfortable to hold. The power and volume buttons are to the right and are easy to reach. Xiaomi has positioned the SIM tray on the left which is otherwise bare. The top and bottom of the phone are flat, and you can see a secondary microphone at the top. At the bottom, the Redmi 8A sports a USB Type-C port, which is great to see on a smartphone in this price bracket. The 3.5mm headphone jack, the primary microphone, and the loudspeaker are also on the bottom.

The back of the Redmi 8A only has a single camera with an LED flash. There is no fingerprint sensor on this device, something we can potentially excuse given its price.

Cameras

The Redmi 8A has a single camera at the back, based on the Sony IMX363 sensor. This camera has an f/1.8 aperture, a 1.4-micron pixel size, and dual-pixel autofocus. At the front, the Redmi 8A has an 8-megapixel selfie shooter with an f/2.0 aperture and 1.12-micron pixels. Xiaomi has used the same camera app as always, and you get shooting modes such as Portrait, Pro and Short Video apart from the usual photo and video modes. There is HDR as well as AI scene detection.

We found the Redmi 8A to be quick to focus during the day, but the speed dropped in low light. In favorable light, the Redmi 8A delivered some great shots. HDR kicks in automatically when shooting in bright environments. Selfies taken during the day had good detail and you can apply beautification filters before taking a shot. In low light, there was a slight drop in quality as shots looked grainy on zooming in. Video recording maxes out at 1080p for the primary shooter.



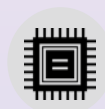
Specifications and software

Xiaomi has opted for an HD+ display with a resolution of 720x1440 pixels and Corning Gorilla Glass 5 for protection. The Redmi 8A sports the same Snapdragon 439 SoC as the Redmi 7A. This is an octa-core processor with eight ARM Cortex-A53 cores clocked at 2GHz. The smartphone is available in two variants; one with 2GB of RAM with 32GB of storage and the other with 3GB of RAM with 32GB of storage.

Redmi 8A packs in a significantly bigger 5,000mAh battery. It also supports 18W fast charging, but Xiaomi ships only a 10W charger in the box.

In terms of software, the Xiaomi Redmi 8A runs MIUI 10 on top of Android 9 Pie. The interface is similar to what we have seen on other Xiaomi phones.

The Redmi 8A has decent enough hardware to deliver a usable experience. We rarely observed slowdowns while using the smartphone. There is no fingerprint sensor but face recognition is quick enough to unlock the smartphone conveniently.



32GB 2/3GB RAM
Octa-core



Non-removable Li-Po
5000 mAh battery



6.2 inches



12MP

PKR.16,499/-

Pros

- Excellent construction and tactile feedback
- Phenomenal battery life
- Good performance for the price

Cons

- The camera needs a little of work

Final Verdict

The Redmi 8A redefines what you can get in the entry-level segment. It is an excellent piece of kit that delivers a modern design, above-average performance, and fantastic battery life -- all at a very reasonable price.

By Usama Anjum

The inevitable growth of 5G infrastructure cost; can MNOs maintain the profits?



The fifth-generation (5G) technology is bringing a lot of uncertainty close to its inception. The research says that the network cost could increase two times as operators struggle to meet the demand for increased capacity and deployment of 5G. So there are some queries related to 5G infrastructure and deployment. One of the main questions is related to telecom operators and the future of their investment in 5G infrastructure. Will they be able to maintain the profit?

The research says that the network cost could increase two times as operators struggle to meet the demand for increased capacity and deployment of 5G

Every generation of technology brings new opportunities for telecom operators but with a slight twist.

When 4G was launched in 2009, telecom and mobile operators didn't experience the same success as they witnessed at the time of the predecessor, 2G and 3G. Although there were substantial investments in 4G infrastructure, profit generated from 4G was not that impressive. Even in some regions like Europe and Latin America, revenues also dropped after the advent of 4G. Due to these events, there is uncertainty prevailing among operators related to investment in 5G infrastructure.

Current scenario regarding 5G technology

The 5G technology is under final stage of testing. If normal circumstances prevail and the threat of coronavirus pandemic fades then 5G is poised to launch in some markets later this year. There is a mixed reaction from mobile operators. Both optimism and pessimism vary among the telecom operators. A handful of them are preparing while some are retreating from investment. The ones who are anticipating the launch know that it will create opportunities to attain value from the new 5G use cases and an entrenched adoption of the Internet of Things (IoT). Also, they are pretty much aware that they'll have to increase their infrastructure investments to a whole new level in this technology.

If normal circumstances prevail and the threat of coronavirus pandemic fades then 5G is poised to launch in some markets later this year

The increase in infrastructure cost raises essential questions about the investment strategy and future profits for telecom players. So, in this article, we will emphasize on the infrastructure investments required to enable 5G technology.

Rise of new and innovative cases

There are many things on the road to 5G, which are dubious. But it isn't hard to envision the rise of new and innovative use cases. In order to understand how these will change infrastructure requirements, we grouped them into three domains: enhanced mobile broadband, Internet of Things IoT, and mission-critical applications. These three use cases will need network performance to grow 10-fold over current levels across all the network parameters, as measured by latency, throughput, reliability, and scale. To reach that milestone, telecom operators will need to invest in all network domains, including the spectrum, radio access network (RAN) infrastructure, transmission, and core networks.

An evolutionary approach to infrastructure investment

Several attributes of current 5G technology are built on 4G networks, rather than a complete departure from the former generations. It implies that mobile and telecom operators can take an evolutionary approach towards 5G infrastructure investment. For example, operators could start by upgrading the capacity of their existing 4G network by repurposing a portion of their 2G

and 3G spectrum, or by acquiring additional spectrum when available. By the help of this mechanism, they can delay investments in 5G by evolving to LTE and LTE-Pro features, such as 4x4 or massive MIMO (multiple inputs, multiple output technology). Such an evolutionary approach will be the natural path for most telecom operators, which will allow them to minimize investments. But still, the incremental revenue potential of 5G remains uncertain.

Operators could start by upgrading the capacity of their existing 4G network by repurposing a portion of their 2G and 3G spectrum, or by acquiring additional spectrum when available

The network domains which I mentioned above in new and innovative cases will further elaborate on the range of investment in 5G infrastructure. I will explain them one by one.

Spectrum

The low spectrum is still coming to auction in low bands in several countries, but the majority of the countries will basically use them for increasing 4G traffic. Mobile and telecom operators are testing spectrum from 3.5 gigahertz to 80 gigahertz for 5G. At this point, most of the countries are emphasizing on acquiring 3.5 gigahertz bands over the short-to-medium term, which would be followed by 26 gigahertz and 28 gigahertz bands. These new spectrums will provide telecom operators with greater bandwidth and an increase in air capacity. Let's take the European Union, which is now releasing up to 400 megahertz bandwidth on 3.5 gigahertz. These kinds of steps can cause capacity issues. Even if a new spectrum is available, mobile operators will need to increase their infrastructure investment exponentially to overcome certain kind of limitations. For instance, high-frequency spectrum offers extra capacity but also comes with much greater propagation limitations.



When the new spectrum is introduced, telecom operators will need to improve radio interfaces and antennas in order to increase the efficiency of the new spectrum

Trials of 3.5 gigahertz spectrum indicate that its range falls to about 400 meters outdoors, which has been considered a very low range. So when the new spectrum is introduced, telecom operators will need to improve radio interfaces and antennas in order to increase the efficiency of the new spectrum.

Radio Access Network (RAN)

In rural and suburban regions, as well as along the roadways, telecom operators can handle the increased traffic easily by densifying existing networks with macro sites. But in several highly populated urban areas, they will need to depend on small-cell solutions for a couple of reasons: a higher concentration of traffic, as measured by traffic load per square kilometer, and also the use of higher spectrum bands.

In rural and suburban regions, as well as along the roadways, telecom operators can handle the increased traffic easily by densifying existing networks with macro sites

These small cell solutions include hyper-dense deployments which also contributes to growing 5G infrastructure investment.

Transmission

For 5G deployment, the Fiber-only transmission will become essential. For improving transmission lines, telecom mobile operators have to undertake full-scale fiberization efforts. The fiberization is also compulsory for supporting small-cell deployment in urban areas. The fiberization process will increase the investment cost.

Core Networks

Core networks have been upgrading from circuit switching and packet switching to converged structures, like the IP multimedia subsystems (IMS). The core networks have benefitted from broader IT advances, such as network function virtualization and software-defined networking. These core networks will also add to the investment costs.

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The cost and investments related to 5G, will vary over time and also depend on domestic conditions. The telecom operators have a couple of options. The first includes a lean-in strategy in

which they give priority to 5G investments with the aim of accelerating commercial prospects.

Even if operators delay 5G investments, they will need to increase infrastructure spending to cope with growing traffic

The other involves a conservative approach in which they delay 5G investments as long as possible while existing networks are updated. Even if operators delay 5G investments, they will need to increase infrastructure spending to cope with growing traffic.

Mobile operators will need to develop strategies for 5G to cope with this expected growth in network cost. Standard measures will involve cost-saving efforts, but they will also need to explore more alternative approaches, such as network sharing (the joint building of new 5G networks) and new revenue models.



Infinix S5 PRO 40MP Pop-up selfie camera- the phone for a fashionista



Infinix has recently unveiled a new device, the Infinix S5 Pro, and it truly is an impressive piece of kit. Infinix's latest outing is really something you sit and take notice of, not just because of the power-packed features, but also because of its futuristic and luxurious design. The phone's full-HD+ notch-less display provides a great amount of detail, packed with 128 GB Storage, 48MP triple rear camera, and the 40 MP Pop-up selfie camera. To be available in three beautiful colors, Forest Green, Sea Blue, and Violet, the list goes on and on, but what caught our eye were those camera features at such a competitive price.

As of now, we are convinced that we're living in a big moment of change in photography. That is not just because the smartphone is now equipped with features and possibilities no one could have deemed possible, but also due to the smartphone in their pocket is a potential photographer. Not that it is a bad thing, but it might make you feel left out. But with Infinix S5 Pro's incredible camera features and attractive price range- you can also share your photography on your social media platforms and jump on the bandwagon.

Where social media platforms such as Instagram redirect vast amounts of traffic on its fashion related posts, you feel like you need a professional camera to attain that quality in your pictures as well. With Infinix S5 Pro's powerful AI 48MP triple back camera, you can make every image crisp and high-quality. So, photography and fashion enthusiasts, rejoice! The phone that will let you make a fashion statement- and also perfectly capture all your fashion statements is finally here.



Infinix S5 Pro

A Great Addition in Low-range smartphones

Design

The Infinix S5 Pro may be a cheap smartphone, but its design is exactly the opposite - a fashion statement with a hint of premium. But just like any modern smartphone, the S5 Pro has conventional build. The front is protected by a flat piece of glass, there is a plastic frame with a glossy finish, and the back may look like glass, but it's actually plastic with a couple of layers.

The 6.53" notch-less screen is probably the first thing everyone will notice and it's quite good. All but the bottom bezels are very slim, the corners - nicely rounded, and the colors seem pretty saturated and punchy, in fact, it can be mistaken for an OLED panel.

The frame is thin, glossy and somewhat sharp, which makes for some grip and helps the S5 Pro feel secure enough in hand in spite of its all-glossy body.

Display

The Infinix S5 Pro has a 6.53" IPS LCD screen of FullHD resolution, and it is the key selling point of the phone. The panel has no cutout(s), which makes for a more immersive experience when watching movies or playing games. The S5 Pro display has a resolution of 1,080 x 2,340, which makes for a sharp picture at 395ppi and 19.5:9 aspect ratio.

Battery

The Infinix S5 Pro is powered by a 4,000 mAh battery. It supports 10W charging, and the provided 5V/2A adapter refills about 30% of the phone's depleted battery in half an hour.

Performance

The Infinix S5 Pro boots XOS 6.0, which is actually a proprietary launcher running on top of the latest Android 10. The Infinix S5 Pro is powered by the Helio P35 chip by MediaTek. It is still the most powerful one Infinix has used so far.

The Helio P35 is manufactured on TSMC's 12nm FinFET process and contains an octa-core Cortex-A53 processor (4x2.3GHz + 4x1.8GHz). There is also a PowerVR GE8320 GPU. Finally, you can get the S5 Pro with either 4GB or 6GB of RAM depending on the storage option.



Cameras

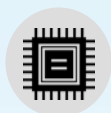
The Infinix S5 Pro has a triple camera on its back, and while that's technically true, you will be able to use just one of the snappers - the 48MP primary behind f/1.8 lens. Phase-detection autofocus and dual-LED flash assisting your main camera.

The second snapper is a 2MP depth sensor. And then there is one tiny QVGA sensor used for low-light photography.

The daylight photos turned out pretty good with a decent amount of resolved detail, low noise, and accurate colors. The contrast is very good, as is the dynamic range.

The low-light photos we snapped with the Infinix S5 Pro turned out great for this class. They are well exposed, with good color saturation, and the detail is quite enough even if some gets destroyed by the aggressive noise reduction.

Overall, we'd say the Infinix S5 Pro does an excellent job for its price range.



64GB 4GB RAM
128GB 6GB RAM
Octa-core



Non-removable
Li-Po 4000 mAh
battery



6.53 inches



48MP
+2MP
QVGA

PKR. 22,999/-

Pros

- Large and notch-less screen with excellent contrast
- Eye-catching design
- Great battery life
- Good day and night photos

Cons

- Dated micro-USB port

Early Verdict

The S5 Pro is a beautiful smartphone that offers features few are ready to explore on an entry-level smartphone - a cutout-free high-res screen and a pop-up selfie camera. And because of this immersive viewing experience a lot of people will easily forgive few hardware shortcomings.

By Onsa Mustafa

Pakistani Startups Making Waves Internationally



The rise of digital startup and its progress in the last some years has been quite vibrant. According to McKinsey & Co's latest report on the Pakistani ecosystem, Pakistan has become one of the fastest-growing economies in Asia.

According to McKinsey & Co's latest report on the Pakistani ecosystem, Pakistan has become one of the fastest-growing economies in Asia

The report also claims that since 2010, in Pakistan, around 720 startups had been created and from which 67 per cent are still operational, including

100 that have gained funding from international investors. One of the most successful ones is Airlift, which has earned \$12 million last August in Series A funding from First Round Capital, a notable American VC firm. It is the company's first investment in Asia in more than ten years.

International companies have also shown their trust in Pakistan's tech market. The Chinese famous e-commerce giant Alibaba.com has acquired Pakistan's well-known e-commerce store, Daraz.pk, for \$200 million. Such acquisitions have helped the country in enabling its economy. The Egyptian firm Swvl has also moved in the country's growing market

for tech startups and vowed \$25 million investment over the next two years to fund startups and to create over 10,000 jobs.

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Although the startup culture in Pakistan is still in the nascent stage, many startups have gained international recognition based on their

innovative ideas. Here are few of the shining startups of Pakistan that are achieving immense success in a short-term period.

Zameen.com (\$29 million)

Zameen.com was founded in 2006 and is one of the most well-funded startups in Pakistan. It lets you buy, sell, invest or rent properties in all major cities of Pakistan. Up till now, in disclosed venture capital funding, Zameen.com has raised \$29 million.

Airlift (\$14.2 million)

It is an app-based transportation service provider. It allows fixed-route travellers to book rides on luxury buses. To date, Airlift has raised \$14.2 million in disclosed venture capital funding.

Cheety.pk (\$11.5 million)

It is a Pakistan-based logistics company that offers multiple online delivery services such as delivering gifts, food, medicines, books, parcels, cosmetics, etc. The Startup managed to raise \$7.8 million in a Series A round from US-based investors in 2019, taking the total accumulated investment of the company to \$11.5 million. Currently, it is working in the major cities of Pakistan, like Karachi, Lahore,

Islamabad, and Rawalpindi. The company also aimed to increase the employment rate and development opportunities in the country.

Rozee.pk (\$8.5 million)

It is the most popular website for employers and job seekers in Pakistan. Till now, Rozee.pk has raised \$8.5 million in disclosed venture capital funding.

Bykea (\$5.7 million)

Founded in 2016, it is an on-demand transport and logistics startup. Up till now, Bykea has raised \$5.7 million in disclosed venture capital funding.

Inov8 (\$5.4 million)

It is the most well-funded FinTech startup in Pakistan. It is a B2B payment solutions provider specializing in e-commerce, branchless banking and mobile banking. It raised Series A investment of \$5.4 million from the Dubai-based Angel investor Nahyan bin Mubarak Al Nahyan.

For the past few years, the previous year seems to be the best in getting funds. According to Crunchbase, in 2019, investors poured \$36 million into 14 Pakistani tech startups across 15 deals.

Here is the list of top five tech startups that raised Seed funding in 2019

Airlift

Got \$2.2 million from Fatima Ventures, Gobi Partners, & Indus Valley Capital.

Tello Talk

Got \$1.6 million funds from i2i Ventures and SparkLabs Ventures.

Eat Mubarak

\$700K from Karavan and other undisclosed investors.

PriceOye

\$450K from Fatima Ventures & Artistic Ventures.

Bookme.pk

\$425K from Lakson Investments Venture Capital.

After seeding, here are those startups that raised Series A funding in 2019

Airlift

Got the highest amount of \$12 million from First Round Capital, Fatima Ventures, Gobi Partners, and Indus Valley Capital.

Cheetay.pk

Got \$7.8 million funds from undisclosed investors.

Bykea

Got \$5.7 million funds from Sarmayacar & Middle East Venture Partners.

Knowledge Platform

Got \$2 million from Lakson Investments Venture Capital.

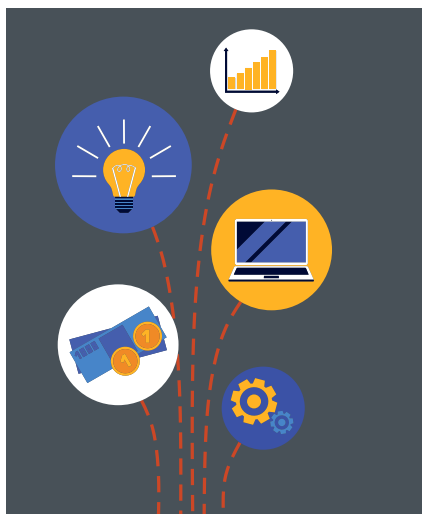


The Government is also taking part in boosting the economy by encouraging the startup environment. Because of the one-window operations for legal paperwork, Pakistan now stands at 108 on the World Bank's Ease of Doing Business Index. To solve the problems of seed capital, the Federal Government started an entrepreneurial loan scheme for young people back in 2014.

Because of the one-window operations for legal paperwork, Pakistan now stands at 108 on the World Bank's Ease of Doing Business Index

There are also several business incubators and accelerators that support entrepreneurs in initiating their startup businesses until they get successful enough to branch out on their own. PLAN9 by PITB, Microsoft Innovation Center and LUMS Centre for Entrepreneurship provide various business workshops to help creative minds polish their ideas and create a masterpiece.

PLAN9 by PITB, Microsoft Innovation Center and LUMS Centre for Entrepreneurship provide various business workshops to help creative minds polish their ideas and create a masterpiece



In a country, where the Startup's culture is at its initial stages, there is a lot more work to do. There are numerous problems that young people with innovative ideas have to face, the first and foremost is the lack of awareness about how to go forward with their idea as they have a lack of funding. In addition to that, awkward taxation regime, regulatory hurdles in IT sector payments from abroad and capital requirements for outside investors collectively create a massive barrier for the startups. Addressing these issues can help to boost up the growth for the startup space. Moreover, the Government should build a framework for investors and startups so that they exit their investment at maturity seamlessly.

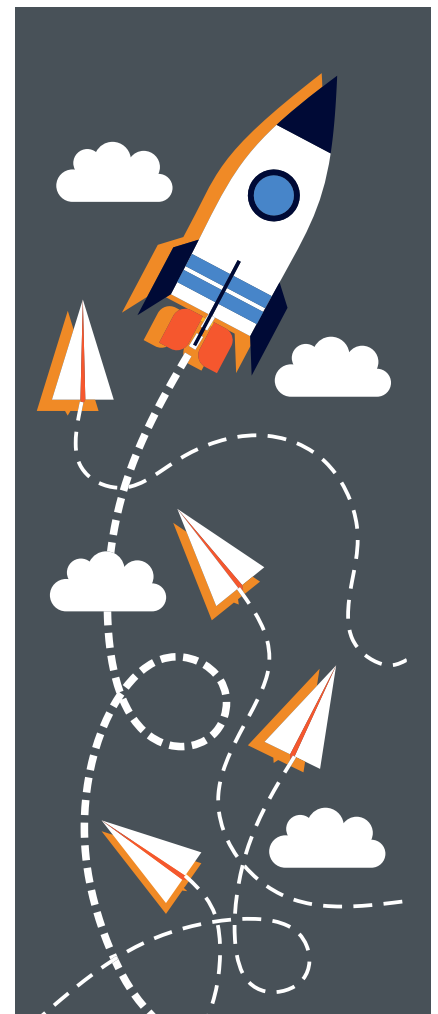
The Government should build a framework for investors and startups so that they exit their investment at maturity seamlessly



There is a need for awareness programs to put more focus on how to achieve a positive startup environment in the country.

The Pakistani market can become a hub for startup investments . With so many startups emerging and growing every year, hopefully Pakistan will shortly have its Nexicons and Unicorns

Pakistan is the 5th largest market in the world which comprises a rising consumer class, presenting enormous investment opportunities. The Pakistani market can become a hub for startup investments and with so many startups emerging and growing every year, hopefully Pakistan will shortly have its Nexicons and Unicorns.



TECH TWIST



The first remote control was called "Lazy Bones"

The first remote to control a television was developed in 1950. This remote was named "Lazy Bones" and it was developed by Zenith Radio Corporation. It was also the first commercially successful TV remote control. "Lazy Bones" what a name!

1



Google was called BackRub

Page ranking is a very complex part. One of the works of all these complimented works is that it also works by getting websites to rank pages based on valid backlinks. This is the reason why it was initially named Backrub by those who created google.

2

htc

HTC's EVO 3D is the first dual-camera phone

The HTC EVO 3D was a 3D-enabled Android smartphone developed by HTC, released exclusively in the United States. In May 2012, the Virgin Evo V4 was re-released by Virgin Mobile as a pre-paid smartphone. It had a 5 MP rear camera.

3



An iPhone is made up of about 75 elements

These elements are approximately two-thirds of the periodic table. This is because our phone has many parts. And different elements are required to make each part. Like lithium is used to make batteries. Gold, silicon, tin, etc. are also used in phones on motherboards.

4



Mobile phone throwing is an official sport in Finland

Mobile phone throwing is an international game that began in 2000 in Finland. The world record holder is Germany's Tom Philippe Reinhardt. You will not believe, he threw a phone at 136.75 meters.

5

By Aiza Riaz Butt

Video Gamers-The New Social Media Celebs



Does calling out names like Dota 2, Fortnite, PUBG, CS Go and what makes your heart skip a beat? Well, that means you are a gamer and this article is for you. A gamer's childhood may have memories like playing Mario and Lion King on those comparatively big desktop computers. Then came the chip video games and most of us spent hours sitting in front of our TV screens with consoles playing those simple, poor-graphic video games. None of us had the slightest idea what beast this gaming industry will evolve into.

After the release of the very first home video game console in 1970, the Magnavox Odyssey, few would have guessed that its arrival would herald the birth of a multibillion-dollar industry

After the release of the very first home video game console in 1970, the Magnavox Odyssey, few would have guessed that its arrival would herald

the birth of a multibillion-dollar industry. The Global game market revenue is registered to be \$164.6 Bn for the year 2020, expected to go over \$196Bn U.S. dollars by 2022, from nearly \$152.1 Bn in 2017. There are more than 2.5 billion video gamers from all over the world currently and growing day by day.

The gaming industry comprises of units such as Game Developers, Software Developers, Game Stores and hardware Manufacturers (consoles, PC, etc.). Each component of this industry is at



a considerable advantage due to the rapidly growing trend of e-sports. . PC games, Mobile Games, Nintendo, Xbox, PlayStation, Single-Player, Multiplayer, Online, LAN, Offline all sorts and shapes of games are available in the game market today. The Value of the PC Gaming Market Industry alone is estimated to be around \$33594M for 2011-2020, whereas the worldwide mobile gaming industry revenue is calculated to be 58712.98M from 2016 to 2023 as per GamingScan.com.

The Value of the PC Gaming Market Industry alone is estimated to be around \$33594M for 2011-2020, whereas the worldwide mobile gaming industry revenue is calculated to be 58712.98M from 2016 to 2023 as per GamingScan.com



ASUS has earned the most prominent name in developing the most purchased and liked gaming laptops and devices, followed by HP, Dell, Alienware and LENOVO

Some of the best game developers include Epic Games, Nexon, Supercell, Tencent, Microsoft, Sony, etc. This industry also stretches across a bundle of popular game stores such as Steam, Game Jolt, GOG, Microsoft Store and more. They are responsible for creating some of the high-rated games with exceptional graphics, high-quality content and absorbing methodology that became the reason for their recognition worldwide.

As far as the hardware manufacturers are concerned, ASUS has earned the most prominent name in developing the most purchased and liked gaming laptops and devices, followed by HP, Dell, Alienware and LENOVO.



However, the whole gaming thing has geared up by the grace of the internet. Of all the latest trends high-speed internet brought along, Online Gaming is so far the coolest one Online games are the new sport and the in-trend profession. Whether it be PUBG, CS Go, COD, Dota 2, FIFA, Fornite or other such games, if you become a pro player, you can unlock a high-in-demand digital skill that will earn you not only a good name but also a lot of money!

Along with making the world a Global village, the internet transformed the world into a Global Gaming hub, where one is in competition with the world in a game's battlefield. Thus, the increased competition makes it worth fighting for and quadruples the rewards. It is now typical that world-class gamers like Ninja, Dandi, Puppey are respected and treated like celebrities, and they have hundreds of followers throughout the gaming world on social media platforms. Fortnite phenom Tyler "Ninja" Blevins made \$17 million in the year 2019 only from his pro-gaming. Gamers YouTubing their gaming tips, tricks, and even sharing live gameplays make them to millions of views and subscribers, enabling it to become a fulltime profession for them.

If you become a pro player, you can unlock a high-in-demand digital skill that will earn you not only a good name but also a lot of money

Moreover, several international and national level gaming competitions that are arranged from time to time offer monetary rewards to the winners and runners-up. The International yearly Dota 2 tournament put on by Valve — doled out \$10 million to its winners, a record-breaking amount for an e-sports competition. And the winning team 'Team Newbee' were granted \$5 Million for 5 of its members which makes each of them an instant Millionaire. Fortnite World Cup, which was held in New York's Arthur Ashe stadium in July 2019 awarded \$3 million grand prizes to the 16-year old Kyle "Bugha" Giersdorf from Pennsylvania.

Several international and national level gaming competitions that are arranged from time to time offer monetary rewards to the winners and runners-up

When it comes to the gaming culture in Pakistan, we aren't immune to it either. Although Pakistanis do not support it like the rest of the world still, Pakistan has produced world-recognized e-gamers who have earned not only a good name for themselves and their families but also Pakistan as a talented nation globally.

Pakistan has produced world-recognized e-gamers who have earned not only a good name for themselves and their families but also Pakistan as a talented nation globally

Sumail Hassan, a young Pakistani gamer, earned the title of the 3rd highest-earning player in the world at the age of 17. He earned a total of \$3,591,225.34 from Dota 2 only. In February 2015, Sumail Hassan made the headlines for being the part of the Dota 2 Asia-winning team "Evil Geniuses", which won a total of \$1.2 Million. In August 2015, Sumail and his team won DOTA championship again with total prize money of \$6.6 Million and made to the Guinness World Record for being the youngest e-player ever to cross \$1 million mark. Sumail Hassan and his team Evil Geniuses (EG) bagged the 3rd spot at the DOTA2 2016 International Championship with a \$2.1 million prize money. He also made it to the list of Time magazine's most influential teenagers in 2016.

Other than Sumail, top Pakistani e-gamers include Yawar Hassan who earned a total of \$377,026.60 from playing Dota 2, Arslan Siddique generated \$72,556.20 from Tekken 7, and Shayan Makhdumi cashed \$50,000 from playing Auto Chess.

There is an unending list of talented-young Pakistani gamers who cashed their gaming passion and skills. Pakistani Gaming brands such as GameBird and Mountain Dew are responsible for holding national level mega gaming tournaments to encourage e-sports in Pakistan and bring forward the discouraged talent of gaming among Pakistanis. Dew Gamers Arena powered by Samsung welcomed gamers of PUBG Mobile, CS: GO and DOTA 2 from all over Pakistan with 1250+ teams, Dew Gamers Arena finally got their champions. Team Bablu bagged the PUBG title, and Gaming Hub were crowned champions for CS: GO whereas Recreational Hazard won the Dota 2 championship. All the three teams took home a whopping cash prize of Rs. 1 Million each. In addition to that, the top 5 teams of PUBG also received Samsung Galaxy A50 phones.

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The idea of E-sports altogether is not bad and Pakistan should embrace it wholeheartedly

The idea of E-sports altogether is not bad and Pakistan should embrace it wholeheartedly. However, the core issue is the requirement of constant screen interaction which should not be taken for granted rather suitable measures should be taken to rusticate them. As the cliché goes, the use of a thing makes it good or bad. So rather than out rightly rejecting and discouraging e-sports, it should be well-balanced with precautionary measures to make it entertaining rather than a health risk.



Larry Tesler

The man who invented copy and paste

Larry Tesler started working in Silicon Valley in the early 1960s, at a time when computers were inaccessible to the vast majority of people. It was thanks to his innovations - which included the “cut”, “copy” and “paste” commands - that the personal computer became simple to learn and use.



Larry Tesler was born in the Bronx, New York, in 1945, and studied at Stanford University in California. After graduating, he specialised in user interface design - that is, making computer systems more user-friendly. He worked for a number of major tech firms during his long career. He started at Xerox Palo Alto Research Center (Parc), before Steve Jobs poached him for Apple, where he spent 17 years and rose to chief scientist. After leaving Apple he set up an education start-up, and worked for brief periods at Amazon and Yahoo.

Larry Tesler's most famous innovation, the cut and paste command, was reportedly based on the old method of editing in which people would physically cut portions of printed text and glue them elsewhere. The command was incorporated in Apple's software on the Lisa computer in 1983, and the original Macintosh that was released the following year.

One of Larry Tesler's firmest beliefs was that computer systems should stop using “modes”, which were common in software design at the time. Modes allow users to switch between functions on software and apps but make computers both time-consuming and complicated. So strong was this belief that Tesler's website was called “nomodes.com”, his Twitter handle was “@nomodes”, and even his car's registration plate was “No Modes”.

Larry Tesler, an icon of early computing, died at the age of 74.

By Fizza Atique

GOING DIGITAL

The Challenges Facing Pakistan



The connectivity in any country is measured through the digital transformation and the application of digital technology in various aspects of human society. The digital transformation is executed as a result of digitization which converts the existing products and services into digital variants. All the latest technologies, including Internet of Things (IoT), automation, cloud computing, artificial intelligence, mobility have, a powerful impact on the social and economic conditions of the country.

The latest technologies increase productivity and efficiency while providing higher flexibility to carry out tasks that use to require more time being managed by man power.

All the latest technologies, including Internet of Things (IoT), automation, cloud computing, artificial intelligence, and mobility have a powerful impact on the social and economic conditions of the country

Pakistan is pursuing aggressive IT policy with a goal of boosting Pakistan's drive for economic modernization however, still Pakistan coming last in these slots show that much needs to be done. . Pakistan has about 60 per cent of its 207 million population in the 15-29 years age group; signifying a massive human and knowledge capital.

There are more than 2,000 IT companies and call centres; the number is increasing every year. There are over 0.3 million English-speaking IT professionals with expertise in the current and emerging IT products and



technologies. Besides that, more than 20,000 IT graduates and engineers are being produced each year.

Despite the impressive growth, Pakistan is still behind when it comes to connectivity

Despite this impressive growth, Pakistan is still behind when it comes to connectivity. According to latest Global Connectivity index, Pakistan has fallen from its last year's position and now ranks at 76th slot out of 79 countries. We tried to apprehend the reasons behind this slow progress so, here are few of the reasons that have put Pakistan behind other countries.

Gap between Technology advancement and Human Adoption

Essentially, technologies are advancing rapidly, but the skills of the majority of

humans are not advancing at the same speed. The gap between swiftly developing technologies and slower human development is growing bigger, and affecting the economy and the society even more. According to federal ministry of education, the literacy rate of Pakistan as of 2019 remained 62.3%. It means 39% of the total population is still uneducated.

The gap between swiftly developing technologies and slower human development is growing bigger, and affecting the economy and the society even more

Among total literate people, many women are not familiar with the latest technology and are adamant when it comes to adopting it. Many women rely on male member of the home to get things done such as internet banking, e-commerce etc.

Lack of Trust on the Internet

Another daunting obstacle for the digital intervention is the lack of trust in the internet. Due to the increasing number of cyber-attacks and growing black market for stolen data, many people are not comfortable when it comes to using the internet. A study conducted by Comparitech has revealed that Pakistan ranks 7th among the countries having the worst cybersecurity.

Due to the increasing number of cyber-attacks and growing black market for stolen data, many people are not comfortable when it comes to using the internet

Not only individuals and small business are facing cyber threats but big organizations like Careem and many banks also faced the same issue where private information of thousands of users was compromised.

Cost of Internet and Phone

Availability of affordable smartphones and cost-effective mobile data also holds enormous importance to connect the unconnected.

Due to irrational taxes imposed by government on MNOs and OEMs, the cost of using a mobile phone is very high

However, due to irrational and unfair taxes imposed by government on MNOs and OEMs, the cost of using a mobile phone is very high. Pakistan is the fourth country in the world with unaffordable internet. Not having a uniform internet connection is a central factor in low connectivity as well as drowning economy.



Limited Network coverage in Rural Areas

Pakistan has a population of 219 million as of March 2020. There are 165 million cellular subscribers and 78 million broadband subscribers, which means that in this digital era, 50 million Pakistanis do not have mobile phones, whereas 141 million have not even used next-generation mobile technology. Among the total population, 37.9% of people live in cities whereas, rest of them live in rural areas.

Among the total population, 37.9% of people live in cities, rest live in rural areas

Since rural areas are deprived of these services, leaving most of the population still unconnected.

Lack of Awareness about Online Services

The world is transforming at a fast pace, and now people are more comfortable in adopting online services. However, Pakistanis are still struggling to use such services and are greatly relying on old means. Although social sites like Facebook, Snapchat, Tiktok are gaining popularity in Pakistan but online services are not used that much.



There are very few people who use internet to make doctors' appointments, take online courses, book tickets or avail any other such service

There are very few people who use internet to make doctors' appointments, take online courses, book tickets or avail any other such service.

E-government services

E-government especially through mobile applications is still a relatively new phenomenon in Pakistan. The Government offices are still run through old technique of pen and paper management that is not only time consuming but also wastes a lot of resources. Though government is trying to incorporate e-gov services but the pace is little slow. Even people are not comfortable in adopting these latest trends. For instance, it was announced to promote paperless environment and all big companies like PTCL, IESCO decided to send online bills. But people were not happy about it and requested companies to provide bills on papers. Hopefully, once the government offices go 100% online the digital uptake will improve.



Pakistan among Countries with Most Internet Shutdown

While covering media blackout in Kashmir, Al Jazeera revealed figures from 2016-18 listing countries with most internet shutdowns. Pakistan was second in conducting deliberate media blackouts. So, people deem internet unpredictable hence they don't want to rely on it.

Due to government's internet shutdown, people deem internet unpredictable hence they don't want to rely on it

Today 'digital' is the talk of a town. We know now that mobile is the future of everything. With the rise of the Internet of Things and mobile devices our lives and habits have clearly changed. Everything is now connected and if it's not, it's about to. In order to compete with the world, Pakistan will have to step up its game sooner. We have the human capital and the basic infrastructure required to build a digital landscape, what we need is a collective partnership between all stakeholders. And if this happens, there is no stopping digital Pakistan.

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Vivo Extends the Warranty of its Smartphones in Pakistan



In the wake of current COVID-19 outbreak, following the government directives Vivo, the global smartphone brand has closed all of its service centers in Pakistan until further notice. This strict measure has been taken to ensure the safety of customers and employees.

However, in order to compensate for this Vivo has extended the warranty for its smartphones in Pakistan. Warranty period expiring between 18th of March to 30th of May 2020 has been extended till 31st of May 2020.

“In these crucial times, we stand firm to our commitment and this warranty extension is provided to facilitate our valued customers amid the COVID-19 outbreak.”

Said Mr. Kevin Jiang, Director Customer Service vivo Pakistan.

The offer remains unchanged until further notice and Vivo customers can reach out via official website and social media channels for all service-related queries.

Vivo has already taken a slew of initiatives to curb the spread of COVID-19. Employees in Pakistan are asked to work from home and all offline product launch events and activities have been cancelled.

The Vivo logo is displayed in white lowercase letters on a solid blue rectangular background.

Tecno Camon 15 Pro

Featuring Selfie pop-up camera

Design

The Tecno Camon 15 Pro offers a polycarbonate plastic glossy finish at the back panel with lining pattern making it quite attractive. The phone can be said as one of the most distinct-looking smartphone from the company stable. The front has complete bezel-less display with a slight chin at the bottom. The curved edges allow the phone to easily fit in your hands, but we found the phone to be a bit heavy.

The back is made of glass, which also means that it will attract a lot of fingerprints and smudges, but thankfully, the company is giving you a protective case with the smartphone.

Display

The Tecno Camon 15 Pro comes with a 6.53-inch Full HD+ Full View display with a screen resolution of 2340 x 1080 pixels and 91.2 per cent screen-to-body ratio. The phone does not feature any notch as it comes up with a pop-up selfie camera. Overall, the phone features good viewing angles. It comes with good outdoor visibility as texts are easily readable in daylight condition, all thanks to the 480nits brightness.

Cameras

Tecno Camon 15 Pro is the first device from Tecno to feature a pop-up selfie mechanism. The company has added a light on the mechanism, which lit when the camera pop-up or goes down with sound. The device features a 32-megapixel pop-up AI Selfie camera.

Talking of quad rear camera configuration, Camon 15 Pro has a 48-megapixel sensor, 5-megapixel ultra-wide-angle, 2-megapixel macro sensor, and low light lens.

That the phone is able to take good camera shots with detailing to the point. The subject and background colors are very well maintained by the camera and you won't feel oversaturated and overexposed colors in the images. In the portrait shots, edge detection is well handled by the camera. The phone is able to take very good macro shots and wide-angle shots as well

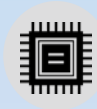


with accurate colors and good detailing. We were impressed by macro shots as the detailing was on point. It focusses the object very fast for taking macro shots and the color reproduction came out to be pretty close to the source. So, we found the camera of this phone impressive at this price point.

Operating System and Performance

The operating system in Tecno Camon 15 pro is Android 10.0. There is a 2.0 GHz octa-core processor. The chipset installed in the smartphone is Helio P 35. Overall, the performance is on the ordinary side. Tecno Camon 15 pro has a Li-po non-removable 4000 mAh battery that last for more than two days with average use.

Tecno Camon 15 pro has a decent memory space. There is a 128 GB built-in storage space with 6 GB RAM. Along with it, it also supports a micro SD card up to 512 GB. In terms of memory, the smartphone is up to the mark.



**128GB Built-in,
6GB RAM
Octa-core**



**(Li-Po Non removable),
4000 mAh**



6.6 inches



**48MP+5MP+2MP+
QVGA, LED Flash**

PKR.29,999/-

Pros

- Great battery life
- Beautifully Designed
- Impressive Camera

Cons

- Comes with Bloatware
- No fast charging

Early Verdict

Tecno Camon 15 Pro can be called as one of the best-designed smartphones from the company. The gradient finish gives a premium look and the display looks immersive. In terms of performance, you will not face any trouble, though the user interface is still loaded with a noticeable amount of bloatware. The cameras look impressive. This one can be a value for money smartphone if your priority is camera for buying a smartphone.

TECNO has finally Launched Camon 15 in Pakistan

TECNO



TECNO, a global leading mobile phone brand has finally unpacked its most awaited CAMON 15 in first ever Live Broadcast event happened in different top notch media channels and was hosted by talented Juggan Kazim. Camon 15 is equipped with 48 MP Quad camera, Night lens perfect for night photography, 32 MP pop-up selfie camera and advanced specs includes TAVIOS artificial technology.

Camon 15 launch event was recorded on 15 March and was broadcasted on Tier-1 TV and on more than 13 social media channels including YouTube and Facebook.

Mehwish Hayat was revealed as TECNO's brand Ambassador at the event launch. The event was chaired by Tecno Pakistan General Manager – Creek Ma, along with the Sales Director – Adeel Tahir. All the key distributors of Tecno were also gathered in the launch ceremony!

Mr.Creek Ma, the General Manager of TECNO Mobiles was immensely pleased at the launch event: "On behalf of TECNO I thank you all too participate in this grand launch event of Camon 15. We have proudly extended our services in modernistic countries around the world. We believe in Localized Innovation through which we provide best products to our consumers by maintaining our commitments. TECNO works with the ideology of 'Expect More' and hence always thrives amongst its rivals"

Mr. Adeel Tahir gave a detailed presentation on some unique & astonishing features of Camon 15.

International media industry superstar, Mehwish Hayat praised CAMON 15 due its best photography feature. Powered with TAIIVOS Camon 15 is all set to provide you the ultimate camera experience with its promised clarity.

There are two versions of the Camon 15; the standard device Camon 15 with 4GB + 64GB for PKR/- 22,499 and the premium version Camon 15 Pro with 6GB+128 GB for PKR/-29,999 with mind blowing features will be available on Daraz and offline market too. All those who will make order at Daraz will get amazing bag pack from Tecno.

Camon 15 will be available in Fascinating Purple, Shoal Gold all across Pakistan, whereas Camon 15 Pro will be available in 2 amazing colors of Ice Jadeite, Opal White.

Moreover, Camon 15 Pro is equipped with many more great features such as 6.6 inches screen size, 4000mAh Li-Polymer, non-high density large-capacity battery, 128GB ROM + 6GB RAM and nonetheless with 48MP Quad camera and 32 MP pop up front camera that will let you capture flawless shots day and night!

How To!

The Android operating system offers a variety of options to its users. Some of them are useful for all, whereas others are meant for the advanced users only. One of such setting is the Access Point Name (APN). APN is very much necessary to have an internet connection. Access Point Name is the information that is used by the phone to connect to the internet. APN contains the address that the Android device users to have an internet connection.

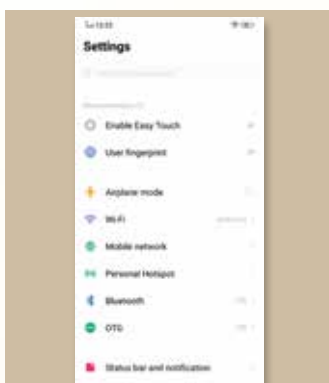
When the Android device is connected to the network, the users can surf the internet, send SMS or MMS, and also make calls. Usually, all the Android devices will have APN settings from the mobile phone operator. But, if your smartphone does not have a valid APN setting, then take out the SIM card and insert it again. In case your Android device is not supported to the database of the telecom operator, then you must set up the APN settings manually.

Steps to set up APN Settings on Android device

Here are some of the steps to be followed to set up APN settings manually on your Android device.

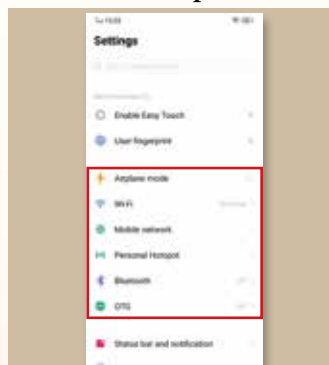
Step 1

Firstly, Go to “Phone’s Settings”



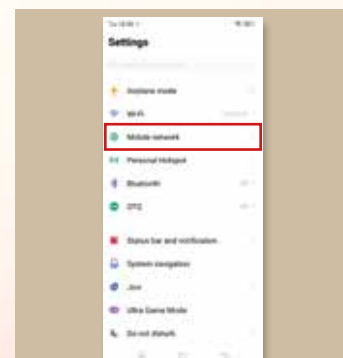
Step 2

Scroll down to “Wireless & Network Options”



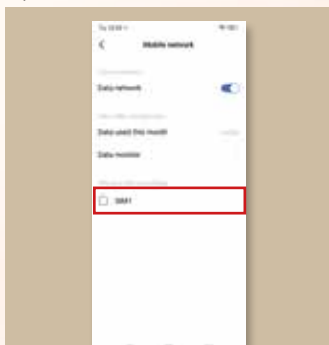
Step 3

Locate and Tap on “Mobile Network Options”



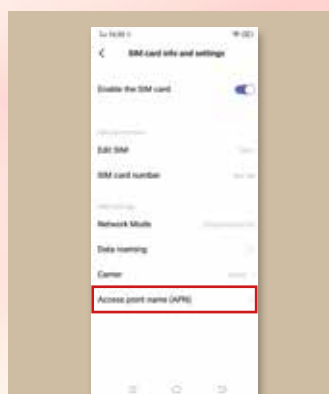
Step 4

Locate “SIM card info and settings” and tap on your desired SIM that you want to create APN for



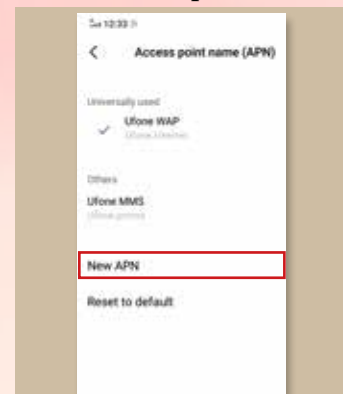
Step 5

In the SIM Settings, tap on APN (Access Point Name)



Step 6

In the final step, tap on the “New APN” option.



The APN settings are usually included in the SIM card. But if you can't find out, it is better to contact your telecom operator. The operator will help you to fill up all the fields of the SIM card. After it is done, click on the 'Save' option which is at the upper right corner of the screen. This way you can simply set up the APN settings manually on your Android device.

TELECOM CAMPAIGNS

Telenor Sath Hai TVC

Telenor Sath Hai is a short TVC presenting the message in the best possible way. While asking people to stay at home, the telecom operator shared how its services are helping people during COVID-19 crisis. Ending with the Tagline “Stay home Stay Connected” shows that the operator is also trying to spread awareness among users regarding the pandemic. The overall concept is simple with average acting but the voice-over is too good.

Verdict: Good Effort



Say Bye to Boredom with Jazz



Due to the self-isolation drive going on in Pakistan, all operators have launched special packages to keep people connected and keep their hopes high even during these crises. The Jazz has come up with an exciting TVC for its newest package that allows customers to play games and watch 60+ live channels on Jazz TV. The company has tried to keep the advert funny, but on a lighter note, it's not that funny.

Verdict: There is always a room for improvement

10% Cashback on Online Mobile Balance Recharge TVC

When we compare all the operators, Ufone has always remained on the top when it comes to releasing creative TVCs. However, it seems like this time their agency was quarantined as the TVC is not up to the mark. Though the overall message is conveyed in a good way under the tagline “Tum Khairiat se rhao”, but the acting, music and the theme of the advert could have been better.

Verdict: Good effort





UC Browser

For the very first time, I saw the ad of UC Browser on Pakistani TV Channels. The ad is simple and delivers the message of keep moving in life whatever the circumstances are. The performers of the ad also performed good and shows that how UC Browser can help you in smooth browsing while the other browsers are not performing good on low-internet speed.

Verdict: Nice ad!



Askari Digital Banking

The new ad of Askari bank highlighted its digital banking features in a very entertaining way. It provides smart solutions to all banking issues by introducing new trends. The digital banking is available 24/7. The song of the ad is good. The performance of the performer is also very energetic.

Verdict: Cool ad!



Food Panda-Free delivery

The new ad of food panda is short and simple. The message delivered in the ad so intelligently without creating any drama. Foodpanda app is now delivering the food to its users without deducting the delivery charges.

Verdict: Thumbs up!



how COOKIES work on the web

Cookies aren't programs, they're just plain text that your browser stores on your computer.

They're basically stored as a name matched with a piece of information.

COOKIE RECIPE

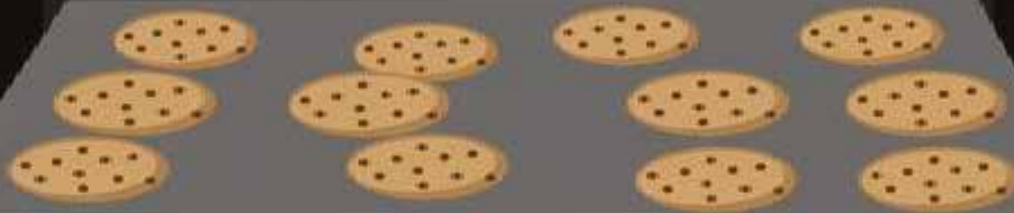
That information could just be a random id number to remind the website about who you are as you go to different pages. That's the most common use.

A cookie can't do anything on it's own. It must be used by a browser and website.

You can control most of the different parts of the process with your browser's settings

08:59

The server can set an expiration date for when the cookies will be removed.



The server can also set a path, specifying the part of the site that the cookie refers to. Most concerns about internet privacy and cookies stem from the use of their tracking capabilities.



The pages you surf can be used for advertising that targets you specifically. A cookie can be used by multiples sites, tracking you through multiple sites.

This creates a very rich profile of information about you

So yes, cookies in some cases may be a trade off between privacy and convenience

Top Applications and Games for your Smartphone



Mindustry

Create elaborate supply chains of conveyor belts to feed ammo into your turrets, produce materials to use for building, and defend your structures from waves of enemies. Play with your friends in cross-platform multiplayer co-op games, or challenge them in team-based PvP matches.



Microsoft Edge

Browse anywhere with one continuous experience from your phone to your computer and other signed-in devices. Microsoft Edge gives you the tools to protect your privacy online with features like tracking prevention, Adblock Plus, and InPrivate mode.



Call of Duty®: Mobile

Official CALL OF DUTY® designed exclusively for mobile phones. Play iconic multiplayer maps and modes anytime, anywhere. 100 player Battle Royale battleground? Fast 5v5 team deathmatch? Scary Zombies action? Sniper vs sniper battle? Activision's free-to-play CALL OF DUTY®: MOBILE has it all.



Hearthstone

Blizzard Entertainment's award-winning collectable card game! Collect powerful cards and create mighty decks. Summon minions and sling spells to seize control of an ever-shifting battlegrounds. Wield a masterful strategy and defeat all players who dare challenge you.



TuneIn - Live Sports & News

Listen to your favorite radio stations for free with TuneIn Radio. With over 100,000 radio stations, TuneIn has the largest selection of sports, news, music and talk radio from around the world.



Sky: Children of the Light

Welcome to the enchanting world of Sky, a beautifully-animated kingdom waiting to be explored by you and your loved ones.



Daisychain Music Recorder

Useful tools for recording via iOS continue to hit Apple's App Store, and the new Daisychain Recorder is among the most unique for collaborative music and audio content production.



Lifesum: Diet & Macro Tracker

Personalized diet plans, food tracker, calorie counter and healthy recipes, all in one place. Get healthy and feel great with Lifesum!

Join 40 million users on the journey to better health and discover how tracking small habits can make a big difference in becoming happier and healthier.



Pocket Casts

Pocket Casts is the world's most powerful podcast platform, an app by listeners, for listeners. Our podcast player provides next-level listening, search and discovery tools. Find your next obsession with our hand curated podcast recommendations for easy discovery, and seamlessly enjoy your favorite shows without the hassle of subscribing.



Meditopia: Meditation, Sleep

Well, unlike most of the other options, Meditopia offers more than just a short-term solution to falling asleep and de-stressing; we offer each member over 1000 deep-dive meditations that get right to the heart of what we as a people, regardless of age, background, or experience, are dealing with everyday.



**Samsung Galaxy
S20+**

Display: 6.7 inches
Memory: 128GB 8GB RAM
Camera: 12MP+64MP+12MP+0.3MP



Oppo Reno3 Pro

Display: 6.5 inches
Memory: 128GB 8GB RAM, 256GB
12GB RAM
Camera: 48MP+13MP+8MP+2MP

**An Online Store with
Official Warranty**
[www. phoneexpress.pk](http://www.phoneexpress.pk)



**TECNO Camon
15 Pro**

Display: 6.6 inches
Memory: 128GB 6GB RAM
Camera: 48MP+5MP+2MP+QVGA



Realme 5i

Display: 6.52 inches
Memory: 32GB 3GB RAM, 64GB
4GB RAM
Camera: 12MP+8MP+2MP+2MP



Xiaomi Mi Note 10 Pro

Display: 6.47 inches
Memory: 256GB 8GB RAM
Camera: 108MP+12MP+5MP
+20MP+2MP



Samsung Galaxy A71

Display: 6.7 inches
Memory: 128GB 6GB RAM,
128GB 8GB RAM
Camera: 64MP+12MP+5MP+5MP



Infinix Note 7

Display: 6.95 inches
Memory: 128GB, 6GB RAM
Camera: 48MP+2MP+2MP
+ low light video camera



Infinix S5 Pro

Display: 6.53 inches
Memory: 64GB 4GB RAM,
128GB 6GB RAM
Camera: 48MP+2MP+QVGA



vivo V17

Display: 6.44 inches
Memory: 128GB 8GB RAM,
256GB 8GB RAM
Camera: 48MP+8MP+2MP+2MP



Huawei P40 Pro

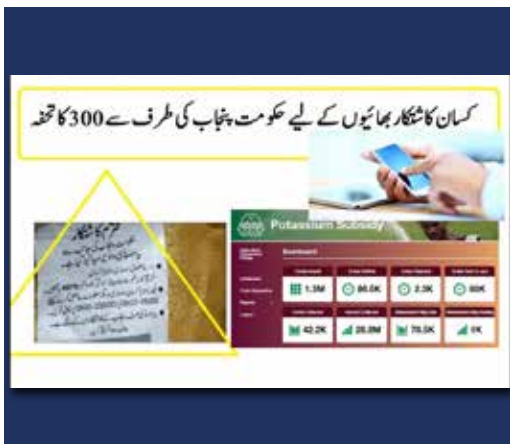
Display: 6.58 inches
Memory: 128GB 8GB RAM, 256GB
8GB RAM, 512GB 8GB RAM
Camera: 50MP+12MP+40MP+
TOF 3D

SMART MOVES

E-pay Punjab

ePay Punjab is the first ever government payment gateway for citizen facilitation and ease of business. The solution will be an integrated and centralized system powered by GoPb web and mobile application that will include all the scheduled banks, State Bank of Pakistan (SBP), and 1-link for interconnectivity.

In its first phase, 13 taxes/levies of 5 departments are made part of the system. Excise & Taxation, Board of Revenue (BOR), Punjab Revenue Authority (PRA), Industries and Transport are the departments connected with the system, where citizens can pay Token Tax, Motor Vehicle Registration, Transfer of Motor Vehicle, Property Tax, Professional Tax, Cotton fee, e-Stamping, Mutation fee, Fard fee, Sales Tax on Services, Punjab Infrastructural Development CESS, Business Registration fee and Route permit through e-pay Punjab.



Potassium and DAP Subsidy

The PITB has developed a web portal enabling fertilizer marketing companies to generate unique codes for their products (MOP, SOP and DAP). The codes are printed and pasted inside fertilizer bags. The registered farmer has to purchase the bag, scratch the coupon and send an SMS to the designated number. The system recognizes the details and sends a confirmation. Then the registered farmer can go to an agent with the SMS and original CNIC to encash the subsidy money. The system is developed in such a way that every successive transaction, location and usage detail is updated in real-time. The process has resulted in more transparency and accuracy in delivering cash subsidies to registered farmers. It has also resulted in a vast database of registered farmers and statistics regarding geographical use of certain fertilizers.

Process Serving Agency

PSA is both Mobile and Web Application developed for the process automation of issuing of summons and notices from different courts. PSA web shall be used to create new Notice, the Notice may be summon, Warrant, Notice Auction, Notice Property Plutch or any other type. The newly created notice shall have all related information of Notice and the Person's details who shall be receiving the notice, after new notice is created it is then marked to the Process Serving Agent of the same district or to Court of the other District. PS Agent receive a notification message on his Mobile Phone, this message shall have all relevant information of the Notice and Address detail where the Notice shall be dispatched. PS Agent visits the place, takes photos of the place and records an audio of the receiving person, System automatically picks the geo-location of the place from where the photos has been taken or the Activity has been possessed, thus court can verify that the place has been visited or activity has been performed on particular date time.



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