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Issue 40 | Sep-oct 2019





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**Adnan Khan**  
Managing Editor

Dear Readers,

The telecom landscape of the world has evolved dramatically in a very little time. The internet has become the key enabler of social development and economic growth. While in many areas, mobile is the major and sometimes the ONLY means of internet access. Pakistan has only 37.9% of people living in the cities while the rest of the people live in rural areas. This means that a large number of unconnected population lives in rural areas where most of the basic necessities of life are unavailable, including mobile broadband. To attain the full benefits of mobility, expanding network coverage is of monumental importance. Therefore, at a time like this when the country is preparing for 5G, the government and the industry players should not forget about the huge chunk of the market that belongs to the unconnected rural community. This is the theme of our feature article, "Bridging the Mobile Broadband Gap in Rural Areas".

Working whenever you want is the best freedom one can have. It's all possible in the unconventional field of freelancing. The job market is very saturated in Pakistan, and not all youngsters are able to get jobs in big firms. In such situation freelancing boom took the country by storm and changed the job market situation. We have discussed in great detail how freelancing has become a new life of Pakistanis in one of our articles. Freelancing is one of the blessings of modern internet era. It has opened many venues for progress and development for the country. It has the power to construct generations and tame people in the desired direction. In our article, "How the Internet can kickstart a new era of progress in Pakistan" we have discussed the other potentials on internet and how it can take the country forward.

With a portfolio of over 700 towers and managed sites in Pakistan, edotco has developed built-to-suit and co-location offerings to enable telecommunications providers to efficiently meet their growing infrastructure requirements. We had a chance to meet Arif Hussain, Country Managing Director, Edotco for an exclusive interview where he shared his goals and aspirations for edotco.

Like always, our regular sections including phone reviews, Smart moves, TVC reviews, top applications and smartphone wish list are also part of our current issue. We always try to bring something new and interesting for our readers, we hope you guys will appreciate our efforts and give us your feedbacks so that we can improve further.

Enjoy Reading...!!!

Thank you,  
**Adnan Khan**  
Managing Editor

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# Bridging the Mobile Broadband Gap in Rural Areas



**T**he telecom landscape of the world has evolved dramatically in a very little time. The internet has become the key enabler of social development and economic growth. While in many countries, mobile is the major and sometimes the ONLY means of internet access.

We Are Social and Hootsuite's latest collection of Global Digital reports revealed:

- There are 5.11 billion unique mobile users in the world today, up 100 million (2 percent) in the past year.
- There are 4.39 billion internet users in 2019, an increase of 366 million (9 percent) versus January 2018.
- 3.26 billion people use social media on mobile devices in January 2019, with the growth of 297 million new users representing a year-on-year increase of more than 10 percent.

While the on-the-go connectivity has become a mundane thing for people in large cities, for many rural communities mobile broadband remains painfully out of reach. There are still more than a billion people offline, which doesn't only mean that people are missing out on their social media updates and phone calls; on the contrary, they are unable to participate in the digital economy and unaware of the opportunities it can offer them.

**While the on-the-go connectivity has become a mundane thing for people in large cities, for many rural communities mobile broadband remains painfully out of reach**

Pakistan is a country with a population of 212 million and as of May 2019, there were

approximately 162 mobile subscribers and 60 million mobile broadband users in Pakistan. This shows that there are still 52 million people who don't use mobile phones while 152 million people have yet to taste the fruit of the next generating mobile technology. Pakistan has only 37.9% of people living in the cities while the rest of the people live in rural areas. This means that a large number of unconnected population lives in rural areas where most of the basic necessities of life are unavailable, including mobile broadband.

**Pakistan has only 37.9% of people living in the cities while the rest of the people live in rural areas**

In an era of connectivity, when everything is dependent on the internet, this connectivity gap exerts the most detrimental effect on the socio-economic structure of our country.

**A 10% increase in mobile broadband penetration drives a 1.4% increase in GDP for low-to-middle income countries like Pakistan**

The World Bank estimates that the mobile internet has a higher positive economic impact than fixed-line broadband, particularly in developing countries, and that a 10% increase in mobile broadband penetration drives a 1.4% increase in GDP for low-to-middle income countries like Pakistan. This GDP growth, coupled with stimulation of the job market, helps fuel a beneficial circle that reduces poverty, improves infrastructure and services, and further increases internet access and usage.

The mobile is the most powerful technology that can solve more than half of the social and

economic issues. The availability of mobile broadband in rural areas means even the most remote schools of the country can connect to the Internet and share ideas with others.

**Extending mobile coverage to the rural areas is a great economic challenge due to the higher costs required to roll out infrastructure in these areas**

This, in a way, will provide equal learning opportunities to all students, despite their backgrounds and medium of education. Pastoralists and farmers can get instant information regarding cattle herding and farming and check on local market prices and make important decisions. Provision of better and timely health services will also be made possible by sending critical health data and life-saving information through text messages to clinics to support rapid diagnoses for patients in remote villages.

The importance of minimizing the coverage gap has gained the utmost importance in today's digitized world but it, not a small feat in any way.

**A clear roadmap regarding spectrum auctions and future telecom policies will enable operators to build their strategies accordingly**

Extending mobile coverage to the rural areas is a great economic challenge due to the higher costs required to roll out infrastructure in these areas. Due to lower population density, the ARPU rate is also low therefore, it can cost up to twice as much to deploy new base stations in rural areas.



This lack of return on investment presents a significant obstacle in extending mobile coverage to the far-flung areas.

**To ease the financial burden of network expansion for mobile operators, the government should also impose as low as possible taxes and fees and refrain from imposing infrastructural taxes and import duties**

To improve the mobile network coverage in the rural areas, both the private sector and the public sector has important roles to play. To encourage investment in extending rural coverage government should make clear policies with respect to different technologies.

**Network sharing has emerged as the most viable strategy for expanding network coverage while minimizing the cost**

The government should auction off the spectrum with the aim of boosting connectivity rather than as a technique to maximize its revenues. A clear roadmap regarding spectrum auctions and future telecom policies will enable operators to build their strategies accordingly. The government should also grant technology-neutral licenses and allow operators to trade spectrum if needed and auction sufficient spectrum to avoid network congestion.

To ease the financial burden of network expansion for mobile operators, the government should also impose as low as possible taxes and fees and refrain from imposing infrastructural taxes



and import duties. In addition to that, Nondiscriminatory access to public infrastructure and context-appropriate competition policy, especially concerning market structure should be introduced.

It is also the responsibility of the government to provide electricity and other infrastructural facilities so that operators could perform efficiently. Universal Service Fund (USF) should be given the leading role in the whole process and robust policies should be developed for the organization.

Besides these direct initiatives, the government can also help overcome the coverage gap by introducing policies to increase the mobile broadband uptake in the country as well. Government should:

- Bring ICT into the school curriculum
- Introduce literacy and digital skills education programs in public institutions
- Connect schools and public offices through broadband to promote a connected environment
- Support entrepreneurs to develop a local digital ecosystem
- Strengthen m-government services

There are a number of ways that mobile operators can use to cut down their operating costs and invest in network expansion. Network sharing has emerged as the most viable strategy for expanding network coverage while minimizing the cost.

According to Accenture, documented examples from Asia and Europe suggest CAPEX savings of around 40–50% (mostly from combining new sites and towers) and OPEX of 20–30% (mostly from fuel and other running costs).



**At a time like this when the country is preparing for 5G, the government and the industry players should not forget about the huge chunk of the market that belongs to the unconnected rural community**

Back in March 2010 mobile operators in Pakistan agreed to a voluntary tower sharing while in August 2010 they signed a MoU with PTA regarding infrastructure sharing as well. After that, a number of agreements were signed among the operators the first one being signed between Ufone and Jazz back in 2011.

Mobile operators should continue with the approach and improve their coverage to rural areas together. The mobile operators can also go for community networks

that target remote communities using micro base stations and a backhaul solution that link into the core network of mobile operators.

**By employing better technologies like small cells and indoor towers operators can improve their service quality thus enhancing demand for mobile services, therefore unlocking revenue opportunities that improve profitability**

By employing better technologies like small cells and indoor towers operators can improve their service quality thus enhancing demand for mobile services, therefore unlocking revenue opportunities that improve profitability.

To attain the full benefits of mobility, expanding network

coverage is of monumental importance. Introducing affordable devices and services plans, local content and awareness regarding the use of technology will all be in vain if people do not have access to mobile broadband. Therefore, at a time like this when the country is preparing for 5G, the government and the industry players should not forget about the huge chunk of the market that belongs to the unconnected rural community.



# TECH TWISTS

01



## Signatures

As of 2012, inside the original Macintosh case, you'll find the 47 signatures, one from each member in Macintosh division in the year 1982.

02



## Keyboarding distance

During an average working day, the distance covered by the fingers of a typist is around 12.6 miles, which is approximately 20 km and its a lot more than what we expected.

03



## Dvorak Keyboard

One of the main reasons Dvorak keyboard is added to the list is because it is much faster and efficient than the QWERTY keyboard. In fact, it is as much as 20 times faster than the QWERTY layout.

04



## Total devices connected to the internet

According to an estimate, the total number of devices connected to the internet by the year 2020 is going to be 31 Billion.

05



## Google Search and its consequences

According to an estimate, Google handles about 1 billion search queries every day and because of this, it releases 200 tons of CO2 every day, i.e. 7600kg of CO2 every hour.



# Smart Moves for smarter Nation

## Income Tax Return App

The new electronic form for individuals, salaried individuals and association of persons for tax year 2019 will also be uploaded on the FBR website after making necessary amendments.

An online tutorial will be available to guide filers. The new App makes tax filing handy and less time consuming.



## 'Advanced Digital Skills Training Programme' for K-P's youth



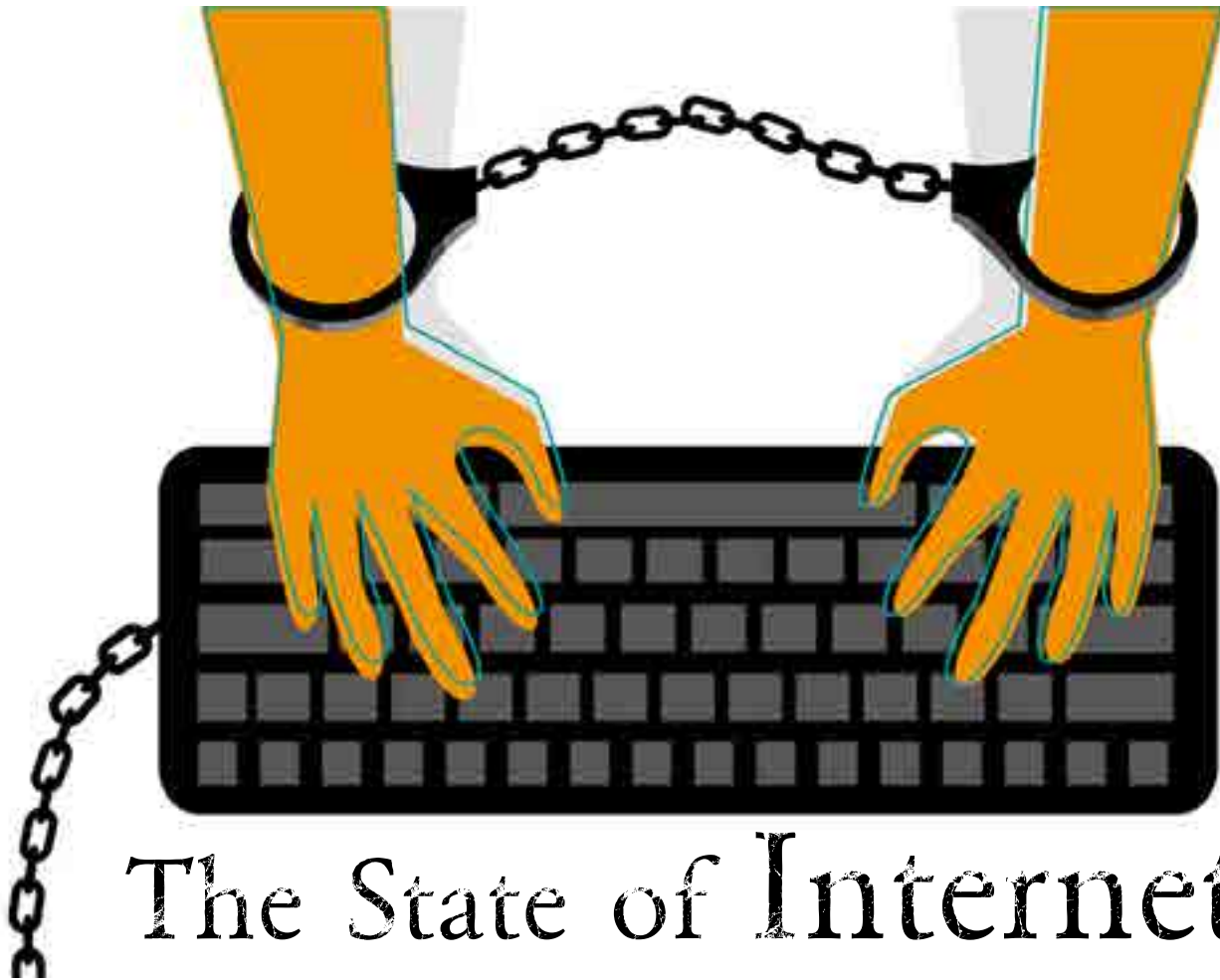
United Nations Development Programme (UNDP) and Khyber-Pakhtunkhwa Information Technology Board (KPITB) in collaboration with Abacus Consulting are set to train and educate the youth of K-P on advanced digital skills under UNDP's 'Kamyab Jawan: Youth Empowerment Programme' and KPITB's 'KP Youth Employment Program'.

The courses offered will be in modules that will equip the students with skills needed to access digital opportunities in Pakistan and globally. The students will be trained on Amazon Web Services (AWS Foundation and AWS Solutions Architect), Microsoft Azure and Big Data Analytics.

## Criminal Record Management System

The PITB has developed the CRMS based on CNIC number. It is a digitized system that contains personal details of criminals. The idea is to maintain a comprehensive database containing complete criminal profile that can be easily fetched via CNIC and/ or biometric information as required. It is easy to retrieve and search over a web-based mechanism, smartphone or even SMS. For criminal record verification of suspects, biometric devices are connected to the CRMS. It is used for both live and latent fingerprints scanning and matching.





# The State of Internet Freedom around the World

**C**learly, the internet has provided us a great channel to exchange information and distribute it across the globe. It has become an important medium through which we can express our thoughts and ideas and share them with others. The democracy and human rights activists use this essential platform to bring reform in the political, social, and economic conditions of any country.

Recognizing the power of the new technologies, the big powers of the World and high authorities have invented some specific and non-specific ways to filter, monitor, and block the openness of the internet. The more disappointing thing is

that a number of democratic states have also implemented various restrictions just to avoid political, social and economic issues raised through social media.

**Recognizing the power of the new technologies, the big powers of the World and high authorities have invented some specific and non-specific ways to filter, monitor, and block the openness of the internet**

According to a report, in 18 countries, Governments have increased the state of observation

in June 2017. At least 15 countries are considering new "data protection" laws, to easily access social media users' data.

Moreover, in some countries, access to social media was temporarily or permanently blocked and users were unable to use any messaging platform.

During 2018, most Governments used claims of fake news and of data breaches and other scandals as an excuse to move closer or to adopt a strict model of Internet censorship. In the same time period, almost 17 governments proposed new laws that restrict online media in the name of coping up the issue of fake news.

## How Free Is the Internet?



Based on a study of internet freedom in 65 countries, covering 87 percent of the world's internet users. The 2018 analysis focuses on developments that occurred between June 2017 and May 2018.



Source: Freedom House



statista

Other than that eighteen countries have increased the efforts of surveillance.

**During 2018, most Governments used claims of fake news, data breaches and other scandals as an excuse to move closer or to adopt the Chinese model of Internet censorship**

China is at the fore front among the countries that have taken up extensive measures to curtail digital freedom. It is working to explore its model of censorship and surveillance in order to control information both inside and outside the country.

According to the director for Internet Freedom at Freedom House, Sanja Kelly, "China is exporting its model of digital authoritarianism throughout the

world, constituting a significant threat to the future of the free and open Internet," Since 2017, the representative of 36 countries have visited China for training programs on censorship and surveillance.

In the same time period, 18 countries have acquired monitoring technology or facial recognition systems from Chinese companies. The high authorities of Egypt and Iran also rewrote restrictive media laws in order to apply to the users of social media. Their government jailed the citizens under measures designed to fight false news. Furthermore, they also blocked foreign social media and communication services.

In order to defend people's freedom of expression on all sorts of topics over the internet, it is necessary that anti-democratic forces should be discouraged to take hold of the internet by all means.

**China is at the fore front among the countries that have taken up extensive measures to curtail digital freedom**

In the era where the world has become a global village, access to accurate information without being manipulated is a fundamental right of every citizen. And all social channels and online media have responsibly to make sure that they serve the public in the right way. If the media is hijacked by authorities, people will lose their voices on matters which shape their lives.

Recently, in the name of peace and harmony, India blocked the internet services in the Kashmir. The Indian government took this step just to suppress the potential protests. But that affected the entire economy as internet blockage restricted all the online activities and no one was able to



do any kind of online trading.

Sri Lanka has also used “fake news” as an excuse to cut off the internet in its boundaries. For a modern and free society, internet freedom is very important.

**In the era where the world has become a global village, access to accurate information without being manipulated is a fundamental right of every citizen**

We all have the right to information, to freedom of opinion and expression, without internet freedom, it is not possible. It plays an important role in learning and has changed the ways of study at schools.

Free internet facilitates students in their research works. The internet has become a new teacher with advance knowledge. Students learn a lot from Google and other search engines without the help of a human teacher. Those students

who are unable to attend the schools because of any physical barrier, the internet is the only significant tool that provides knowledge about everything.

**For robust growth in the economy, we can't ignore the importance of the internet**

Teachers can also use the internet as a modern tool for educating their students and adopt more modern ways to build the interest of the students.

**The Indian government blocked the internet services in Kashmir just to suppress the potential protests**

The internet is working on socializing and organizing the flow of people and ideas.

**The privacy should not be violated in the name of security, therefore; proper laws should be formulated without intervening in the privacy rights of the people**

No doubt that the disinformation is a crucial issue and a real problem, but cutting off access to the internet is not the right solution.

The privacy should not be violated in the name of security, therefore; proper laws should be formulated without intervening in the privacy rights of the people.





## FIND THE RIGHT LAPTOP?



There are so many choices of laptop computers these days, it's hard to figure out what ones are better. Follow these tips to find the right laptop for you.

**Screen size and weight:** Laptop screens typically range in size from 9- to 17-inch (about 23- to 43-centimeter) displays. The bigger the display, the heavier your laptop will be. Balance the amount of portability you need against performance to find the right size for you. Larger screens will be harder to travel with and have shorter battery life, but will support better graphics and more power. Smaller screens will be just the opposite.



**CPU:** The CPU is your computer's brain. The two main CPU providers are Intel and AMD. Intel corners the market in terms of advanced technology, but AMD offers competitive models at lower prices. Dual-core CPUs are more powerful with better support for gaming and graphics, while single-core CPUs are much more cost-effective for people who simply use their computer for basic office and web-browsing functions.



**RAM:** Business travelers and home users should look for between 2 GB and 4 GB of RAM. Gamers, graphic artists and other people who work with high-definition videos will benefit from 4 GB to 8 GB of RAM. The average student looking for a cost-effective machine for doing homework, e-mailing and web browsing can settle for 1 GB of RAM.

**Use an online laptop finder:** Many shopping sites have tools and search engines to help you choose the right laptop. Microsoft has an innovative program called PC Scout, which walks beginners through the process of choosing a computer, and then presents some choices at the end. Online shopping sites often have advanced search features to help you search for laptops with the exact specifications you want.

FREELANCING:  
THE NEW LIFESTYLE FOR PAKISTANIS





**T**he Internet is a blessing in disguise! This amended quote will not be wrong if we look around the benefits of the internet throughout the world, mainly in the field of freelancing. Freelancing helps youngsters by enabling them to earn extra cash through working online from the comforts of their homes.

**The job market is very saturated in Pakistan, and not all youngsters are able to get jobs in big firms**

Working whenever you want is the best freedom one can have. It's only possible through freelancing. The job market is very saturated in Pakistan, and not all youngsters are able to get jobs in big firms like KPMG, Deloitte, Jazz, Unilever, and Nestle, etc. So what's next? It's the unconventional way of earning through "Freelancing."

### **Who is Online Freelancer?**

A freelancer is a person who is self-employed and is not bound to any particular organization. Sometimes freelancers are committed to an organization to work remotely for them and provide some service. But most freelancers work independently and get work from different websites or platforms to sell their services.

**In freelancing, you pick up as many projects as you want and bid for them. You work till a set deadline, and then get paid**

Freelancing is selling your 'Digital Skills' online. Whether you are a Graphic Designer, Content Creator, Proof Reader, Web Developer, Ghost Writer, Photo and Video Editor, Illustrator, digital marketing, etc. all come under the banner of freelancing. In freelancing, you

pick up projects as many as you feel like you can fulfill and bid for them. You work till a set deadline, and you get paid.

### **The Emergence of the Freelance Industry in Pakistan**

Freelancing fever took some time to enter the Pakistani market; however, it came with a bang that was so loud that it could be heard everywhere. And let's not forget that we are still witnessing its value.

In 2013, Pakistan was named as one of the world's top outsourcing destination, whereas, the United States remained on the 1st position and India on the 2nd. In 2015, Upwork released a report stating Pakistan ranks as the 5th top country in the world with the most freelancing earnings.

**I believe that by 2020, one out of every three workers in the country will be earning through freelancing**

If Pakistanis are provided with the proper benefits, I believe that by 2020, one out of every three workers in the country will be earning through freelancing. The statistics announced by different freelancing forums, clearly reveals how millions of people are earning globally via freelancing and are incredibly successful.

So who are benefitted by Freelancing in Pakistan? Mostly the youngsters who want to have some money while studying have taken advantage of the ever-rising freelance trend in Pakistan. The jobless people are no more worried as they can earn while sitting at home till they get the next job. However, the group that has benefitted the most is the women of Pakistan, who previously had

no platform to showcase their talent. Now women who cannot go out and earn can support their families by getting a handsome amount through freelancing. This opportunity is very appealing for specially-abled people who can make money while staying at home.

**The group that has benefitted the most is the women of Pakistan, who previously had no platform to showcase their talent**

When something in the industry becomes a trend, the technology also rises to flourish that trend in a particular way. So to support freelancers, many platforms were launched, which helped not only freelancers but also the enterprises that wanted to get their tasks done without hiring a permanent resource. These platforms gather freelancers and companies who want to outsource at one place and provide security to both to build trust among all.

**All freelancing websites have a large database with contractors throughout the world, hiring Pakistanis based on their talents**



There are many or websites, but the most famous ones are Freelancer.com, Fiver, Guru, People per Hour and Upwork. All these websites have a large database with contractors throughout the world, hiring Pakistanis based on their talents.

## Steps to Promote Freelancing In Pakistan

As mentioned before, India, Bangladesh and the US acquired first, second and third positions respectively. Now we should consider facts to help Pakistan become first in freelancing. For this, we need to introduce some reforms.

**There is no payment mechanism like PayPal in Pakistan to receive payments from international clients**

For instance, schools should prepare students for freelancing instead of regular 9-5 jobs. A special academic course should be designed for students to guide them on how to earn their living via freelancing.

Keeping in view the fact that institutes are producing more graduates as compared to the jobs created every year. The government is working on several initiatives such as Digiskills, e-rozgaar, and several other platforms. These platforms train youth and provide them with the skills that are necessary for freelancing.

If the Government of Pakistan will keep on assisting youth in this way, in no time, Pakistan will be able to acquire the first position in freelancing globally.

**The government is working on several initiatives such as Digiskills, e-rozgaar, and several other platforms**

## Obstacles Faced by Pakistani freelancers

Though freelancing is growing tremendously, however, we cannot

overlook the challenges faced by Pakistani freelancers. There are many internal and external problems faced by freelancers in Pakistan.

There is no payment mechanism like PayPal in Pakistan to receive payments from international clients. Also, the difference in time zone puts Pakistani freelancers behind from others.

There is no local platform where freelancers could sell their services. However, there are a number of Facebook pages for freelancers but since there is no proper binding on these pages, Freelancers often get cheated upon and are not paid for their work.



**There are a number of Facebook pages for freelancers but since there is no proper system, Freelancers often get cheated upon and are not paid for their work**

## Key to Success in Freelancing Platforms

Starting freelancing is an easy job, but what really matters is the consistency and accomplishment of your goals.

For freelancing, one needs to be consistent. You have to wait for various months to get your first project. So if you lose hope, you will lose everything. Be consistent and patient and witness the wonderful results.

**Becoming a full-time freelancer is a great option but if you have the opportunity to seek out and get freelance work in your anticipated career, then, by all means, take it**

Furthermore, you need to have excellent communication skills if you want to get hired. Try to make a long-term relationship with your clients by providing quality services.

It will help you in getting more projects in the future. Another most important determinant is your profile at freelancing platforms. You need to have professionally designed images with a catchy write-ups and portfolio to attract the maximum client.

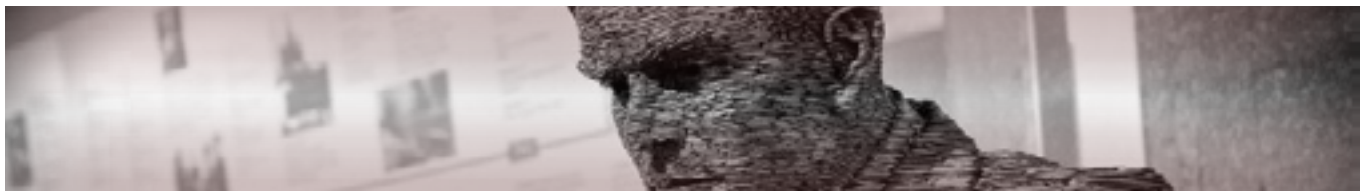
Becoming a full-time freelancer is a great option but if you have the opportunity to seek out and get freelance work in your anticipated career, then, by all means, take it. You will gain valuable experience, develop your skills and even make connections that will help you in your future career pursuit.

**A**lan Turing is the famed code-breaking war hero, now considered the father of computer science and artificial intelligence.

Alan Turing was a brilliant British mathematician who took a leading role in breaking Nazi ciphers during WWII. In his seminal 1936 paper, he proved that there cannot exist any universal algorithmic method of determining truth in mathematics, and that mathematics will always contain undecidable propositions. His work is widely acknowledged as foundational research of computer science and artificial intelligence.

During World War II, Turing was a leading participant in wartime code-breaking particularly that of German ciphers. He worked at Bletchley Park, the GCCS wartime station, where he made five major advances in the field of cryptanalysis, including specifying the bombe, an electromechanical device used to help decipher German Enigma encrypted signals.

Turing's contributions to the code-breaking process didn't stop there: He also wrote two papers about mathematical approaches to code-breaking, which became such important assets to the Code and Cypher School (later known as the Government Communications Headquarters) that the GCHQ waited until April 2012 to release them to the National Archives of the United Kingdom.



Turing moved to London in the mid-1940s, and began working for the National Physical Laboratory. Among his most notable contributions while working at the facility, Turing led the design work for the Automatic Computing Engine and ultimately created a groundbreaking blueprint for store-program computers. Though a complete version of the ACE was never built, its concept has been used as a model by tech corporations worldwide for several years, influencing the design of the English Electric DEUCE and the American Bendix G-15—credited by many in the tech industry as the world's first personal computer—among other computer models.

Turing went on to hold high-ranking positions in the mathematics department and later the computing laboratory at the University of Manchester in the late 1940s. He first addressed the issue of artificial intelligence in his 1950 paper, "Computing machinery and intelligence," and proposed an experiment known as the "Turing Test"—an effort to create an intelligence design standard for the tech industry. Over the past several decades, the test has significantly influenced debates over artificial intelligence.

# Alan Turing



Creator  
of  
modern  
computing

# Tecno Camon 12 Air: It's All about Display!

## Design and Display

The Tecno Camon 12 Air offers a plastic glossy finish at the back panel and it is available in Baby Blue and Stellar Purple. The device is quite lightweight and it is quite comfortable to hold in hand. The front panel now comes with a dot notch design, which is not as big as we have seen in other smartphones, which is a good thing. That said, the Camon 12 Air is surely one of the best-designed smartphones from Tecno.

Coming to the display, the smartphone is loaded with a 6.55-inch HD+ in-dot display with a screen resolution of 1520 x 720 pixels and a 20:9 aspect ratio. The display looks decent and it comes with a 90.3 per cent screen-to-body ratio, which provides an immersive viewing experience. It comes with good viewing angles and it is also bright with 500nits brightness.

## Hardware and Software

Tecno Camon 12 Air is powered by an octa-core MediaTek Helio P22 chipset. It is backed by a 4GB of RAM and 64GB of internal storage with an option to expand the storage up to 256GB via microSD card slot.

On the software front, it runs on HiOS 5.5, based on Android 9.0 Pie. The user interface offers a host of interesting features like a smart toggle that shows the shortcuts of the applications. Furthermore, it also comes with an app drawer support.

## Camera

On the camera front, the Tecno Camon 12 Air features a triple-camera setup, which comes with a combination of 16-megapixel primary lens with f/1.8 aperture, a 5-megapixel 120-degree wide-angle lens, which also takes 2.5cm close-up shots and a 2-megapixel depth sensor along with quad-LED flash.

For the front, it is loaded with an 8-megapixel in-dot selfie with f/2.0 aperture and an 81-degree wide-angle lens.



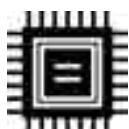
The camera performance seems to be decent in broad daylight conditions with images coming out to be good.

## Battery & Connectivity

Tecno Camon 12 Air is backed with a 4000mAh battery. The battery should ideally last one full day of normal usage. On the connectivity front, it supports dual 4G LTE, WiFi 802.11 b/g/n, Bluetooth 5.0, GPS, GLONASS, dual-SIM, micro USB port and 3.5mm audio jack.



# Tecno Camon 12 Air



64GB Built-in, 4GB  
RAM  
Octa-core



6.55 inch



Non-Removable Li-ion  
4000 mAh



16MP+5MP+2MP

PKR.19,999/-

## Final Verdict

Tecno Camon 12 Air is one of the best-designed smartphones from the brand. The dot-notch display sure looks promising and so is the camera performance.

***“We remove asset-heavy burdens from MNOs allowing them to focus on their core services”***

Arif Hussain, Country Managing Director, edotco



**edotco Group** is the first and leading regional integrated telecommunications infrastructure services company in Asia. It specializes in end-to-end solutions in the tower services sector including co-locations, build-to-suit, energy, transmission and operations and maintenance (O&M).

Their regional portfolio includes over 29,500 towers and is supported by state-of-the-art real-time monitoring service, echo, which helps to improve field operations whilst maximizing operational efficiencies.

With a portfolio of over 1300 towers and managed sites in Pakistan, edotco has developed built-to-suit and co-location offerings to enable telecommunications providers to efficiently meet their growing infrastructure requirements. We had a chance to meet Arif Hussain, Country Managing Director, Edotco for an exclusive interview, here is what he said.

## 1. How has the telecom sector changed over time?

From 2004 to now in 2019, I think there has been a positive transformation in the telecom sector. 15 years ago there were hardly 8 million cellular subscribers & today we have close to 160 Million subscribers.

**The competition is getting intense for every telco today because there is so much to offer but one has to keep in mind that innovation is the key**

There are 69 million 3G/4G subscribers and the numbers are constantly growing. This is a

very healthy sign for the telecom industry because the need is clearly increasing. The telecom sector has become more important than ever because there is a huge demand for data.

Online banking, E-commerce, the emergence of online service apps, E-learning, all require internet facility. In the future, the scope is expected to grow further. This also means that the competition is getting intense for every telco today because there is so much to offer but one has to keep in mind that innovation is the key.

## 2. What is the concept of tower sharing and why is it important?

Towercos bring about efficiencies such as reduce the cost of network operations and help telcos achieve market coverage effectively and fast. This can be attained through the sharing of infrastructure and also via the optimization of operations and maintenance processes.

## 3. What kind of services does Edotco provide to facilitate telecom?

We are primarily infrastructure providers to the telecoms; Edotco Group is the first and leading regional integrated telecommunications infrastructure services company in Asia.

We specialize in end-to-end solutions including co-locations, build-to-suit, energy, transmission and operations and maintenance (O&M). This allows Telecom operators to improve field operations whilst maximizing operational efficiencies.

Whether it's site provision, construction of towers or energy

supply to the site, we take complete responsibility from the start to finish.

**Whether it's site provision, construction of towers or energy supply to the site, we take complete responsibility from the start to finish**

In addition, edotco is also providing a suite of other services designed to enhance coverage within a building; edotco's customized Inbuilding Solutions and smart cell solutions offer customers a high level of network performance.

Smart small cell solutions can be deployed in the form of smart street furniture, optimizing public infrastructure to provide connectivity and other amenities to people such as free WIFI, digital signs, smart benches or even fully-integrated smart bus stops; enabling it to blend seamlessly into any urban environment. It can offer both high indoor capacity as well as outdoor coverage.

## 4. Why do you think tower companies are important?

Evolution of 3G & 4G, has changed the entire landscape for operators and consumers. With the provision of data services, things are moving at lightning speed.

**We remove asset-heavy burdens from MNOs allowing them to focus on their core services**

To support 5G services, telecom operators would need to invest more in towers, if today there are approximately 35,000 towers in Pakistan that number would have to double to cater to future needs. That's where Edotco

plays a pivotal role as we provide sustainable and cost-effective solutions to telecoms.

We remove asset-heavy burdens from MNOs allowing them to focus on their core services. This also enables telecom operators of saving their operating costs from anywhere between 35 to 55 percent by outsourcing the passive part of the network.

### 5. How many operational sites does Edotco have currently?

Edotco Pakistan's current tower portfolio consists of over 1300 towers, out of which, 97% are in urban areas, while the remaining is based in Pakistan's rural areas. We do have plans to expand it

further and ensure coverage in remote areas as well to facilitate our clients.

**Edotco Pakistan's current tower portfolio consists of over 1300 towers, out of which, 97% are in urban areas, while the remaining is based rural areas**

### 6. There is a lot of innovation coming in tower infrastructure and design as well? Is your company also planning to offer something new in this regard?

Innovation is our main driving force; we are strong proponents

of doing something new and something out of the box!

Edotco is already leading in terms of innovation in this industry, some of our unique initiatives include: Bamboo Towers, LCS, Rooftop towers and Carbon Fiber towers, all of which have been pioneered by Edotco. Apart from that, our innovative design set comprises of Aesthetic Monopoles, Lamp Pole Towers, In-building Solutions and Street Furniture.

**Edotco is already leading in terms of innovation in this industry, some of our unique initiatives include: Bamboo Towers, LCS, Rooftop towers and Carbon Fiber towers**





## 7. What technological changes are required to meet the growing data demands of the future, especially after the introduction of 5G?

With the advent of 5G, data requirements will increase exponentially, there will be more machine to machine connections. While you may think that telecom operators have enough towers and there's no need to build more towers — particularly in urban areas where there's already blanket coverage — in actuality, mainly due to growing data needs, the coverage of towers will keep shrinking. And hence telcos' need for towers will keep growing.

**Mainly due to growing data needs, the coverage of towers will keep shrinking. And hence telcos' need for towers will keep growing**

This is where our role becomes even more significant as the way forward is not to have everybody build their own separate towers, but instead, have a tower company to manage all sorts of tower centric services to not only reduce the cost but also the overhead.

## 8. Apart from the business end, Edotco has been a strong proponent of environment-friendly initiatives. What are some of the initiatives being run by Edotco which benefit the environment?

Edotco has deployed numerous sustainable design innovations and embarked on extensive use of renewable energy across its footprint. In an effort to reduce our overall carbon emissions, we also use alternative materials to build our towers.

As such, we have explored the



use of lighter carbon fibre to build the structures, resulting in a 20% reduction in carbon emission per site along with exploring the option of bamboo towers.

In an extension of that, the company is also shifting the way in how its sites are powered, with the usage of renewable energy systems. In Pakistan, in replacement of electricity from the grid and diesel generators, the sites are electrified with power from the grid, eliminating the usage of diesel generators hence resulting in a 41% reduction in carbon emission per site.

**We have explored the use of lighter carbon fibre to build the structures, resulting in a 20% reduction in carbon emission per site along with exploring the option of bamboo towers**

## 9. What are some of the challenges Edotco has to face?

Every business has to face some sort of challenge; our set of challenges might be a little different. There are some operational challenges such as the acquisition of a site, getting the approvals from government authorities, ensuring timely

delivery.

We believe to create an agile and future-ready telecom infrastructure industry it is important for us to ensure enhanced collaboration with the local ecosystem to bring in the transformation.

## 10. How do you think can a stronger communication landscape transform the future of Pakistan?

Infrastructure providers such as us and other stakeholders need to come together and play our respective roles to help realize the capacity required (for 5G) while at the same time continuously innovating to keep communities and people connected.

**Effective communication landscape can create numerous opportunities as it will lead to the strengthening of E-commerce in Pakistan**

Effective communication landscape can create numerous opportunities as it will lead to the strengthening of E-commerce in Pakistan, open online business opportunities, facilitate growth and collaboration between industries, enabling the country to benefit economically and technologically.



# *VIVO S1: Elegant and Stylish Smartphone*

## **Design**

The Vivo S1 sports a 6.38-inch display with a tiny dewdrop-style notch at the top. Vivo has opted for an AMOLED panel, and the Vivo S1 sports an in-display fingerprint scanner. The display has thin bezels on the sides but the bottom chin is comparatively thicker.

Vivo has opted for a plastic frame that is rounded which makes the smartphone comfortable to hold in the hand. Vivo has positioned the power button to the right along with the volume buttons, and they are all easy to reach. The Vivo S1 also has a dedicated Google Assistant button just like the one on the Vivo Z1 Pro.

## **Display**

The Vivo S1 comes with a 6.38-inch super AMOLED display and offers 19:5:9 aspect ratio, 90 per cent screen-to-body-ratio and FHD+ screen resolution.

## **Hardware**

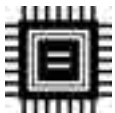
The Vivo S1 is powered by the new MediaTek Helio P65 SoC. The Helio P65 is a mid-range processor based on a 12nm process. It has a pair of ARM Cortex-A75 cores clocked at 2GHz, and six Cortex-A55 cores clocked at 1.7GHz. For graphics, it has a Mali-G52 integrated GPU. The Phone comes with 4GB of RAM and 128GB of storage and packed with a 4500mAh battery and you get an 18W fast charger in the box.

## **Camera**

Vivo has opted for a triple camera setup on the back of the Vivo S1. This consists of a 16-megapixel primary camera with an f/1.78 aperture, an 8-megapixel ultra-wide-angle camera with an f/2.2 aperture, and a 2-megapixel depth sensor with an f/2.4 aperture. At the front, this phone has a 32-megapixel selfie shooter with an f/2.0 aperture.

In good light, the Vivo S1 clicks decent pictures but in low-light, the Vivo S1 clicks pictures that often miss out on details.





128GB Built-in,  
4GB RAM  
Octa-core



Non-Removable Li-Po  
4000 mAh



6.38 inch



16MP+8MP+2MP

### Pros

- Stunning design
- Good Battery
- AMOLED Display
- Powerful performance

PKR.49,999/-

### Cons

- Cluttered Software
- Camera Performance no upto the mark

## Final Verdict

There's a lot to like about the Vivo S1 although camera could have been better.



# Vivo V17 Pro Launches in Pakistan-First 32MP Dual Pop-Up Camera Device

Vivo has unveiled the new V17 Pro smartphone in Lahore where Vivo's first Brand Ambassador in Pakistan Fahad Mustafa along with other celebrities, fashion icons, tech KOLs and Vivo's business partners attended the event.



**V17 Pro**  
— Clear As Real —  
6 AI Cameras, Perfect Shot



The V17 Pro sports the industry's first 32MP Dual Pop-up Selfie Camera, a powerful upgrade to Vivo's iconic Pop-up Camera. It houses cutting-edge features such as the FHD + Super AMOLED Ultra FullView™ Display, professional-grade 48MP AI Quad Camera, plus stunning makeover features created to compliment the lifestyle of today's young and stylish consumers.

"The creation of V17 Pro once again showcases our strong consumer-centric innovation approach. The new V-series member brings our world-renowned Pop-Up Camera to a whole new level, by incorporating not one but two front cameras," said Zohair Chohan, Brand Manager of Vivo in Pakistan. "V17 Pro is a masterpiece that we are extremely proud of, as it reinforces our position as a pioneer in bringing best-in-class mobile experiences to the global stage."



Vivo V17 Pro sales began on 12th October at the price of Rs. 66,999 with one-year official warranty in Pakistan. The phone is duly approved by PTA and Zong network users will be able to get free mobile data with it. V17 pro is available at all major mobile markets across Pakistan and customers can also purchase it from Vivo's official store at Daraz.



# TECNO Joins hands with Airlink to expand its Distribution Network in Pakistan

Leading Smartphone giant, Tecno Mobile has appointed Airlink as its official distribution partner in Pakistan in an agreement signing ceremony held at the Avari Hotel, Lahore. With this alliance, TECNO is aiming to expand its reach to users in every city of Pakistan.



TECNO mobile Airlink Mr. Creek Ma & Mr. Muzaffar Hayat Piracha Shaking Hands on Signing the Contract



TECNO mobile Airlink Mr. Creek Ma & Mr. Muzaffar Hayat Piracha Signing the Contract

TECNO chose AirLink based on their proven performance in the mobile distribution. AirLink Distributors have been consistently providing high service standards in the distribution network sector for decades. With more than 45 years of industry experience, the company has managed to spread its network of outlets all across Pakistan at rapid pace. The AirLink will import the smartphone Spark 4, upgraded version of Spark Go in Pakistan as its first unit. Besides with its previous distributors, United and Yellostone, now AirLink will also be an official distributor of TECNO smartphones all across Pakistan. Therefore, collaborating with the top distributor will lay a foundation for a very bright future ahead.

General Manager of TECNO Mobile Pakistan, Mr. Creek Ma, gave a key message on this agreement signing ceremony:

“TECNO has already established its presence in Pakistan but with this new partnership, TECNO will achieve new milestones, including product availability all across Pakistan. We aim to enhance the buying experience of our customers by mitigating the chances of disappointment faced by our customers when they have difficulty in finding our phones offline.”

The CEO of AirLink, Mr. Muzaffar Piracha, gave the following message:

“We are pleased to be a part of this partnership as we believe that this will enable us to offer more to our valuable customers. We look forward to continue improving our services to fulfill the demand of customers across the country.”



TECNO mobile Airlink Yellostone Team Together



TECNO mobile Airlink Mr. Muzaffar Piracha Sharing his view on this Partnering ceremony

The appointment of AirLink as a distributor for TECNO smartphones came at a very important time as TECNO is planning to aggressively expand their reach to all corners of the country. Through this new appointment of AirLink, it is inevitable that the availability of TECNO phones in the market all across Pakistan will be ensured.

# HOW THE INTERNET CAN KICKSTART A NEW ERA OF PROGRESS IN PAKISTAN



**T**he world's revolution revolves around the word 'INTERNET'. without which it was impossible to dream the world as the Global Village it today has evolved into. However, there is far more potential yet to be discovered, cherished and benefited from.

The internet has the power to construct generations and tame people in the desired direction. Let's have a look at the possibilities of the internet that can

revolutionize Pakistan and open horizons of economic growth.

## **The internet has the power to construct generations and tame people in the desired direction**

Pakistan is a country facing a number of problems. With unstable government policies, high fluctuating market trends, security concerns, energy crisis, unpredictable market and lack of

facilities there is only little room left for entrepreneurs to successfully establish and maintain a business setup.

In such circumstances, job opportunities have also been squeezed. All of these and numerous other issues are waiting for a solution; which the internet is eminently capable of.

Entertainment is the biggest feature that the internet has bought. We all are familiar with

this benefit of the internet but let's view it from a different perspective today.

What impact does the internet have to create on the different generations of our society? For toddlers, it is a source to learn additional languages other than their mother tongue with all those fancy cartoons most of which may help mold a child's personality in a positive and progressive manner.

Apart from that, it provides temporary relief to mothers by distracting the children for a while. For the youngsters, the Internet is a source to relieve their minds by engaging them with what they cherish, to get connected, and learn what they are passionate about but couldn't pursue as a career.

Moreover, it is a resource pack on a click, no need to purchase and burden yourselves with those extra books; all that you need is in there. For the elderly, the internet is more of a blessing to escape time and space, fill in all their idle time.

**Unstable Government policies, high fluctuating market trends, security concerns, energy crisis, unpredictable market and lack of facilities leave little room for entrepreneurs to successfully establish and maintain a business setup**

It is a world of entertainment and exposure for them. Moreover, a source to see their loved ones via screen and stay connected. Women tend to join food groups, share and try on recipes, and beauty hacks.

Hasn't the internet just made the old age a lot more fun? The internet is not just about social media and entertainment

anymore; mobile applications have witnessed robust growth. You can find an application for everything, be it education, agriculture, banking, shopping, health, etc. Virtual education is yet another blessing in this speedy era to save traveling time, energy and cost. Your bank has evolved into an App on your mobile phone, and transactions are as simple as a click.

**The internet is not just about social media and entertainment anymore; utility and m-services applications have witnessed robust growth**

The internet is the portal through which Pakistanis may attract foreign currency into the country. Freelancing, for instance, can play a vital role in doing so.

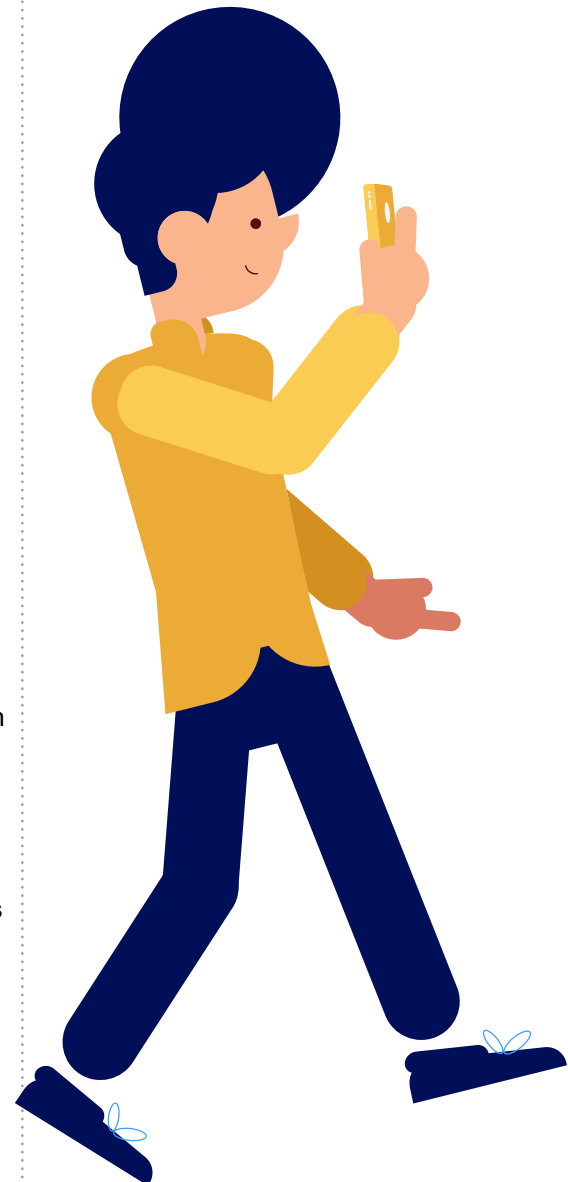
Freelancing is the selling of digital skills online. Foreign employers prefer labor from underdeveloped countries due to the high-quality work they produce and the low wages they demand. All we need is to educate, aware and prepare individuals about all that can be done through the internet which means it is not only a platform to earn but to learn as well.

Moreover, as the market competition is very high in Pakistan and the profit generated is low; the internet can help build business ties with other countries on an individual level.

In addition to the physical business setup, the internet has provided corporations with a virtual setup which proves to be an additional site to gather an audience and to increase sales. This is not only valuable as it also proves to be more profitable as your items are only a click away from consumers and you becoming an owner of

an international firm is made a lot easier. You may set up a virtual store only and sell your goods to the world through the internet, like Amazon.

**We need to educate, prepare individuals for all that can be done through the internet which means it is not only a platform to earn but to learn as well**





Apart from selling your products and services online, you can buy from there too. Either it's your favorite dress, a phone or even doing grocery, the internet has it all covered.

## **Blockchain technology doesn't merely enable business transactions but can also bring transparency**

The internet has dramatically brought a change in our lifestyle by bringing everything to one place. Apart from all the comforts, the internet has made accessible, there are several necessities that the internet provides us as well. For instance, paying bills and your children's school fee on a click is not less of a blessing. Even picking up groceries has now become a simple affair with the internet.

## **Apart from offering work-from-home and online business setups, the internet proves to be a weapon for women against all insecurities, violence and unjust they have been facing**

The internet is playing a vital role in empowering women in Pakistan. Apart from offering work-from-home and online business setups, the internet proves to be a weapon for women against all odds, insecurities, domestic violence and unjust they have been facing. In this way, men may be tamed to remain in their limits, and women will gain the confidence to move in the society which will ultimately result in constructing a safer and equal society for women to live and grow in.

Blockchain technology doesn't merely enable business transactions but can also bring

transparency.

In this way, every individual may keep a check on their government and every rupee spent can be under-consideration.

Political transparency is the best thing that the internet can bring to Pakistan, as the system is corrupt, from elections to any work related to government offices. Once everything is on the internet, it will bring transparency and efficiency in all government dealings.

## **The day Pakistan fully adapts to the Internet, will be the day Pakistan will stand as a progressive nation**

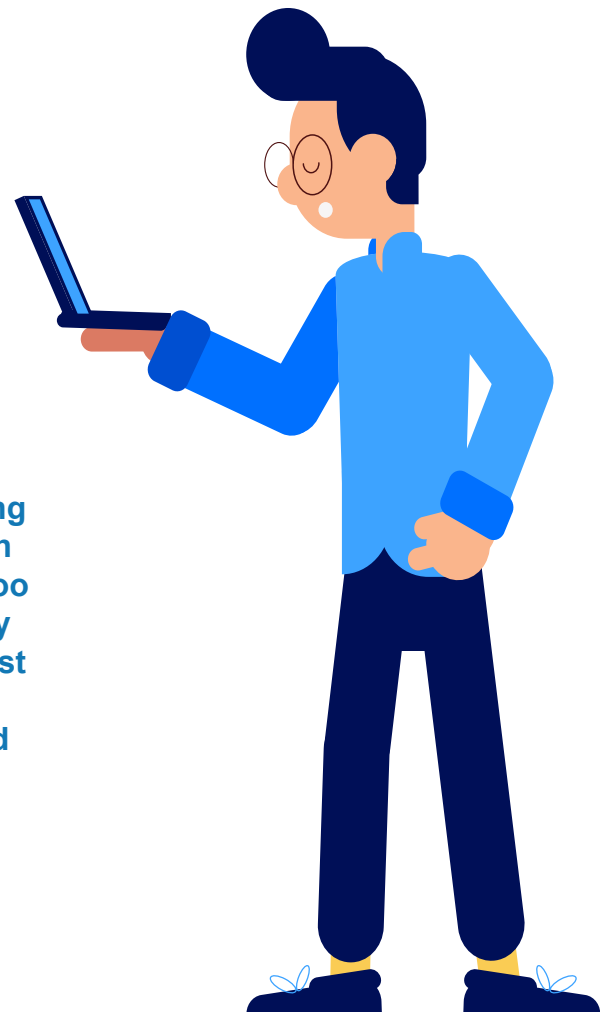
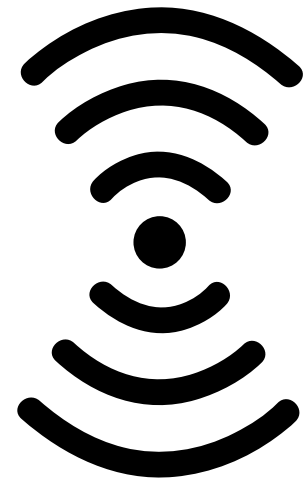
The internet may also prove to be a uniting force or a tool to shape the minds of the individuals. It may be used to spread awareness, patriotism, word of law and educating people regarding certain subjects which may be too complex for the majority of the population to digest hence, providing an opportunity to learn and grow together. The internet may help bridge the differences between provinces and bring an end to the social isolation which prevails among them.

## **Internet can be used to spread patriotism and word of law and educating people regarding certain subjects which may be too complex for the majority of the population to digest hence, providing an opportunity to learn and grow together**

It will encourage intra-country trade, help cover the difference between developed and under-developed areas of Pakistan and foster a more peaceful

environment.

The internet brings an opportunity at every point for Pakistan to grow, learn and experience new horizons. And the day Pakistan gets fully adapted to its use, will be the day Pakistan; will stand as a progressive nation on the road of development and prosperity.





## Zoom into Imagination as OPPO launches its OPPO Reno 2 Series

OPPO Pakistan has launched the new Reno2 Series at Faletti's Hotel in Lahore. The Reno2 and Reno2 F models are the latest iterations of OPPO's popular Reno series, coming packed with photography-enhancing features. The quad-camera setup includes 5x Hybrid Zoom allowing users to get far closer to a subject, ultra-clear night shots even under the nearly-no-light condition on Ultra Dark Mode and super-stable video shooting on the go thanks to Ultra Steady Video.



**“Inheriting the already rich creative spirit of the Reno Series, this latest iteration presents our users with even more creative possibilities, empowering them to discover new perspectives,”** said George Long, CEO OPPO Pakistan. **“Its advanced camera technology performs superbly in a range of environments and scenarios, from vast landscapes to confined alleyways, or sun-kissed beaches to dim, moonless nights.”**

### Sales Information

- The OPPO Reno2 in Luminous Black and Ocean Blue with 8GB RAM and 256GB ROM will be available on 26th October starting at 79,999
- The OPPO Reno2 F in Lake Green and Sky White with 8GB RAM and 128GB ROM will be initially available on 26th October starting at Rs. 59,999

# Realme 5 Pro: An Extraordinary Camera Phone

## Design

For a low-cost phone, the Realme 5 Pro looks and feels pretty good. It isn't too big or bulky, and the materials and finish feels premium.

Despite its glossy look, the Realme 5 Pro is very easy to grip. The rounded sides and curved back panel make it fit comfortably in a palm, masking its 8.9mm thickness. It weighs 184g and is actually more compact than the Realme 5.

## Display

Spread across 6.3-inches, we get an IPS LCD panel with a resolution of 2340 x 1080. Eating into that screen, there's a small waterdrop notch housing the front camera. Realme states that this "minidrop" notch is smaller than the previous generation, and by the looks of it, it definitely seems small. As for protection, we get Gorilla Glass 3+. There's a simple plastic screen protector pre-applied with the phone which is always appreciated.

## Camera

Realme left no stone unturned in letting everyone know that the Realme 5 series will be the first to bring quad-cameras to this budget segment. The Realme 5 Pro has a 48MP f/1.7 primary camera, an 8MP ultra-wide lens, a 2MP macro lens and a 2MP "portrait" lens which is actually just a depth sensor.

Shots taken in the daytime with the primary camera were quite sharp, and the color balance was good. The Realme 5 Pro was quick to lock focus and we didn't have any trouble with usability. We liked its results in terms of fine detail in the foreground as well as clarity in distant objects.



The ultra-wide lens not only brought a much wider field-of-view, but managed to retain the color parity with the primary camera.

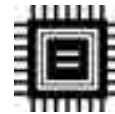
The 2MP portrait lens is practically just a depth sensor for better portrait mode images. It did its job for the most part, and helped get a clean background separation even in low light.

## Battery and Processor

The Realme 5 Pro comes with Qualcomm Snapdragon 712 SoC and houses a 4,035mAh battery which should provide a great battery life when combined with ColorOS's optimizations. Thankfully, VOOC 3.0 Flash Charge is also present. Realme 5 pro comes with an option of 6GB and 8 GB RAM with an internal storage of 64GB and 128GB respectively. This is sufficient for an everyday use, a dedicated memory card slot is also available that can provide up to 256GB of space.

## Operating System

The Pie Android (9.0) has been set up in this phone. In addition to this there is its own operating system; ColorOS 6 that gives a better system performance.



128GB Built-in,  
4GB RAM  
Octa-core



Non-Removable  
Li-Po 4035 mAh



6.3 inch



48MP+8MP+2MP+2MP

PKR.37,999/-

### Pros

- Snapdragon 712
- versatile quad-camera setup
- Big Battery

### Cons

- Plastic Build
- ColorOS can be overwhelming

### Verdict:

The Realme 5 Pro nails all the essentials of a budget phone.



# The Best **SOCIAL BUNDLES** offered by Mobile Operators

By Onsa Mustafa



**S**ocial media is computer-based technology that facilitates the sharing of ideas, thoughts, and information through the building of virtual networks and communities. By design, social media is internet-based and gives users quick electronic communication through different types of content.

Content includes personal information, documents, videos,

and photos. Social media originated as a way to interact with friends and family but was later adopted by businesses and influencers who wanted to take advantage of a popular communication method to reach out to more people.

The power of social media is its ability to connect and share information with anyone on Earth or with large number of people

simultaneously.

Many people define social media as apps on their smartphone or tablet, but the truth is, this communication tool started with computers. This misconception stems from the fact that most social media users now access these platforms via mobile apps. In Pakistan, the most widely used social media app is Facebook.

According to the GlobalStat Statcounter, 92.07% of people in Pakistan are using Facebook, and most of them are using it to promote their businesses.

Also, 1.46% of people are using YouTube and 1.34% of people are using Instagram in the country. Keeping in view the accelerating trend of social media usage in the country telecom operators started special social media packages.

**Social media originated as a way to interact with friends and family but was later adopted by businesses and influencers who wanted to take advantage of the popular new communication method to reach out to more people**

### Zong:

With more than 10,000 network sites, Zong is one of the leading telecom operators in the country. Zong provides a variety of packages for its 34.99 million 3G/4G subscribers.

There are also many internet packages that the company has introduced for its users. But keeping in mind the trend of Social media platforms, the company has introduced dedicated social media packages as well.

### Telenor:

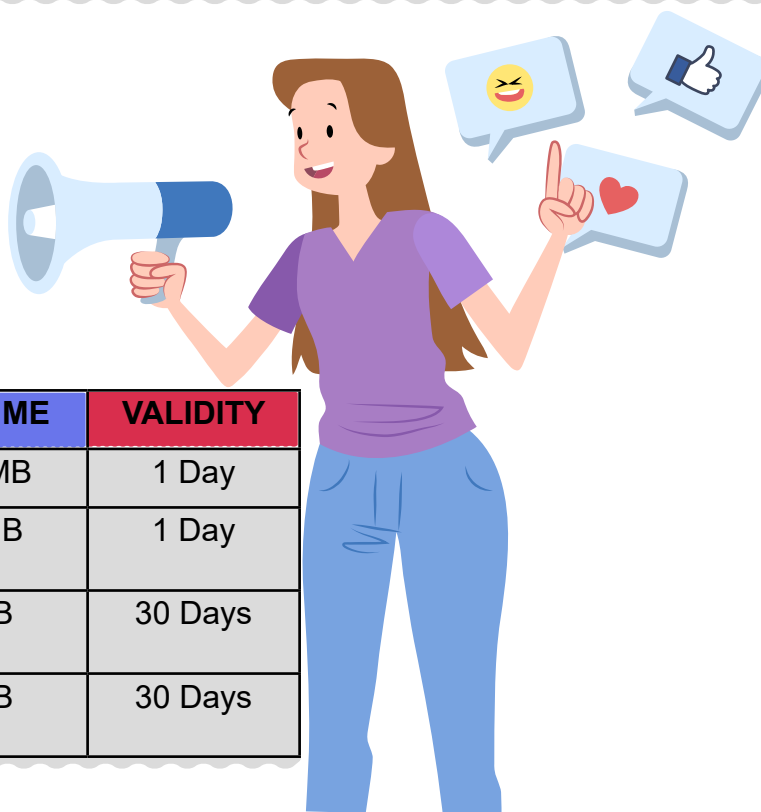
Telenor Pakistan has a total of 44.74 Million 3G/4G subscribers with more than 11000 network stations across the country.

**Telenor Pakistan has a total of 44.74 Million 3G/4G subscribers with more than 11000 network stations across the country**

Telenor also provides the dedicated social media packages to stay connected with the world on social media. Here are the details of the packages.

BUNDLE	PRICE	VOLUME	VALIDITY
4G 3-Days Bundle	Rs. 42+Tax	200MB + Free 200MB for Facebook	3 Days
Monthly Social	Rs. 50+Tax	100MB + Free 3000MB for Facebook & WhatsApp	30 Days

BUNDLE	PRICE	VOLUME	VALIDITY
Social Pack	Rs. 10+tax	100MB	1 Day
Facebook Daily	Rs. 5+tax	50MB	1 Day
Facebook Monthly	Rs. 70+tax	6GB	30 Days
WhatsApp Offer	Rs. 30+tax	4GB	30 Days



**Ufone:**

Ufone has 22.67 million 3G/4G subscribers with more than 9000 coverage units across the country. Ufone also offered two social packages to stay social all the time. Here are the details of the packages containing price, volume and validity information.



BUNDLE	PRICE	VOLUME	VALIDITY
Social Daily	5+Tax	100 MB	1 Day
Social Monthly	50+Tax	Free usage of Facebook, Twitter, and WhatsApp	30 Days

**Jazz:**

Jazz has 59.39 million 3G/4G subscribers and the most widely used network across the country. Unlike others, Jazz has introduced the variety of social packages. Here are the details of all packages.

Jazz also provides the highest number of MBs at lowest price in the dailysocial package category. If we compare the monthly social packages offered by each operator, Telenor and Ufone provide better packages.

BUNDLE	PRICE	VOLUME	VALIDITY
Daily Social	Rs. 7+Tax	500 MB for Facebook & WhatsApp	1 Day
Weekly social	Rs. 60+Tax	5GB For WhatsApp, IMO & Facebook	7 Days
Weekly Streamer	Rs. 95+Tax	1 GB	7 Days
Daily WhatsApp Offer	Rs. 2+Tax	200 MB for WhatsApp	1 Day
Weekly WhatsApp Offer	Rs. 20+Tax	25 MB +1500 SMS	7 Days
Monthly WhatsApp Offer	Rs. 70+Tax	5000 MB +12000SMS	30 Days

**Jazz has won the OOKLA speed test award three times consecutively and also has the maximum number of subscribers which clearly shows the trust level of the customers**

It's not only about the prices of the packages speed also matters. Jazz has won the OOKLA speed test award three times consecutively and also has the maximum number of subscribers which clearly shows the trust level of the customers.

**The users who were otherwise hesitant to use social media on their phones due to high internet rates have also availed these packages to stay online**

With customized social packages offered by operators, social media use has increased impressively in the country. The users who were otherwise hesitant to use social media on their phones due to high internet rates have also availed these packages to stay online. This has put a very positive impact on mobile broadband users in Pakistan and increased uptake in the country.

# Jazz and Afiniti to Enhance Customer Experience Using Artificial Intelligence

Jazz, Pakistan's leading digital communications company, and Afiniti, a multinational advanced analytics company, have partnered to implement Artificial Intelligence (AI) solutions in customer service contact centers across Pakistan, fostering significant gains in customer satisfaction and revenues.



As part of its long-term commitment to meet and exceed customer satisfaction, Jazz engaged Afiniti to use their AI powered contact center technology to optimize call outcomes at Jazz's customer service contact centers. By analyzing call histories and other CRM data, Afiniti's algorithm predicts patterns of interpersonal behavior and matches callers with Jazz's contact center agents best equipped to serve them.

"Industries globally are advancing rapidly thanks to AI and we wanted to use this technology for the benefit of our customers," said Aamir Ibrahim, CEO Jazz. "Afiniti's solution is intuitive, seamless and measurable, and a part of Jazz's broader customer obsession motto. It's one of many ways we're creating consistently positive experiences for our subscribers and driving revenue."

"Afiniti is the world's premier provider of applied artificial intelligence solutions, having delivered billions of dollars in measurable economic value to its clients around the world. We are proud to partner with Jazz to deliver similar value and enhanced customer experience to the largest mobile provider in Pakistan," said Zia Chishti, CEO Afiniti. Afiniti uses AI to identify subtle and valuable patterns within human interaction to pair customers and employees out of sequence on the basis of behavior. Pairing in this way transforms the quality of interpersonal interactions, driving measurable increases in enterprise profitability and customer success metrics.

Typically, customers contacting a business are routed to the first available contact center agent regardless of fit. With Afiniti, callers are routed to the agent most likely to deliver a positive experience, in turn improving the company's efficiency (average handle time, first call resolution), increasing revenue (sales conversion, up-sells and cross-sells, retention) and improving customer and agent satisfaction (NPS).





# OPPO RENO 2: ONE OF THE BEST-LOOKING PHONE

## Design

The new Reno 2 brings a similar design philosophy as the previous Reno, which is a good thing. It gets a stunning curved Gorilla Glass 5 rear panel, which is smooth and feels solid to the touch. The best thing about the back of the Reno 2 is that it is one seamless piece of glass without any camera bump.

The vertical quad camera system sits underneath the glass, offering a clean and visually attractive look. The curved edges on the back offer a nice grip. The phone feels quite premium to hold and the weight is on the heavier side.

## Display

The Reno 2 comes with a 6.55-inch Dynamic AMOLED display with Gorilla Glass 6 on top. The Reno 2 offers a FHD+ (2400x1080) resolution and a screen-to-body ratio of 93.1, which means what you get is practically all screen and no bezels except for a very slim chin that is almost non-existent.

## Camera

Reno 2 has a quad camera setup. Oppo Reno 2 has a 48MP quad camera system, only fancier. In addition to a 48-megapixel Sony IMX586 sensor that supports OIS and EIS, the Reno 2 also offers a 13-megapixel telephoto lens, an 8-megapixel wide-angle camera and a 2-megapixel monochrome lens.

The standout feature that Oppo is highlighting is the 20x digital zoom support, which is a unique offering in this segment. The Reno 2's telephoto lens can offer 5x hybrid zoom, which offers some really crisp and detailed zoomed shots with the help of EIS. The camera is able to retain some details and colours look good as well. Zooming all the way up to 20x leads to soft and noisy images, but there is some stability to be found, which allows you to capture blur-free photos.

The 48MP main camera can take stunning shots in daylight via its default 12MP pixel binning mode. Photos look sharp and colourful on the AMOLED display even



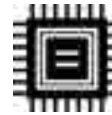
without Chroma Boost enabled. Oppo says the Reno 2 comes with an Ultra Dark Mode that's supposed to be an improvement over the previous version.

## Performance and Software

The Reno 2 is powered by a 2.2GHz Snapdragon 730G processor that is equipped with an Adreno 618 GPU. It is easily one of the smoothest mid-range processors out there right now. With the Snapdragon 730G chipset, the Reno 2 can breeze through pretty much any task you throw at it.

The chipset is also based on a 7nm process, which makes it more power efficient as well. With 8GB of RAM under the hood, the Reno 2 will let you switch between apps without any lag or slowdown.

Oppo Reno 2 ships with a new ColorOS 6.1 based on Android 9 Pie. The new custom UI version comes with fewer preloaded apps on the Reno 2, which is a pleasant surprise. Oppo Reno 2 offers a full-day battery life on its 4,000mAh battery.



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



Non-Removable  
4000 mAh



6.5 inch



48MP+13MP+8MP+2MP

### Pros

- Stunning Design
- Bright AMOLED Display
- Fast Performance

### Cons

- Price could have been better

**Verdict:**  
It is a fantastic phone that delivers a premium experience on all ends.

**PKR.79,999**

By Aiza Butt

# Incubation Centers: Platforms for Aspiring Startups to Make Their Dreams Happen



In today's competitive and modern world where new ideas are budding every now and then, entrepreneurship has become a highly sought-after career path for many. However, entrepreneurs are often unsure about the path they should take to give life to their idea.

They wish they had a support team to help them launch their business. For those entrepreneurs who need additional help, accessing a small business incubator program may be the right path.

Business incubators and accelerators are organizations that assist entrepreneurs in launching

their startup businesses until they are successful enough to branch out on their own.

**Incubators assist startups with office space, IT services, mentors, investors, and development resources; however, some incubators provide specialized assistance as well**

Many small business incubators assist startups with office space, IT services, mentors, investors, and development resources; however, some incubators provide

specialized assistance as well. We have listed the top five incubation centers of Pakistan that will support you in your entrepreneurial pursuits through a range of activities and services.

## 1. Microsoft Innovation Center

As evident from the background Microsoft has, it is primarily a technological incubation Centre. The Microsoft Centers are situated across the globe at more than 100 locations with success stories from different countries. What can be better than learning from Microsoft professionals? They provide various entrepreneurial

workshops to help creative minds sharpen their ideas and create a masterpiece. If you wish to progress in the field of technology, no platform can provide a better space than Microsoft.

**If you wish to progress in the field of technology, no platform can provide a better space than Microsoft**

## 2. PLAN9- PITB

Plan 9 PITB (Punjab Information Technology Board) is a Lahore based tech incubator. It started in August 2012, and since then it has been home to many successful startups like TiketKataao, Qayaam, HomeStove and many more.

**PLAN9 has been home to many successful startups like TiketKataao, Qayaam, HomeStove and many more**

They promote a free work environment and provide all the necessary equipment needed for a startup. In addition to that, they provide training and mentoring sessions as well.

## 3. LUMS Centre for Entrepreneurship

The LUMS Centre for Entrepreneurship was ranked #1 in Pakistan by GUST Accelerator Report 2015 for Asia and Oceanic Region.

**The LUMS Centre for Entrepreneurship was ranked #1 in Pakistan by GUST Accelerator Report 2015 for Asia and Oceanic Region**

It is based in Lahore and aims to provide investment plans for startups which show potential and they initially offer a vigorous

4-month training program to train new entrepreneurs for the business world.

## 4. Social Innovation Lab

The Social Innovation Lab's incubator situated in Lahore, Punjab, and 'The Hatchery' is Pakistan's only social enterprise incubator geared to the needs of passionate, social innovators, big on ideas but lacking in the means and experience necessary to achieve their vision.

**'The Hatchery' is Pakistan's only social enterprise incubator geared to the needs of passionate, social innovators, big on ideas but lacking in the means and experience necessary to achieve their vision**

They use an indigenized curriculum and 4-month mentorship program, which combines humanistic perspectives on poverty alleviation, rural development and inclusive marketing with the latest insights on sustainable business practices.

## 5. Innovation District 92

It is a Lahore based incubation center to fulfill your wish to be trained by the best in the industry.

**District 92 incubation center aims to include the practice of 'thinking' in education, of 'innovating' through ideas and knowing how to 'change' with the evolving trend**

This incubation center aims to include the practice of 'thinking' in education, of 'innovating' through ideas and knowing how to 'change' with the evolving trend. They claim to believe in 'Change Makers' emerging as a result of sustainability-driven by innovation and entrepreneurship.







## 1. Foster Learning Pakistan

Foster Learning Pakistan is a leadership skill-developing organization among youth, which helps Pakistani youth to secure a dream job or start a career as an entrepreneur. Their main motto is "YOU vs YOU" through which they tend to provoke their applicants to compete with none other than themselves and

conquer a better you with each passing day.

**Foster Learning Pakistan is a leadership skill-developing organization among youth, which helps Pakistani youth to secure a dream job or start a career as an entrepreneur**

It is a social enterprise with

international collaborations, aiming at empowering Pakistani youth through its Leadership Program which helps to develop the skills, essentially required to have a successful career as a professional or as an entrepreneur.

## 2. MIT Enterprise Forum Pakistan

MIT Enterprise Forum Pakistan has launched a Startup School,

which offers a six-weeks-long training program to help young entrepreneurs and provide startups with resources and tools to better complement their startup needs. Through a blend of online and offline learning best suited to Pakistan-based startups.

**MIT Enterprise Forum Pakistan has launched a Startup School, which offers a six-weeks-long training program to help young entrepreneurs**

From team building to communication skills, business strategies to marketing tools, professional trainers will bring insights from their industry experience to ensure startups make the most of this rigorous program.

**3. Institute Of Business Administration (IBA)**

IBA AMAN CED collaborated with Nestle Pakistan for the promotion of entrepreneurship by launching an Entrepreneurship Development Program.

IBA certificate program has been developed with a special focus on developing the entrepreneurial and managerial skills of the participants while focusing on changing the mindset of the students from the resource-driven approach to an opportunity recognition approach.

**IBA certificate program has been developed with a special focus on developing the entrepreneurial and managerial skills of the participants**

**4. Pakistan Institute OF Technology and Entrepreneurship (PITE)**

It is the Leading IT Institute that offers Computer Courses in Karachi, Pakistan. They claim to be the best computer institute in Karachi with the aim to train students willing to develop their careers in Information Technology.

They offer Crash Courses, Short Courses, Short Degree Programs, CIT, DIT, Diploma Programs, and Certified Course Program. They have state of the art labs and industry top leaders that teach their students the best by sharing their experiences and best practices.

**5. School Of Learning (SoL)**

SoL is an Institute determined to "help you be you." They believe in setting their students on the path to discover their own answers and live out their distinction. They intend to develop leadership skills in their students and to train them in order to keep up with the race of life today.



# TELECOM CAMPAIGNS



## PTCL Unlimited TVC

**PTCL** has provided us with the best internet packages in Pakistan, but when it comes to TVCs, they are not the best in town. Their TVCs are always loaded with loud music which turns off the viewers at the very first place. Just like other TVCs, PTCL unlimited TVC also has loud music with everything moving at a fast speed due to which the overall message is not conveyed well. The Bara Athara text at the end looks very bad to one's eyes due to their effort to make it the same as their logo.

**Verdict: Please change your media agency**

## Zong 4G

Zong 4G TVC features Pakistan's best batsman Younas Khan and England's Jason Roy who was the part of the team when it won world cup 2019. In the TVC, Jason Roy visits different places showcasing the colors and beauty of Pakistan. Thanks to Zong 4G fast internet, Jason has captured every beauty of Pakistan and shared it on different platform including Facebook, Instagram, snapchat and Twitter. Ten on ten for the music, acting and overall theme of the advert.

**Verdict: Dil Jeet Lia!**



## Uber Motto

Uber Moto Bullao Traffic Bhagao TVC is a long TVC with a song featuring Shuja Haider, Asim Azhar, Abid Brohi and Jimmy Khan. The song is quite good, giving a message to book Uber bike if you want to reach a destination on time. The theme of the advert is good; however, the acting of the rider is very poor. Furthermore, the same Mehran is following the bike at each and every scene. As uber has spent a huge amount of money, and the theme is good, we will forget the minor mistakes.

**Verdict: Mehnat Jari Rakhain!**

### **Jazz 25: Duniya ko bata do!**

Jazz released a new ad on its 25th anniversary. The ad is quite thought provoking and motivating. By watching the ad I realized how strong and delightful words can make you feel better and think positive. The performance of sanam saeed is so amazing. Her bold and energetic way of delivering the words make the ad more admirable. The overall theme is good

**Verdict: Mind blowing!**

### **Food Panda: Don't cook!**

The new ad of food panda highlights its amazing offer. Where one can get upto 70% discount on every order. The tagline of the ad is Kitchen ko taala lagao! Don't cook! Food Panda Karo. The ad is short and simple. The performers of the ad did well and deliver the message clearly

**Verdict: Nice Ad!**

### **Telenor: Get more se Zayada with 4G!**

Telenor 4G new ad is not so impressive but not bad as well. The message delivered in the ad is all about the bonding of relations and defines the emotion's importance. The ad shows how one can connect with their beloveds and how they can get the access of everything with the fastest speed of Telenor 4G.

**Verdict: It was OK!**



# SMART MANUFACTURING: TRANSFORMING YOUR FUTURE

Cloud technology digitally transforms your company to fully connect your data, your users and your customers. Smart manufacturers need modern solutions, but legacy ERP systems lack the connectivity to keep up.

## LEGACY ERP SYSTEMS

### Disconnected systems

Data from different modules, locations and systems exist in separate silos



### Maintenance

Software requires time-consuming troubleshooting and upgrades



### Delayed reporting

A lack of real-time data availability creates "rearview mirror" decision-making



### Fragile links

Upgrades can destroy manual connections between ERP and other modules



## SMART MANUFACTURING IS KEY

TO MANAGING PRESENT-DAY PROBLEMS AND FUTURE CHALLENGES



A completely integrated manufacturing ecosystem providing real-time data to stakeholders, starting at the factory floor



Machines



Employees



Suppliers



Customers



Executives



Engaging connectivity



A single ERP system



Seamless integration of connected and IP-enabled devices supporting the Industrial Internet of Things



Supplier and customer portals



Enabling mobility



Bluetooth and Wi-Fi communication between mobile devices and equipment on the plant floor



Flexibility for an "unfiltered workforce"



Single data access for mobile devices from a single cloud database

## BOTTOM LINE BENEFITS OF SMART MANUFACTURING

### INTEGRATED SYSTEM

#### Clear communication

as all parties access one source of information and data silos are eliminated

#### Eliminate upgrades

with modern cloud systems



# Top Applications and Games for your Smartphone



## Mario Kart Tour

Mario and friends go global in this new Mario Kart as they race around courses inspired by real-world cities in addition to classic Mario Kart courses! These destinations will be featured in tours that rotate every two weeks!



## Time Zone Data

The purpose of this application is to update the timezone database from Motorola devices, to align with the latest timezone changes on multiple countries.



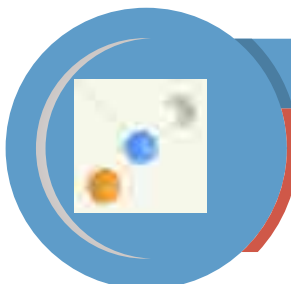
## Granny: Chapter Two

Granny and Grandpa keeps you locked in his house this time. To survive You have to try to get out of his house, but be careful and quiet. Granny hears everything as usual.



## Gradient - You look like

We would like to introduce our brand new FUN feature - the most accurate look-alike technology! See which historical person or celebrity looks similar to you and share your awesome result with your friends as a Stories or a Post!



## Marbleous!

Become a marble maze master in this brand new game. Find the right path by knocking marbles against each other, and defeat every level!



## Visionist

Create masterpieces at the tap of your finger. Visionist harnesses the power of computer vision using neural networks to create original artwork based on your images!



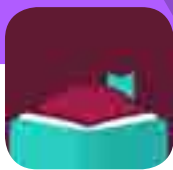
## 1Blocker X

Aiding your Safari experience on mobile, 1Blocker X - Adblock takes out the ads, trackers, popups, cookies and invasive signup prompts thus makes webpages load faster and improves your web browsing experience right in your iPhone.



## Drafts

Drafts is a free app for the iPhone by Agile Tortoise which lets you easily put down on record what you have in your thoughts at that moment.



## Libby

Access your public library for ebooks and audiobooks with Libby for iPhone. Public libraries are not yet extinct as it has managed to caught up to modern times and to technology as well.



## JustWatch

Get to know what shows are showing on your favorite Network TV through your iPhone with JustWatch app. JustWatch is a free app for iPhone which offers you where to watch movies legally online.





**Oppo Reno 10X Zoom**

Price : PKR.109,999/-  
Display: 6.6 inches  
Memory: 256GB ROM,  
8GB RAM  
Camera:  
40MP+13MP+8MP



**Samsung  
Galaxy A70**

Price : PKR.67,999/-  
Display: 6.7 inches  
Memory: 128GB ROM,  
6GB RAM  
Camera: 32MP+8MP+5MP

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



**Huawei Y9 Prime 2019**

Price : PKR.33,999/-  
Display: 6.59 inches  
Memory: 128GB ROM,  
4GB RAM  
Camera: 16MP+8MP+2MP



**Vivo Y15**

Price : PKR.29,999/-  
Display: 6.4 inches  
Memory: 64GB ROM, 4GB  
RAM  
Camera: 13MP+8MP+2MP



**Oppo Reno**

Price : PKR.69,999/-  
Display: 6.4 inches  
Memory: 128GB ROM,  
8GB RAM  
Camera: Dual 48MP+5MP



**Samsung Galaxy A50**

Price : PKR.54,999/-  
Display: 6.4 inches  
Memory: 128GB ROM,  
4GB RAM  
Camera: 25MP+8MP+5MP



**Vivo V15 Pro**

Price : PKR.59,999/-  
Display: 6.4 inches  
Memory: 128GB ROM,  
6GB RAM  
Camera: 48MP+8MP+5MP



**Xiaomi Redmi Note 7**

Price : PKR.35,999/-  
Display: 6.3 inches  
Memory: 64GB ROM,  
4GB RAM  
Camera: Dual 48MP+5MP



**Samsung Galaxy A10**

Price : PKR.23,499/-  
Display: 6.2 inches  
Memory: 32GB ROM,  
2GB RAM  
Camera: 13MP



**Honor 8S**

Price : PKR.18,999/-  
Display: 5.71 inches  
Memory: 32GB ROM,  
2GB RAM  
Camera: 13MP

realme

# realme 5 | 5 Pro

Quad Camera SpeedMaster



AIQP Super  
Quad Camera

**VVOOC**

VVOOC Flash  
Charge 3.0



Snapdragon  
710 5G



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f/Pakistanrealme

/realmePakistan

POWERED BY OPPO

TECNO  
mobile

# SPARK 4

Bigger, Broader, Clearer



*Mikhaal Zulfiqar*  
Mikhaal Zulfiqar  
TECNO Celebrate Family



PKR. 16,999



**13MP**  
AI Triple  
Rear Camera



**6.6"**  
Dolby Vision  
Screen



**32 + 3**  
GB  
RAM



**4G**  
LTE



vivo

# V17 Pro

— Clear As Real —  
6 AI Cameras, Perfect Shot

