

phoneWorld

Issue 41 | Nov-Dec 2019



Bakhabar Kissan
Transforming the Agricultural
landscape of Pakistan

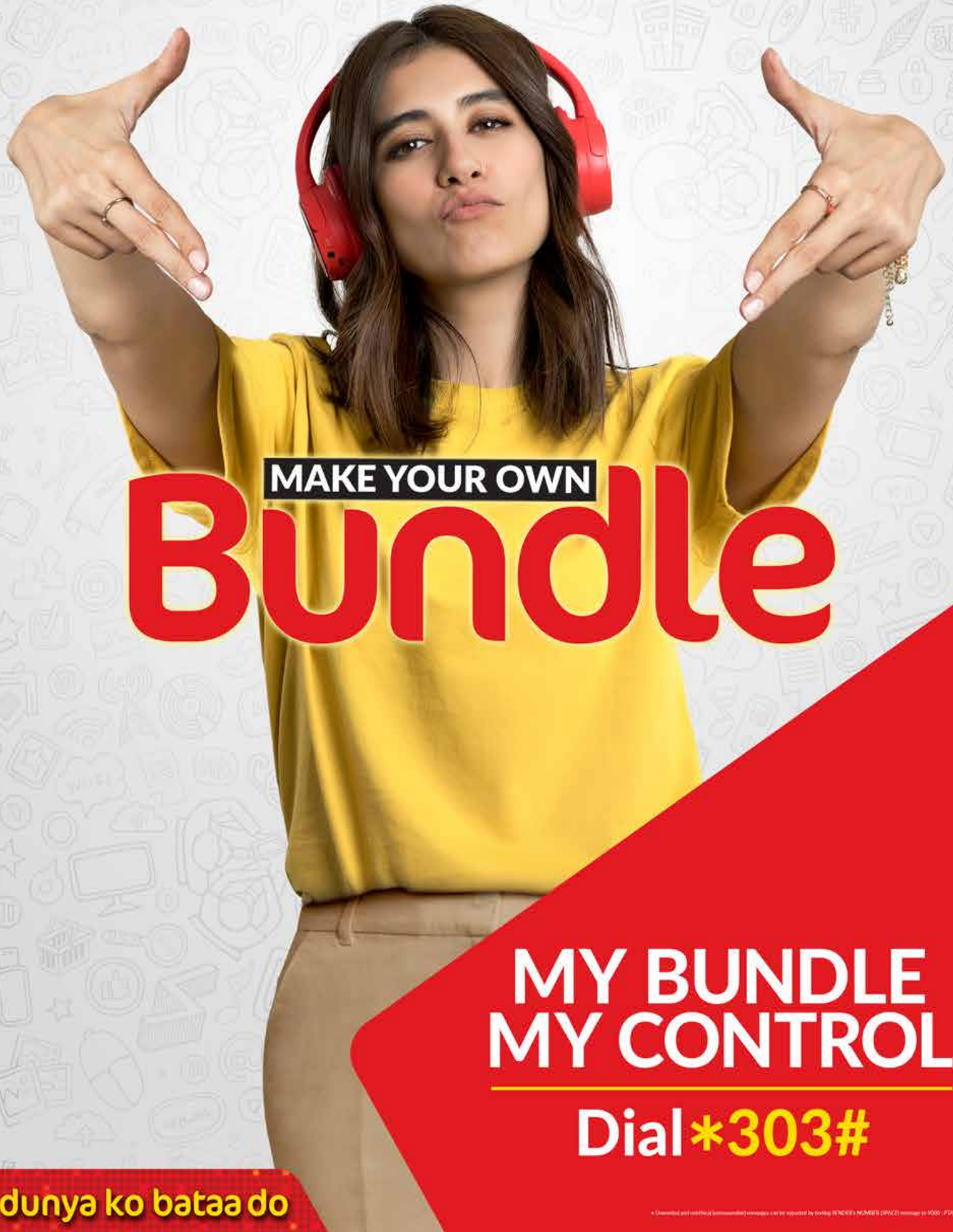
Short Term Spectrum
RoadMap For 4G And 5G
in Pakistan

Jahanzeb Khan
CSTO, Telenor Microfinance Bank
An Exclusive Interview





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Adnan Khan
Managing Editor

Dear Readers,

In this modern era of connectivity where data is everything, mobile networks must continue to evolve and deliver on the immense potential of the nascent Internet of Things industry. To unlock this potential and build a strong mobile future; mobile operators need access to sufficient and harmonized spectrum. Pakistan should keep up with the changing dynamics of market to reap maximum benefits and renew its spectrum policy for the betterment of all stakeholders and more importantly for the social and economic growth of the country. We have covered this topic in detail in our feature article, "Short term Roadmap for 4G & 5G in Pakistan".

With the changing dynamics of the world population, agriculture has undergone a series of revolutions that have driven efficiency, yield, and profitability to previously unattainable levels. Bakhbar Kisaan steps in that direction that aims at the improvement of the agriculture of Pakistan that will lead to prosperous farmers and a better economy. This initiative has been discussed in our article, "Bakhbar Kissan: Transforming the Agricultural landscape of Pakistan". In order to promote the local mobile industry, the government has started working on its first mobile policy. We have discussed the impact of mobile policy in our article, "Pakistan's First Mobile Phone Policy: A Journey from consumer market to producer market".

Our current issue also covers an interview with Jahanzeb Khan, Chief Strategy Transformation Officer at Telenor Microfinance Bank Limited. Jahanzeb Khan is a recognized global leader in digital and emerging technologies with 20 plus years of leadership experience in fin-tech. He is considered an expert in digital technologies and fin tech across the globe and has led the technology and digital space for largest global firms.

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.

At the end I would like to wish a very happy new year to all our readers on behalf of Phone world team.
Enjoy Reading...!!!

Thank you,
Adnan Khan
Managing Editor

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Contents

Feature

Page 10
**Short term Spectrum Roadmap For 4G And 5G
in Pakistan**

National

Page 18
**Best Smartphones of the Year
Phoneworld Awards 2019**

Infocus

Page 26
**Jahanzeb Khan, CSTO at TELENOR Microfinance
Bank Limited**

Phone Reviews

Nokia 7.2 Huawei Y9s Infinix S5
Oppo Reno 2 F

National

Page 40
Year 2019 in a glimpse

Telecom Campaign

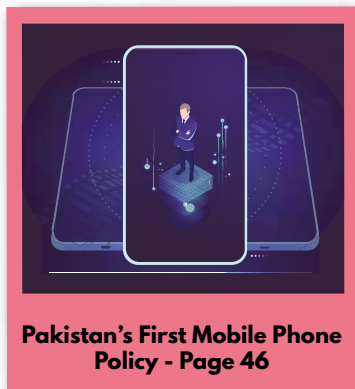
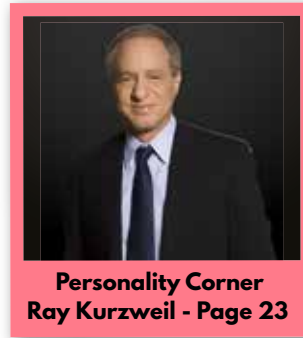
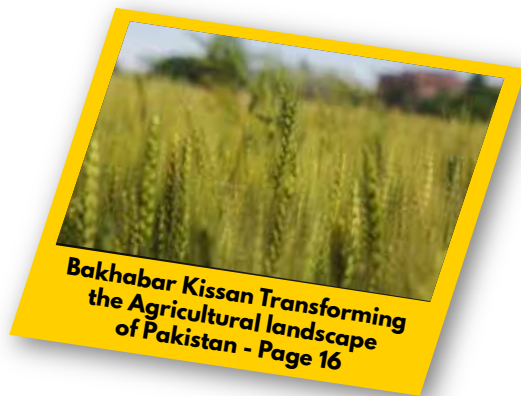
Page 50
A critical review of TV AD Campaigns

App World

Page 54
Applications & Games for your smartphone

Wishlist

Page 56
Latest Smartphones in the market



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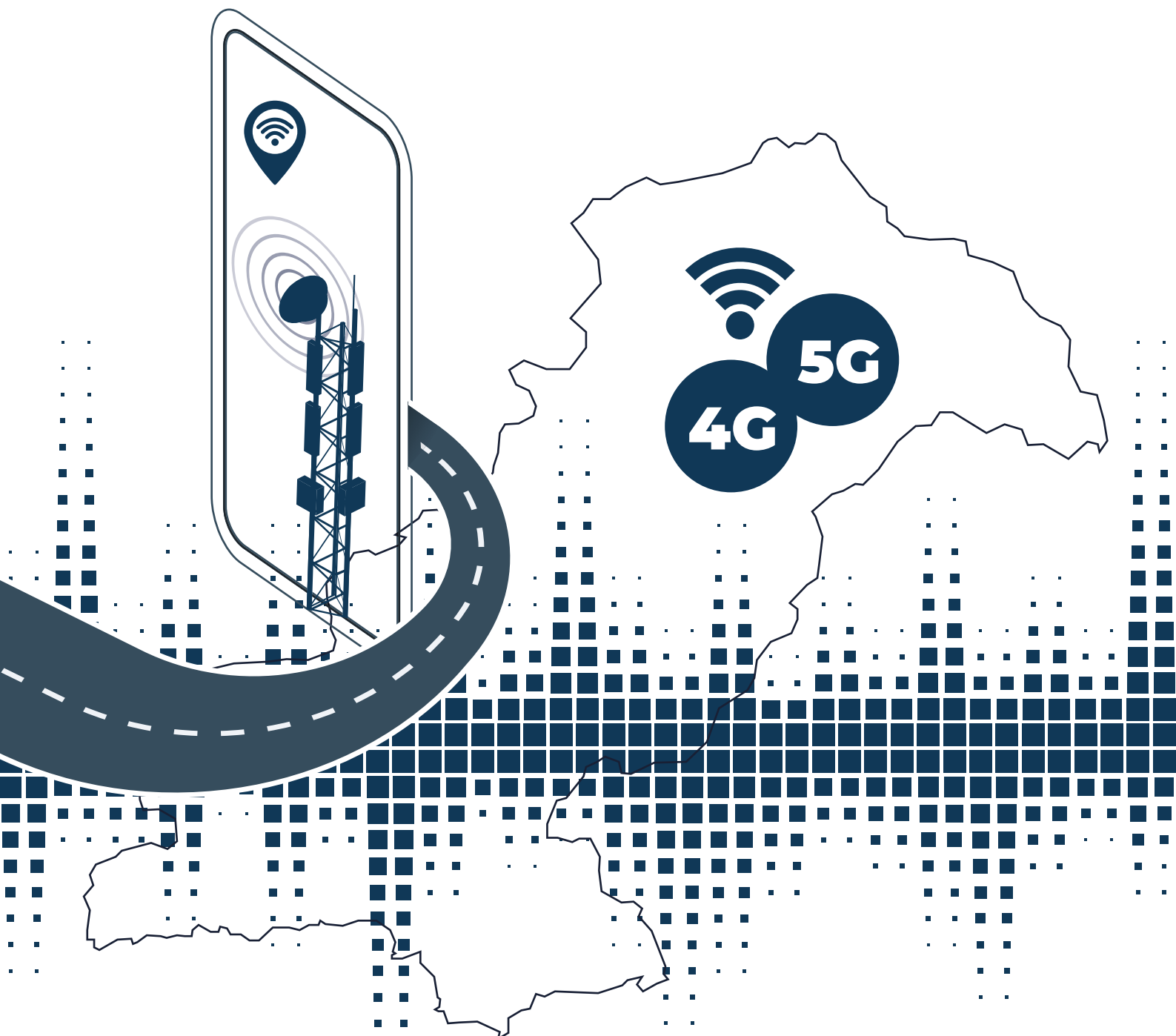
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Issue 41

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By Rizwana Khan

SHORT TERM SPECTRUM ROADMAP FOR 4G AND 5G IN PAKISTAN



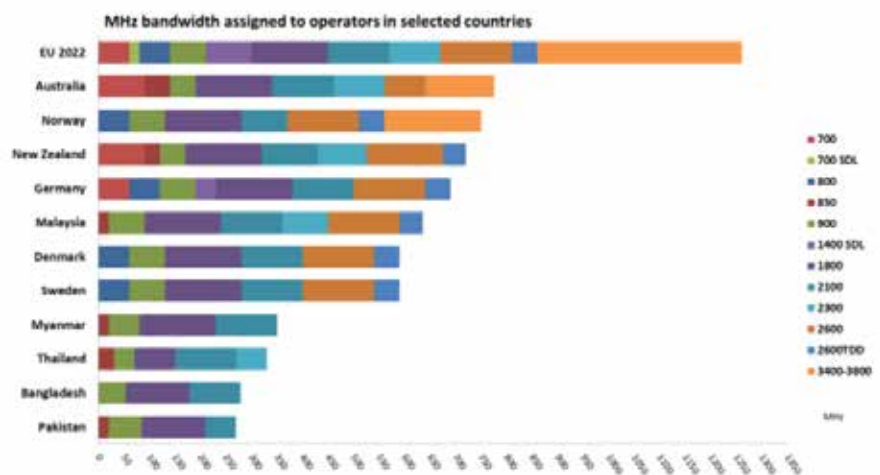
In this modern era of connectivity where data is everything, mobile networks must continue to evolve and deliver on the immense potential of the nascent Internet of Things industry. To unlock the true potential of modern technology and build a strong mobile future; mobile operators need access to sufficient and harmonized spectrum. Effective spectrum management holds the key to provide favorable circumstances for operators as everything starts with proper planning. To build an environment of trust and allow the industry to innovate and thrive, it is very important to have transparent, long-term broadband plan that includes a strategy for making sufficient amounts of spectrum available to the mobile industry that too, at a price that is acceptable to all stakeholders.

It is important to have transparent, long-term broadband plan that includes a strategy for making sufficient amounts of spectrum available to the mobile industry that too, at a price that is acceptable to all stakeholders

Spectrum management has become increasingly complex as governments release new spectrum in existing mobile bands, release spectrum in new bands and manage the renewal of licenses. Efficient and effective management of all these activities is central to the continued investment in the industry, and development of mobile services. The governments need to work together with respective stakeholders to get the right spectrum approach to realize full potential of mobile broadband and bring substantial benefits to consumers, in terms of quality of service and innovation.

Spectrum is a resource that if used properly has great value if not, it is useless. Pakistan has so far allocated only 256 MHz of spectrum for cellular mobile services which is lower than almost any country in the world. Smaller countries like Myanmar have allocated more spectrum than Pakistan. Figure below shows the allocation in different countries.

Spectrum Inventory - APT vs. European Union



Even out of the allocated spectrum of the 256 MHz, 81.6 MHz allocation expired this year and has become a bone of contention between the government and the mobile operators whereas; 27.2 MHz will expire in the year 2022. Therefore, there is a dire need of proper spectrum allocation of the existing spectrum in an efficient manner while at the same time also end the fragmentation that currently exists resulting in the inefficient use of spectrum.

While the long term plans should consider frequency bands above 6 GHz and some newly identified bands in the lower frequency bands, Pakistan should IMMEDIATELY consider allocating 8 different frequency bands in TDD and FDD modes as discussed later in this article. Most of the countries in the world have already allocated these bands for cellular services. This will result in the allocation of more than 750 MHz of spectrum

allocation which is at around 3 times more than the current allocation. This will set the stage for 5G launch in the country and will also create direct and indirect revenue for the country. In order to achieve the desired outcome government needs to invite all the stakeholders, ICT professionals and experts from International organizations like ITU, APT and

GSMA for an open debate to decide the most feasible path of action.

Pakistan should IMMEDIATELY consider allocating 8 different frequency bands in TDD and FDD modes

Now let's discuss the bands of spectrum in which the spectrum is up for renewal in order to address the issue of fragmentation of spectrum.

Spectrum Renewals and Band 3, 5 and 8

1. Allocation of Band 3 (or the 1800 MHz) Band

This band has an UL: 1710—1785 MHz and the DL: 1805—1880 MHz with a total of 2 X 75 MHz.

Out of the total of 2 X 75 MHz, 2 X 20 MHz has been auctioned in

2014. Zong acquired 2 X 10 MHz while Jazz has also acquired 2 X 10 MHz in this band.

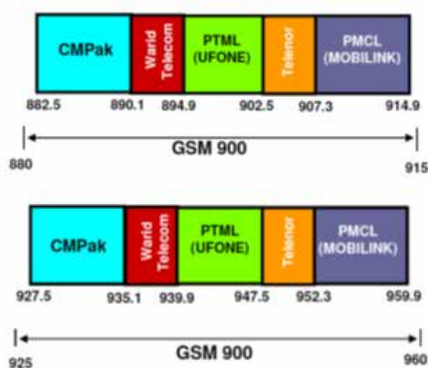
The remaining 2 x 55 MHz should be defragmented before allocation by creating and allocating blocks in multiples of 2x5MHz. Details can be worked out by holding consultations with the stakeholders.

2. Allocation of the 850 and 900 MHz Bands

These bands are known as Band 8 and 5 respectively and have the following characteristics:

Band	UL	DL	Total
5	824—849	869—894	2 x 25
8	880—915	925—960	2 X 35

As apparent from the table, there is an overlap between the downlink and the uplink of these bands so the whole bands cannot be used. The two figures below show the current allocation.

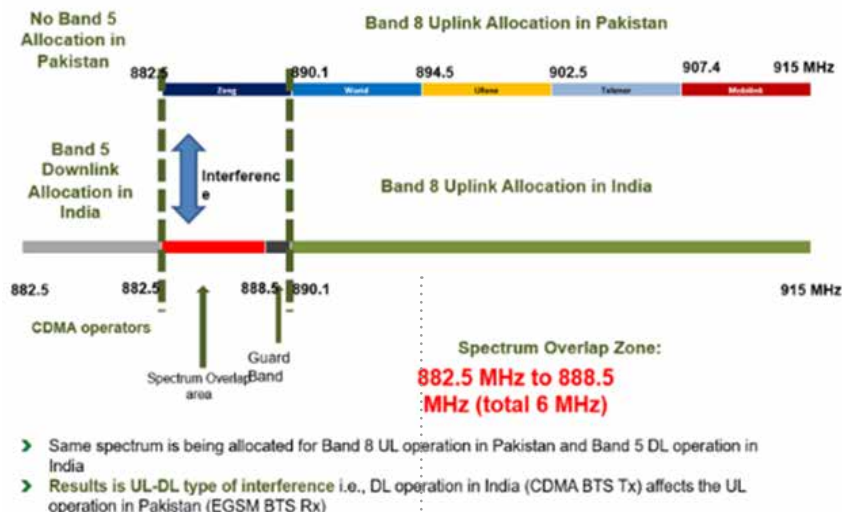


It may be noted that the spectrum allocated in the 900 MHz (Band 8 or the EGSM) has interference from India and therefore, this portion of the spectrum should not be renewed.

Spectrum allocated in the 900 MHz has interference from India and therefore, this portion of the spectrum should not be renewed

The impact of interference is depicted in the below figure.

Present Band 5 & 8 Spectrum Allocation in Pakistan & India



In band class 5 use, 824—843/869—889 MHz portion results in 2 X 20 MHz of spectrum and in band class 8 use, 890—915/935-960 MHz portions result in 2 X 25 MHz of usage. There will be a guard band of 1 MHz between the UL of Band 5 which will now end at 889 MHz and Band 8 which will start at 890 MHz.

In some areas the portion between 1960—1980 MHz is still with Telecard and Worldcall who have indicated to surrender it provided, their dues are negotiated

Analysis have shown that around 1.6 MHz to 2 MHz of guard band is sufficient. Therefore, who so ever opt for this band should be charged less as the Down link would have to be limited to 4.4 MHz by installing special filter at the Node B or eNode B. Up link on the other hand can use the complete 5 MHz. Furthermore, the last block of Band 3 and the first block of Band 8 should be given to the same operator. We would also get the band 925—935 MHz that is the DL only. The band 824—834/869—879

MHz is already with Telenor. Rest of the allocation can be in a way that all the operators have some spectrum in the 900 MHz band (Band class 8) and will resolve the issues of these operators plus this will earn good revenue for the government.

Band 1 (2100), Band 28 (APT 700), Band 40 (2300 MHz), 41 (2500 MHz) and 42 (3400 MHz)

Band 1

UL 1920—1980/DL 2110—2170
Total: 2 X 60 MHz

The band 1920— 1930MHz/2110—2120 MHz has been allocated to Zong. However, in the UL that is 1920—1930 MHz there is interference from cordless phones that has to be cleared.

In some areas the portion between 1960—1980 MHz is still with Telecard and Worldcall. They have indicated that they can surrender it provided, their dues are negotiated. If these issues are resolved a further 2 X 30 MHz of spectrum can be allocated.

The interfered band can be allocated to any of the operators at a discounted price that can eliminate the interference of DECT with the help of PTCL.

Band 28

(APT 700): UL 703—748/DL 758—803
Total: 2 X 45MHz

This frequency band is with government user who is willing to vacate it if the cost of equipment is paid.

If this issue is resolved a further 2 X 45 MHz of spectrum can be allocated.

Band 40

TDD: 2300—2400 MHz
Total of 100 MHz

This frequency band is free and may only have a few point to point links and can be allocated. This band can be used for 4G as well as 5G.

Band 41

TDD: 2496—2690 MHz
Total of 194 MHz

Portions of this band in some cities are used by some services but can be vacated by holding a broad level consultation with all the stakeholders. This band can be used for 5G.

Band 42

TDD: 3400—3600 MHz
Total of 200 MHz

This frequency band has been allocated for WLL with some free portions and need some consolidation. Furthermore, spectrum beyond 3600 MHz can be used by shielding C Band satellite ground stations. The whole band is most suitable for 5G.

ISM Band in the 900 MHz for IoT

There are many IoT standards that are part of 3GPP (e.g. LTE-M, EC-GSM, NB-IoT, IMT etc.) but there are also some that are not standardized (LoRA, SIGFOX). Generally, the famous IoT technical solutions have low power but long range (LPWAN). For this they operate in the sub 1 GHz band. The most famous of these are the SIGFOX and LoRA which are most used for smart metering but it must be noted that the same applications (plus much more) can be achieved using the standardized technical solution e.g. IMT.

Some countries that have either allocated or have identified the spectrum for the ISM bands include USA, Canada, Chile, Colombia, Costa Rica, Mexico, Panama, Uruguay = 902 - 928 MHz (ITU region 2 allocations so may not be applicable to Pakistan as it is), Australia, Peru & Brazil (915 - 928 MHz), New Zealand (921.5 - 928 MHz), Indonesia (923 - 925 MHz, LoRA and Sigfox solutions in trial. Results not clear enough yet), Korea (917 - 923.5 MHz), Singapore, Thailand, Vietnam & HK (920 - 925 MHz), Japan (916.7 - 923.5 MHz), Malaysia (919 - 923 MHz), Bangladesh (925 - 927 MHz), Philippines (918 - 920 MHz), Taiwan & Venezuela (22 - 928 MHz).

In Pakistan the 869—879 MHz and 882.5-915 MHz, 925-962.5 MHz has been allocated for cellular services with 915 to 925 MHz as a guard band between uplink and downlink. Part of this guard band that is 5 MHz of spectrum from 917.5 to 922.5 MHz may first be trialed (By using the 5MHz in the above configuration we can leave 2.5 MHz as guard band on both ends). Especially the effect on the throughput of existing cellular

services operating in 900 band must be carefully observed in presence of relevant operators. EIRP requirements etc. can be the same as that in Australia. Other important criterion for IoT devices is the duty cycle. Usually it is allowed at less than 1% for each device and in some bands less than 0.1%. For trial, this should be made at least 10% to see worst-case scenario. Similarly, for trials the power output should be considerably higher than allowed limits. There should not be licensing requirement; however, PTA should have strict type approval criteria so that the devices are compliant with whatever band is allocated.

Effective telecommunication infrastructure has become an essential driver that enables social and economic growth of any country, giving radio spectrum central role in all the developments. The radio spectrum is used for plethora of economic, social, cultural, scientific and developmental purposes providing end users with number of services. Therefore, effective management of frequency spectrum is of major importance for all countries. The past decade has witnessed significant changes with demand for mobile communication skyrocketed. Pakistan should keep up with the changing dynamics of market to reap maximum benefits and renew its spectrum policy for the betterment of all stakeholders and more importantly for the social and economic growth of the country.

Pakistan should keep up with the changing dynamics of market to reap maximum benefits and renew its spectrum policy for the betterment of all stakeholders and more importantly for the social and economic growth of the country



Bakhabar Kissan

Transforming the Agricultural landscape of Pakistan

The agriculture sector plays a substantial role in the economy of Pakistan as it contributes 18.9% to our GDP and almost 42.3% of the labor force is employed in the agriculture sector. It is very disappointing that our farmers, especially the small landholding farmers face multiple issues. They are unable to get access to actionable information and are unaware of the best farming practices and technology. This is compounded by poor access to credit and quality inputs such as seeds, fertilizers, and pesticides. Moreover, due to lack of adequate storage, inability to add value (better packaging and presentation) to products, the

farmers do not get a fair price for their production. In addition to that, presence of middlemen at each stage of the distribution network also create problems for the farmers. Realizing the issues of farmers and facilitating them, Bakhabar Kissan (BKK) in collaboration with Jazz has developed a farmer-centric platform that brings together all actors in the agriculture value chain.

“Bakhabar Kissan: The “Digital Hub for Agriculture” is now a community of three (3) Million subscribers!”

The platform facilitates the agriculture community in getting access to a variety of services ranging from weather information, access to agriculture experts, best farming practices, and information on fertilizers, seeds, pesticides, and other agricultural inputs. These include weather updates and alerts, Crops' information, news on Agriculture, mandi Rates, Livestock information, fertilizer calculator, drone and satellite imagery analysis, Disaster Management, and Interest-Free Loans. Initially, farmers were hesitant to utilize the BKK platform expressing reluctance to move away from traditional practices and inherited community knowledge. Through the feedback mechanism in the SMS and call center, BKK



listened to the farmers and fittingly modified the content of IVR, SMS, VMS, and social media channels. Today, the BKK platform consists of a vibrant community of over 3 million registered users, with the platform providing increasingly customized information based on region, size of holding, soil variety etc. It is possible to interact with BKK in seven different languages English, Urdu, Pashto, Hindko, Punjabi, Seraiki, and Sindhi.

Through the feedback mechanism in the SMS and call center, BKK listened to the farmers and fittingly modified the content of IVR, SMS, VMS, and social media channels

Jazz Bakhbar Kissan (BKK) is best classified as a Mobile/Digital Agri-Tech platform, that cuts across the agricultural value chain starting from planning to growing to

harvesting and selling the produce in the market.

BKK provides an all-encompassing ecosystem where all players in the agricultural value chain can interact and transact using mobile and digital technologies

BKK provides an all-encompassing ecosystem where all players in the agricultural value chain can interact and transact using mobile and digital technologies. The overriding objective of BKK is to improve the productivity and profitability of all actors in the agricultural value chain, in particular, the small landholding farmers in Pakistan.

BKK works in the folding farms (actionable insights and information about agriculture), Agri commerce (selling farmers' produce, by exposing them directly

to the market and obtaining them the right price for their products). BKK also specializes in IoTs and provides modern equipment for farmers. Moreover, it facilitates farmers in Agri lending and insurance as well. The BKK platform buys back the produce from farmers and sells it via Farm to home directly to consumers eliminating middlemen. The platform is also focuses on increasing women empowerment by giving them special pieces of training.

The BKK platform buys back the produce from farmers and sells it via Farm to home directly to consumers eliminating middlemen

BKK is accessible via conventional and digital channels including SMS, VMS, IVR, Call Center, WhatsApp, Facebook, YouTube,

etc. it is a collaborative platform and it facilitates and encourages multi-way communications and feedback. The platform also has social media presence on all major platforms including Facebook, Instagram and Twitter.

Conventional

- SMS (Short Message Service): Push and Pull from +92-303-030-0000
- IVR (Interactive Voice Response): Available 24 hours at +92-303-030-0000
- Call Center (Inbound and Outbound Calling): +92-303-030-0000
- VMS (for Disaster Management)/ Robo calls
- WhatsApp Business available on "+923030300000"

Digital

- Android Application
- Website: bakhabarkissan.com



The success of Bakhabar Kisaan is evident from its 3 million subscribers while the CEO, Khizer Alam Khan has now set the target of increasing the farmer subscriber base to 6 million by the end of 2020. The plans to diversify into the seeds business and acquiring a Microfinance license are also underway. BKK already partners with several entities working in the agriculture domain, including seed/ fertilizer/ pesticide companies, machinery providers, companies operating in the Agri lending/ insurance domain, exporters/ producers, entities working in the areas on improving nutrition, NGOs, development organizations, Agri-Tech entities etc.

BKK has now set the target of increasing the farmer subscriber base to 6 million by the end of 2020

With the changing dynamics of the world population, agriculture has undergone a series of revolutions that have driven efficiency, yield, and profitability to previously unattainable levels. Market



forecasts for the next decade suggest a 'digital agricultural revolution' will be the newest shift which could help ensure agriculture meets the needs of the global population into the future. Bakhabar Kisaan steps in that direction that aims at the improvement of the agriculture of Pakistan that will lead to prosperous farmers and a better economy.

A 'digital agricultural revolution' will be the newest shift which could help ensure agriculture meets the needs of the global population into the future



TECH TWIST



The original Space Jam website is still live

1996's much-loved film starring Michael Jordan and Bugs Bunny might have grossed over \$230 million worldwide, but the real highlight is the fact its website is still going. Marvel at all its marvelous glory. If you are old enough to remember and love Space Jam, then you might be pleased to hear there's a sequel in the works set to release in 2021.

1



Nintendo was founded as a playing card company in 1889

Video gaming giant Nintendo was originally founded as a playing card company way back in the hazy days of 1889. It wasn't until the 1960s that the company moved into producing toys and then a decade later into video games.

2



Hewlett-Packard's company name was almost Packard-Hewlett

Bill Hewlett and David Packard graduated from University in 1935. In typical fashion for the industry, the two started their business in a garage. The company was properly formed in 1939, though the pair could not decide on a name and ended up flipping a coin to determine whose name would come first. Thus HP was born, it could have easily have been PH instead.

3



The term robot actually means "forced labor"

We hope one day robots might do our bidding and rid us of the most boring, taxing and unwanted jobs of society. But did you know the term "robot" comes from a Czech word, robota, meaning "forced labour"? We just hope they never discover that to be the case as we're fairly sure that's when the robot uprising will begin.

4



A Rubik's Cube can be solved in 20 moves or less

Back in 2010, Google's researchers used supercomputers and an intelligent algorithm to fathom that any Rubik's Cube can be solved in 20 moves or less. That research also uncovered that a standard Rubik's Cube has 43,252,003,274,489,856,000 different potential configurations.

5

Best Smartphones of the Year

PHONEWORLD AWARDS 2019

Year 2019 had been amazing in terms of technological advancements in the smartphone industry. We have had true bezel-less displays with pop-up selfie cameras, stunning foldable phones came to reality, 90 and 120 Hz refresh-rate displays, extra-ordinary camera setups in every price segment of the Pakistani Smartphone market and a lot more.

Luckily, we got our hands on most of the smartphones that were launched this year. We thank all our partners for that. Our team tested and reviewed each smartphone and rated it accordingly. But this time around, each one of us were truly puzzled when finalizing this list, which by the way has never happened in the previous years. The competition between all the phones has been neck to neck.

The awards have been categorized in 5 categories.

- Best Overall Smartphone of the Year
- Best Camera Phone of 2019
- Best Compact Phone of the Year
- Best Mid-range Smartphone of 2019
- Best Budget Phone of 2019.

This time, there is a winner, a runner-up and worth mentioning smartphones.

So, without further ado let's begin with the list.

1) Best Smartphone of 2019

In this category we considered every aspect of the smartphone from the design, build quality to cameras, and performance. We considered pretty much every feature and spec and then carefully chose our winner Smartphone.

Best Smartphone of the Year 2019

Samsung Galaxy Note 10+



Runner Up

Huawei P30 Pro



Worthy Contender

iPhone 11 Pro Max



2) Best Camera Phone of 2019

We tested and reviewed the Cameras by Samsung, Apple, Huawei, Xiaomi and all other brands. We compared their Image quality in daylight, low-light & artificial lighting condition as well as their video quality and all other aspects including portraits, video portraits, color saturation, contrast and details, slow motion and much more.

It was a really tough call, as they are pretty much the same and you cannot go wrong with any of them.

Best Camera Phone of the Year

Oppo Reno 10x zoom



Runner Up**Huawei P30 Pro****Worthy Contenders****Samsung Galaxy Note 10+****Apple iPhone 11 Pro Max****3) Best Compact Phone of the Year 2019**

Although, smartphones are getting bigger and the "6-Inches" display size was pretty much the standard this year. Still, these phones when compared to other phones are sort of compact and easy to carry both in hand and in your pockets. They have flagship specs, top-notch cameras and perform exactly as a high-end phone would.

Best Compact Phone of the Year**Huawei P30 Pro****Runner Up****iPhone 11 Pro****Worthy Contender****Realme XT****4) Best Mid-Range Smartphone of 2019**

We took PKR 65,000 maximum price range for this category. This year, we have had amazing devices with almost flagship level specs that offered top level performance. In Pakistan, we didn't get many shining devices like the K20 Pro from Redmi and the Realme 2 Pro, but we still had some fine mid-range smartphones that gave extraordinary performance.

Best Mid-Range Smartphone**Vivo V17 Pro****Runner Up****Oppo F11 Pro**

Worthy Contenders

Realme 5 Pro



Redmi Note 8 Pro



Huawei Y9s 2019



5) Best Budget Smartphones of 2019

2019 has been the best year for those who were looking for budget smartphones with decent performance, good looks and better value. We even had phones with amazing gaming capabilities under 15,000 PKR. Some had Triple Camera Setups, and even punch-hole displays. We truly believe that "Budget Smartphones are getting Better Each Year".

Best Budget Smartphone of 2019

Infinix Hot 8



Runner Up

Tecno Camon 12 Air



Worthy Contenders

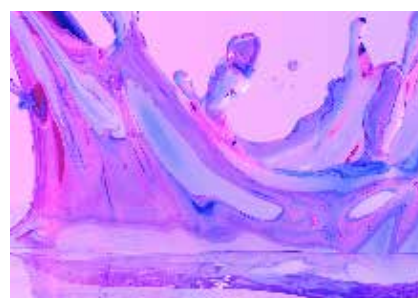
Infinix S5



Tecno Spark 4



From AI to 5G connectivity to foldable screens, smartphones are evolving faster than ever. All the mobile companies are trying hard to out their ace device. All this competition benefits us users to choose from a wide array of excellent phones. We hope that next year will be even more exciting with even better smartphones.

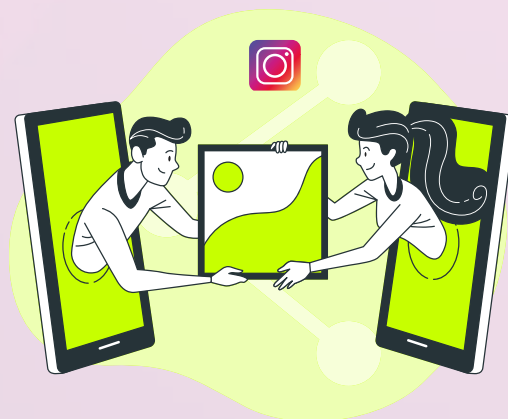


How To!

Download Instagram Stories on Android and iOS



Instagram Stories started as a knock-off of the somewhat similar feature of Snapchat, but with more than 500 million daily active Stories users worldwide it has evolved to be incredibly popular. Stories offer an ephemeral, more casual way to share content with your friends and followers who don't stay in your main feed for Instagram forever. You can share stories with all your followers or to your close friend group (option available to create one on Instagram). As owned by Facebook, you can also share your Insta stories to your Facebook to reach your friends.



How to Download on iOS:

To download Instagram stories on iOS you have to go to Instagram's App Store and install 'Repost Story for Instagram'. The software is quite easy, just give it access to your photo library and then check for a username for Instagram. You can also watch stories anonymously through the app, so your crush will never know you're watching. You can also recreate your old photos or videos with a new date using the Story Creator app.

How to Download on Android:

The Android app we've been using is called Story Saver, available at the Google Play store for free. As with the iOS repost story, you will need to sign in to get started with your Instagram account. The main page shows you all the stories posted by your followers, but you can also search in the search bar for other users. Pick the desired photo or video, then click Save. The picture will appear in the Story Saver tab. Regardless of how you save a document, with the permission of the person who posted it, it is best to make sure that you do so. This is particularly important if the content is to be shared in your own story or feed.



SMART MOVES

Durust Daam' App to Counter OverPriced Commodities

Federal Information Technology and Telecommunications Minister Khalid Maqbool Siddiqui has launched the National Information Technology Board (NITB) mobile app "Durust Daam".

This App helps in controlling overpriced commodities. Islamabad's people will be able to know updated prices of essential commodities such as poultry, meat, fruits and other products through the "Durust Daam" app. This app also allows citizens to lodge complaints against shopkeepers who violate the prices listed. The Federal Minister for IT, speaking on the occasion, said that the "Durust Daam" App will be useful in terms of transparency and good governance. He said steps like this need to be taken nationwide.



FBR launches New Urdu Website to Facilitate Tax-payers

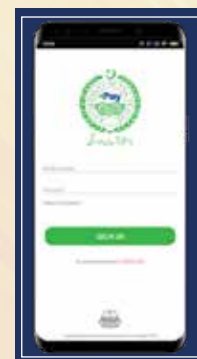


Chairman Federal Board of Revenue (FBR) Syed Muhammad Shabbar Zaidi has inaugurated the Urdu website of the FBR. The Urdu version of website has been launched to facilitate the taxpayers. The Urdu website offers online facilitation and services to the taxpayers about Income Tax, Sales Tax, Customs and FBR Maloomaat. The Urdu version contains special features which contain useful reservoir of information relating to taxation and customs. With the launch of Urdu website, the people can not only file their complaints in Urdu but can also seek responses of their queries in the national language. The website offers facilitation to the people to read the tax and customs laws and rules, SROs and circulars in Urdu language.

EPay Mobile Application

Punjab government has launched ePay Punjab, a mobile application for all the Business to Government (B2G) and Public to Government (P2G) payments in order to facilitate the public and improve the government revenue collection through easy payment collection.

The application was jointly developed by the Punjab Finance Department and the Punjab Information Technology Board (PITB). The mobile application would helpful in complete departure from the erstwhile and decades old payment process which involved physical visits to the collection offices around the province for tax payments.





Ray Kurzweil

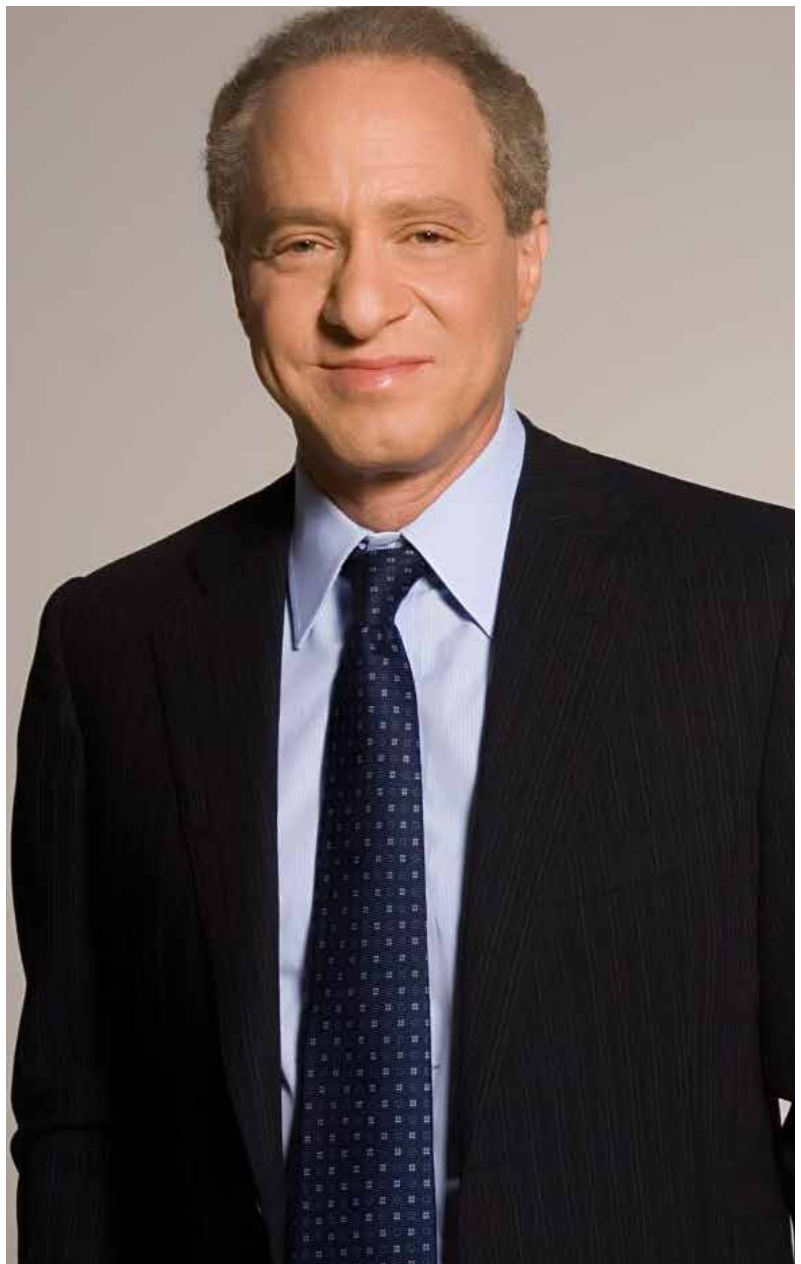
The rightful heir to Thomas Edison

Ray Kurzweil is one of the world's leading inventors, thinkers, and futurists, with a thirty-year track record of accurate predictions. Called "the restless genius" by The Wall Street Journal and "the ultimate thinking machine" by Forbes magazine, Kurzweil was selected as one of the top entrepreneurs by Inc. magazine, which described him as the "rightful heir to Thomas Edison." PBS selected him as one of the "sixteen revolutionaries who made America."

Kurzweil was the principal inventor of the first CCD flat-bed scanner, the first omni-font optical character recognition, the first print-to-speech reading machine for the blind, the first text-to-speech synthesizer, the first music synthesizer capable of recreating the grand piano and other orchestral instruments, and the first commercially marketed large-vocabulary speech recognition.

Among Kurzweil's many honors, he received the 2015 Technical Grammy Award for outstanding achievements in the field of music technology; he is the recipient of the National Medal of Technology, was inducted into the National Inventors Hall of Fame, holds twenty-one honorary Doctorates, and honors from three U.S. presidents.

Ray has written five national best-selling books, including New York Times best sellers *The Singularity Is Near* (2005) and *How To Create A Mind* (2012). He is Co-Founder and Chancellor of Singularity University and a Director of Engineering at Google heading up a team developing machine intelligence and natural language understanding.



"The profound aspect of technology is that once secrets are revealed, the magic doesn't disappear."

Nokia 7.2 : Another attractive mid-range smartphone from Nokia

Design and build quality

The Nokia 7.2 exudes a premium feeling the moment you lay your eyes on it. HMD Global has augmented the metal frame of this phone's predecessor with a new polymer composite that's said to be twice as strong as polycarbonate and twice as light as aluminum. The frame is slightly curved for a comfortable grip. The phone is light for its size and feels sturdy, something Nokia-branded phones have cultivated a reputation for.

This phone packs a 6.3-inch full-HD+ HDR 10-certified display protected by Corning Gorilla Glass 3. The display has a peak brightness of 500 nits and 1:1500 contrast ratios. The phone is claimed to be capable of upscaling SDR content into HDR in real-time. We found the display to be one of the Nokia 7.2's strongest suits. It is sharp and vivid, with good viewing angles and color reproduction. The brightness is also adequate and we did not have any issues using it under daylight.

Specifications and software

The Nokia 7.2 is powered by the Qualcomm Snapdragon 660 SoC. HMD Global offers the Nokia 7.2 in two variants – a 4GB RAM + 64GB storage model, and a higher-end 6GB RAM + 64GB storage variant. The internal storage on both is expandable by up to 512GB using a microSD card.

The phone stays running thanks to a 3,500mAh battery, and it supports 10W charging. On the software side, the Nokia 7.2 runs stock Android Pie, just like the rest of HMD Global's smartphone offerings.

Camera

Nokia and HMD appear to have paid a lot of attention to the Nokia 7.2's camera setup. It's an impressive-sounding triple-camera system with a 48-megapixel primary sensor, an 8-megapixel ultra-wide, and a 5-megapixel depth sensor.



The main snapper is assisted by an 8-megapixel wide-angle camera with an f/2.2 aperture and 118-degree field of view, and there's also a 5-megapixel depth sensor. On the front is a 20-megapixel selfie camera with an f/2.0 aperture, which is again a big jump from the 8-megapixel front snapper on the previous model.

This results in an incredibly flexible camera that, together with a fully featured camera app, covers most of the bases of a modern flagship.



PKR.47,500/-



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



Non-removable Li-Po
3500 mAh



6.3 inches



48MP+8MP+5MP

Pros

- Tidy and tough polycarbonate design
- Clean Android One software
- Flexible, impressive camera

Cons

- Night Mode ineffective

Final Verdict

Nokia 7.2 is a classy customer. We like its sleek but practical design and sharp display, while Android One continues to do wonders with relatively limited malware.

Easypaisa leads the country's digital financial transformation with many industry-first products and services to its credit

Jahanzeb Khan, Chief Strategy & Transformation Officer, Telenor Microfinance Bank



Recently, PhoneWorld got a chance to interview Jahanzeb Khan, Chief Strategy Transformation Officer at Telenor Microfinance Bank Limited. Jahanzeb Khan is a recognized global leader in digital and emerging technologies with 20 plus years of leadership experience in fin-tech. He is considered an expert in digital technologies and fin tech across the globe and has led the technology and digital space for largest global firms. Here is what he had to say about the fin-tech market of Pakistan and how Easypaisa became a success story.

1. Why did Pakistan need a product like Easypaisa at all?

Pakistan has been home to one of the world's largest unbanked populations. According to the 2017 index, Pakistan is home to 100 million adults without a bank account. But, the situation was worse in 2015 when Pakistan launched its National Financial Inclusion Strategy to achieve its financial inclusion goals. For most of us, it's hard to imagine living without a financial account, credit card, insurance, or a safe place

for our savings in today's increasingly digital world. But, for the underserved masses, gaining access to formal financial services and reliable sources of finance is an everyday struggle.

For the underserved masses, gaining access to formal financial services and reliable sources of finance is an everyday struggle





Being able to have access to a mobile financial account is a first step toward broader financial inclusion since a transaction account allows people to store money, and send and receive payments. Facilitating everyday life, access to formal financial services helps families and businesses plan things better, be it long-term goals or unforeseen emergencies. Being excluded from the financial system, especially in a developing country like Pakistan, also potentially results in exploitation of the poor and innocent at the hands of often unscrupulous informal sources of finance. This situation, plus the country's vision of a digitally and financially included Pakistan, called for an innovative, out-of-the-box solution which Easypaisa provided.

2. How is Easypaisa contributing to Pakistan's digital ecosystem?

Easypaisa triggered the digital transformation of Pakistan's financial services landscape that it leads till date

Easypaisa triggered the digital transformation of Pakistan's financial services landscape that it leads to date. It leveraged Pakistan's promising tele-density – which stands at a healthy 77% today – to deliver a swift, secure, and sustainable financial service to the underserved masses.

Becoming the pioneer of mobile banking in Pakistan, Easypaisa showed the industry and the government the right direction to move in and address the country's financial inclusion problem. Its immense success and rapid nationwide penetration inspired other banking and technology

players of the country to follow suit and introduce their own mobile banking versions. All this gave the country the support it needed to build a robust digital ecosystem and get closer to its digital and financial inclusion goals.

Easypaisa continues to digitalize the local financial services landscape through a mix of innovation, partnerships, and an unyielding resolve

Today, Easypaisa leads the country's digital financial transformation with many industry-first products and services to its credit. With empowerment of the Pakistani masses being high on its agenda, Easypaisa continues to digitalize the local financial services landscape through a mix of innovation, partnerships, and an unyielding resolve.

3. How is Easypaisa leveraging new technology to transform financial services in Pakistan?

Since its beginning, Easypaisa has been driven by technological innovation to bring more people into the fold of financial inclusion and make lives easier. From innovative use of a mobile phone in almost every hand to extend the benefits of technology to the underserved masses, to utilisation of advanced technologies to make the digital financial services ecosystem more robust, Easypaisa leads the way in the industry. Introducing the industry's first interoperability solution, Easypaisa expanded its outreach and enabled users of other cellular services to open a mobile wallet account and make swift and easy transactions. And to make these transactions securer and of larger amounts, Easypaisa introduced Biometric

Verification System (BVS), equipping its nationwide network of retailers and franchises with high-tech biometric devices. With an aim to boost Pakistan's trust in e-commerce and digital payments, Easypaisa introduced Easypay, the country's first digital payments platform.

The launch of Easypaisa mobile app was also a milestone achievement in the product's contribution to the local digital ecosystem. Progressing continuously, Easypaisa also integrated an advanced QR payments option, allowing users to go cashless and pay simply by scanning the QR code at different retail stores and outlets. Experimenting with new technologies and turning them into empowerment tools is what makes Easypaisa the industry leader; the launch of Pakistan's first blockchain-based cross-border remittance service in collaboration with AliPay is a simple proof of that very approach.

Introducing the industry's first interoperability solution, Easypaisa expanded its outreach and enabled users of other cellular services to open a mobile wallet account and make swift and easy transactions

4. In what other ways is Easypaisa empowering Pakistanis?

Driven by its empowerment vision, Easypaisa goes the extra mile to serve Pakistani people better and develop useful financial. Easypaisa account (mWallet) within 2 minutes conveniently without the need to visit a branch or fill out paperwork. Through respective partners, Easypaisa also introduced micro

health and life insurance products for the previously underserved millions. Furthermore, we are also geared to build a Digital Services Platform (DSP) in collaboration with Pakistan Microfinance Network (PMN) to digitize Pakistan's microfinance industry. The platform will enable Microfinance Providers (MFPs) to ride on the rail road of Digital Financial Service Providers with the twin objectives of increasing accessibility for clients and bringing efficiency through available distribution channel. The partnership will help the microfinance sector to achieve its goal of reaching out to 10m borrowers, 50m deposit accounts, and 11m insurance clients by 2020. Furthermore, there are 4.5 Million SMEs and micro SMEs of

which only 180K are formal borrowers. Easypaisa is providing access now to these credit starved micro SMEs and home based businesses to provide nano lending for their short term needs.

we are also geared to build a Digital Services Platform (DSP) in collaboration with Pakistan Microfinance Network (PMN) to digitize Pakistan's microfinance industry

Easypaisa is delivering a complete digital payments solution to the Pakistani youth through its innovative and feature-laden mobile app.



5. What is Easypaisa's urban and rural uptake like?

Easypaisa revolutionized the way payments were made in the country and it continues to do so. We have achieved a high measure of success in a short period of time. At present the total number of users is approximately 29 million. Of these around 39 percent are in 10 major cities which are Karachi, Lahore, Faisalabad, Rawalpindi, Gujranwala, Peshawar, Multan, Hyderabad, Islamabad and Quetta while the remaining 61 percent belong to the smaller cities and rural areas. This distribution of Easypaisa consumers mirrors closely the demographics mix of Pakistan. These numbers are quite encouraging as they show that demand for Easypaisa is not only high but that people trust us when it comes to fulfilling their important financial needs.

6. What does the future hold for Easypaisa and the local financial services landscape?

We envision a promising future for Easypaisa and the financial services landscape in Pakistan. The masses are fast realizing the convenience that FinTech is bringing in their lives. Those who couldn't open a bank account are now easily making transactions and are enjoying access to loans and insurance facilities. Standing in long queues is a thing of the past and hundreds of thousands of pensioners and beneficiaries of poverty alleviation programs are now receiving their entitlements directly in their mobile wallets or through one of the 75,000 retailers spread across the country. FinTech is bringing freedom and quality of life to people and the society is embracing it wholeheartedly.

Tele-density is going to play a huge role in determining the future of financial services in Pakistan and we are lucky to be faring very well in that area with the current 77% mobile uptake. According to GSMA's recent study 'The Mobile Economy', 700 million new cellular subscribers are expected by 2025 globally with 4% of the new subscriber base to be originated from Pakistan. Mobile connectivity will bridge the gap between the physical and digital divide. High tele-density, NGMS reaching 72 million subscribers and smartphone penetration are to collectively help both Easypaisa and Pakistan reach their financial inclusion and digitalization goals more effectively and in a swifter way.

7. What more does Pakistan need to do to boost FinTech and achieve its financial inclusion goals?

In developing countries like Pakistan, FinTech is making its way into the market thanks to the user-friendliness it features. The Easypaisa model is an example here where digital literacy of the masses did not stand in the way of a mass-scale uptake. In fact, FinTech is expected to significantly impact Pakistan's economy in the long run as a McKinsey Global Institute report titled 'Digital Finance For All: Powering Inclusive Growth In Emerging Economies' projects that adoption of financial technology in Pakistan will add 93 million bank accounts and \$36 billion a year to the country's GDP by 2025. For greater uptake, the financial technology needs to be intuitive and user-friendly and must be built with low financial and digital literacy levels in mind. Fulfilling unmet needs of our millennials and enabling them to

do their jobs easier will help propagate financial inclusion. A robust and larger digital financial payment ecosystem is the need of the hour

McKinsey Global Institute projects that adoption of financial technology in Pakistan will add 93 million bank accounts and \$36 billion a year to the country's GDP by 2025

for which Easypaisa is working relentlessly. There must also be digital and financial literacy programs that run on a national level and teach the workings and need of a digital financial system. Partnerships can also play a great part here as technology players can join forces to assess current trends and needs to build smarter

solutions. Adequate merchant value proposition needs to be in place for retailers to encourage digital payments. Initiatives like micropayment gateway with same day settlements and easier merchant onboarding policies that SBP has recently published will help the sector.

There is a scarcity of viable aggregators in Pakistan in multiple sectors like agriculture, health and education; incubators and venture capitalists can help inject capital in FinTechs to flourish early start-ups that can subsequently be integrated into a digital ecosystem. Policies need to be in place to empower women and reduce exploitation by providing them financial freedom. They should be able to open their financial accounts independently with simpler customer journey and improved KYC requirements.



Infinix S5: Handy Cameras on a budget

Design and display

The design of this smartphone is quite reminiscent of the previously launched Infinix S4. But instead of the waterdrop notch, the new smartphone gets a trendier punch-hole camera. It also features a big 6.6-inch HD+ display.

There is a thin bezel on the right, left and top sides of the display. But similar to other Android devices, the bottom bezel is rather thick. The back of the device is made up of reflective polycarbonate, and it sports what the company calls 'Crystal Feather' pattern design. There are two colors to choose from – Quetzal Cyan and Violet.

The 6.6-inch display upfront boasts an HD+ (1600×720 pixels) resolution and 20:9 aspect ratio. The punch-hole design allows the device to offer a screen-to-body ratio of 90.5 percent. The display of the phone is quite bright, and I had no complaints about the legibility under direct sunlight. It also offers good vibrant color reproduction, contrast. While it is bright during the day, there's an eye-care mode for those who prefer using the device deep into the night.

Performance

The budget device comes with a MediaTek Helio P22 SoC under the hood. Accompanying the chipset is 4GB of RAM, and 64GB expandable storage. In general use, the performance of this phone is surprisingly good, and multi-tasking was no problem at all.

Phone security is taken care of by a fingerprint sensor at the back. There's also an option for a built-in face unlock feature. Both are quite accurate and worth relying on. Overall, the smartphone does not disappoint when performance is concerned.

Software and Battery

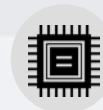
The Infinix S5 smartphone runs Android 9 Pie-based XOS 5.5. The company's custom UI comes with a host of preinstalled apps and games. Fortunately, many of them can be uninstalled. There are also some user-centric features like bike mode, one-hand support, game mode, do-not disturb, eye-care and book reading to name a few. Making sure everything ticks is a 4,000mAh battery. It is good enough to offer a full-day worth of battery life on moderate usage. Bundled is a 10W charger, and it takes over two hours to fully charge the battery.



Camera

Talking about cameras, the Infinix S5 boasts a quad-camera setup at the back. This setup includes a 16-megapixel sensor, a 5-megapixel wide lens, a super macro lens, and a depth sensor. The company has also added a quad-LED flash on the rear. On the front, you get a 32-megapixel AI selfie sensor with f/2.0 aperture.

The smartphone's camera clicks good pictures in daylight condition. The AI helps give a further boost to the image output as it can automatically detect the scene and lighting. The front camera takes a fairly good selfie in good light conditions.



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



Non-Removable Li-Po
4000 mAh



6.6 inches



16MP+5MP+2MP

PKR.23,999/-

Pros

- Latest Android
- Great camera
- Longlasting Battery
- Dedicated memory slot

Cons

- No wireless charging
- Display ppi

Final Verdict

For its price, the smartphone offers a lot that will keep buyers happy. It is a smartphone for those needing a device with a set of capable and versatile cameras.

Vivo NEX 3, the Supreme Gaming Smartphone at PUBG MOBILE Club Open 2019 Fall Split Global Finals

Vivo, the official title sponsor for the PUBG MOBILE Club Open 2019 Fall Split Global Finals empowered gamers during the competition held in Kuala Lumpur, Malaysia from 29 November to 1 December 2019. This time round, the leading technology company featured its high performing smartphone – NEX 3 provided smooth gameplay that empowered the top 16 teams as they compete to grab a slice of the USD 2.5 million total prize pool.



NEX 3 is the latest addition to Vivo's premium flagship NEX series and is designed to showcase the brand's dedication to innovative design and technology, which boost gamer performance even during the most intense mobile gameplay. NEX 3 brings the latest gaming optimization features and upgrades to empower gamers.

NEX 3 provides upgraded gaming features through powerful functions such as the Multi-Turbo Engine that combines Game Turbo, Center Turbo, Cooling Turbo and AI Turbo to bring gamers a truly immersive gaming experience.

The NEX 3 features a Turbo Mode which is specifically tailored for PUBG MOBILE. When the function is turned on, it displays optimization features that support HDR + extreme and deliver a stable high frame rate. This is also an exclusive feature to result from the partnership between vivo and PUBG MOBILE Club Open 2019.

The phone also features Ultra Game Mode which turns off messages and alerts, allowing gamers to focus all their attention on winning.

The dual WLAN Acceleration technology in NEX 3 uses dual WiFi signal networks at the same time to boost network speed, offering smoother performance without jitter or delay. This is vital for gamers especially when playing PUBG Mobile. NEX 3 connects 2.4GHz and 5GHz WiFi and uses advanced algorithms to intelligently assess network status to reduce mobile network delays and increase download speeds. When the Dual WLAN Acceleration technology is enabled, it provides a significantly improved gaming environment.

NEX 3 increases download speeds up to 1500+Mbps and upload speeds to 140+Mbps. According to lab test, the average latency drop is 25% which allows an even smoother gaming experience. Powered by Snapdragon 855 Plus, and UFS 3.0 high-speed flash memory, NEX 3 provides top of the range computing performance, smooth multitasking capabilities that can increase read and write speeds by 79% over UFS2.1. NEX 3 is also equipped with 8GB+256GB storage.

NEX 3 comes with a 4500mAh battery and supports 22.5W Vivo FlashCharge and C-DRX power-saving technologies that greatly improves the device's overall battery life and allow users to recharge in short time.



Jazz World Empowers Over 3 Million Active Users

Jazz, Pakistan's leading digital communications company, celebrates another milestone with Jazz World crossing three million monthly active users and more than one million daily active users.



Jazz World, a customer engagement platform, was released on iOS and Android in January 2019 to offer a variety of services to its subscribers. These include checking prepaid mobile balance and postpaid bills, ability to recharge account, pay phone bills, and access usage history along with information on the best packages. The platform also allows subscribers to submit complaints, buy SIMs and much more.

Commenting on this achievement, Jazz Chief Executive Officer Aamir Ibrahim said, "Jazz has always been at the forefront of serving its customers through delivery of innovative services and features. Continuing its journey as the largest digital communications company, Jazz is proud of its customers' acknowledgment who have helped Jazz World grow to its current level. We are grateful to all of our customers and hope that they will continue to repose their trust in us."

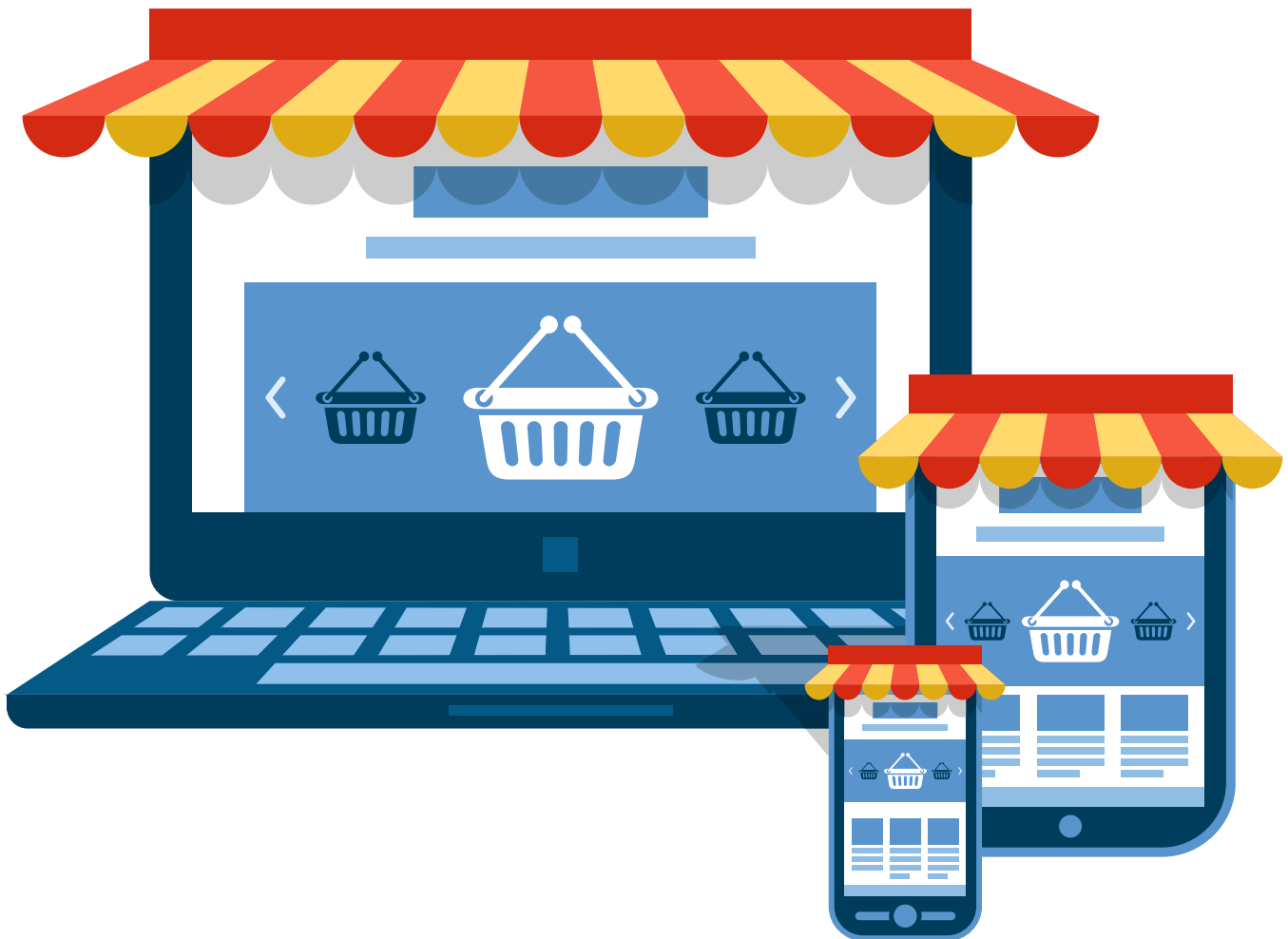
"Achieving three million monthly active users is a testament to the rising popularity of the platform. Our focus has been to continuously provide the best customer centric digital products. We thank our customers for trusting us and being part of this journey," added Jazz Chief Digital & Strategy Officer Aamer Ejaz.

Jazz World is now the fastest-growing Pakistani digital platform. The platform is also enriched through its best in class user experience which was developed after continuous feedback from our customers. Engagement features like daily rewards, cricket updates and Ramzan timings have been well liked by customers. Jazz World can also be accessed in Urdu language.

Jazz World can be downloaded from Google & Apple app stores and is available for both postpaid and prepaid customers.



Rebuilding Pakistan's economy through E-commerce



E-Commerce is basically commerce that exists in the online world. It involves online sale, purchase, information and money flow, business dealings and transactions etc. In short, all the economic activity that is catered and directed through the internet comes under the banner of E-commerce. E-commerce today encompasses the entire business world today. It provides the cheapest and most efficient services that may be assumed to be irreplaceable now.

Uses of E-commerce involve online banking, business transaction, buying and selling services, electronic data interchange, data collection business to business e-commerce(B2B), Business to consumer e-commerce (B2C), digital wallet, document automation in supply chain and logistics, electronic tickets, enterprise content management, internet security, online auction, online office suites, social networking, teleconferencing, virtual assistance(AI) and domestic and

international payment systems. E-commerce has taken a significant and yet irreplaceable position in the business world; whether it be business dealings or household transactions, e-commerce facilitates parties from both ends. Especially, with the arrival of Blockchain technology, the future of e-commerce has become even more promising.



E-commerce can create a dynamic business world

E-commerce has revolutionized the local market and evolved it into a global marketplace with no geographical boundaries. It has the potential to introduce a small-scale local business to the global audience and give opportunities of unlimited growth. E-commerce has made the business world dynamic which means that it helps us identify what the next market trend might be and the right time to make an investment.

In FY18 Pakistan's E-commerce industry has been estimated to be at PKR 99.3Bn which raised from PKR 51.8Bn in FY17, with YoY growth of 92%. With a population of approximately 208Mn and several financial inclusion solutions in terms of branchless banking, Pakistan offers one of the largest untapped markets in the world for E-commerce. Although, the country has about 71.71Mn broadband subscribers and 69.64Mn 3G/4G subscriptions, E-commerce has still not reached to a level where electronic money is predominantly used in place of cash for such transactions. Hence, there is still a lot of room for growth. The pace at which e-commerce market and awareness is growing a time is near when Pakistan will become one of the leading countries in the local and international e-commerce market.



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E-commerce is a cost-effective method of business for retailers

E-commerce markets means a virtual setup of the business. We can all imagine the magnitude of impact it may have by saving our space, energy, investment cost and labour. As far as retailers are concerned, e-retailing tend to generate more profit than the traditional retailing as it offers products to a greater audience, at a lower price due to the reduced investment cost and with more convenience. Moreover, Traditional retailers base their prices on store traffic and the cost to keep inventory.

A drawback for E-retailers here may be that they cannot offer a physical store to gain trust and quality check whereas, traditional retailers may have a physical existence of their brand and also sell it online which not only gives them a much wider audience but also helps them gain trust and convince customers easily to buy their product online.

E-Commerce can create 4 million jobs in Pakistan by 2025

Where E-commerce is cutting onto digitally unskilled employment, it is also offering new opportunities to digitally skilled employees to not only work locally but internationally without having to move. Skills like web development and maintenance, social marketing,

and digital marketing are in high demand in the world of e-commerce. Moreover, online businesses demand for huge warehouses which need to be maintained and require a check and balance. Hence a dramatic increase in cost of business.

E-commerce has made being digitally skilled a necessity. There is almost no good job that doesn't involve computer work and technological knowledge. There are about 102, 8646 companies that are registered in Pakistan while the number of unregistered companies is beyond comprehension. However, even fewer have their websites, serving the functions of cross-border trade or even social media existence. The government should promote website presence to small and cottage industries, which are estimated to be 3Mn SMEs in Pakistan, majority of them operating in the informal economy. The government can initiate a website development program and plan training workshop for these companies. In this way companies will get an online recognition, whether it be a proper website or any global E-commerce platform. In this way they may be able to generate around PKR 6,000 per day from their online selling which unanimously adds around \$ 1Bn annually to the Pakistan's economy.

E-commerce may prove to be a very strong weapon against unemployment for Pakistan. Pakistan can increase its GDP by \$ 36Bn and create 4Mn jobs by 2025 only by increasing the use of digital financial services. According to several estimates the online portals such as Daraz.pk could alone create 1Mn, direct and indirect jobs by 2022. Hence, e-commerce can be viewed as the

greatest investment opportunity by the Prime Minister of Pakistan to fulfil his words of providing 10Mn jobs for Pakistan's youth.

Pakistan can increase its GDP by \$ 36Bn and create 4Mn jobs by 2025 only by increasing the use of digital financial services

E-commerce makes the supply Chain process easier and much effective

E-commerce directly effects three flows of a supply chain namely physical flow, financial flow and information flow. Physical flow is affected by how the products may be purchased and sold internationally and nationally without having to travel in person from one place to another. You want to see and import things from China in bulk, you need not to travel to China to do so anymore, just visit 'Ali Baba', negotiate with a dealer of your choice, order a sample of the product and close the deal for your wholesale product to be delivered and it is all at one place in a mobile app by the grace of E-commerce. E-commerce affects the financial flow by making money transactions more simple, secure and fast. Also, the technology is in charge between the two parties to keep ledger of all the transactions and to ensure safe dealing. Information flow has been the most affected part of the supply chain so far. As we can share, store and receive all information without any doubt. Business conversations and data sharing is also a matter of a click. This makes it easy to join both ends of the supply chain in a strong, secure and well-calculated knot.

Pakistan's current annual exports are around \$24Bn; with e-commerce, Pakistani businesses

can expand their market further and enter the untapped markets where demand of their products is high. This could help solve the country's economic troubles.



Pakistan's current annual exports are around \$24Bn; with e-commerce Pakistani businesses can expand their market further and enter the untapped markets where demand of their products is high

E-commerce creates unlimited options for consumers

E-commerce is a platform to compare prices, judge items by their reviews before purchasing also, a wide variety of brands and products are all at one place to choose from. This means that they have a greater control over what they purchase.

However, the drawback of online sales and purchase is the poor judgement opportunity of the product before purchasing it. But as we all know reputation is all that matters in e-commerce. They may be able to trick us once, but they won't get a second chance indeed! But it seems like technology won't let that happen any longer. Tommy Hilfiger have started adding Virtual Fit platforms to their e-commerce sites to reduce the risk of customers buying the wrong sized clothes, although these vary greatly in their fit for purpose!

E-commerce can boost tourism industry

Pakistan consists of the most scenic beauty waiting to be explored. Through e-commerce world's attention can be gained. Pakistani tour operators, flight and car services, hotels, and the whole tourism economy can benefit from the adoption of cross-border E-commerce by getting listed on worldwide tourism sites such as Booking.com, Trip advisor, Expedia and Travelocity(to name a few) and then doing digital marketing by the use of social media to drive international tourists to Pakistan. This may help promote tourism here and provide Pakistan with an additional source of foreign income to benefit from. This may also revive the spoiled image of Pakistan internationally and open doors to investors.

The whole tourism economy can benefit from the adoption of cross-border E-commerce by getting listed on worldwide tourism sites such as Booking.com, Trip advisor, Expedia and Travelocity to drive international tourists to Pakistan

Establishing online business, integration of preferred international payment options, cross-border delivery and after sales service are the four main steps on getting started and being successful with international E-commerce. Pakistan also needs to focus on enhancing its product variety and value addition levels, as future of manufacturing is 3D printing, artificial intelligence, robotics and data analytics, otherwise it will be further left behind in the international market.

PTCL launches Campus Ambassador Program 'Safeer'

Pakistan Telecommunication Company Limited (PTCL) has launched its new initiative called 'PTCL Safeer' (Ambassadors), which is based on the concept of a Campus Ambassador Program and is an integral part of PTCL's transformational journey. The objective of the program is to bridge the gap between the Corporate Sector and Academia across Pakistan.



PTCL HR team, in collaboration with the placement offices of various universities, have selected 'Safeers' through a fair and transparent process from a pool of students provided by the universities. The selected students went through an orientation and training workshop at the PTCL offices, where their roles and expectations were outlined.

Speaking on the initiative, Syed Mazhar Hussain, Chief Human Resource Officer, PTCL, said, "We are committed to support the education system in Pakistan by providing an enabling platform to young and bright students, who are the future of our nation. The Safeer program will provide first-hand professional experience and understanding of how companies work in real time. It will surely help these students to pave the way towards a better career prospect and growth."

A Safeer is the flag-bearer of PTCL's employer brand, which is based on the concept 'Growth Tree – Lets Grow Together' and acts as the first point of contact for students at the University for supporting them and guiding them to the right platforms. Safeers also work with the PTCL HR Team in executing other tasks in their respective university campuses.

As part of this initiative, Safeers organized and arranged talks of PTCL's senior management that were motivational and experiential on diverse topics in the universities. Moreover, this program offers students the opportunity to do their final year projects based on PTCL's real-time business scenarios. Through such initiatives, PTCL aims to provide the right platform for growth, skills development, and decision-making ability, execution of real-time projects and capacity building of students.



Huawei Y9s: A Mid-Range Smartphone with some Extraordinary Features

Design

Huawei Y9s sports a curved glass back, which makes it appear and feel quite premium. Thanks to a pop-up selfie camera, the display is without a notch or a punch-hole camera to block it. The sides are made of aluminum, which gives a sort of strong grip to the phone while the indented home button doubles as a fingerprint sensor supposedly provides users with a “one-touch” unlock.

Display

Y9s has LTPS IPS LCD Capacitive multi-Touchscreen. The size of the screen is 6.6 inches. The resolution which it provides is 1080 x 2340 Pixels. With 84.7% screen-to-body ratio, the bezel is quite minimal. Along with that, it has vibrant and bright colors.

Camera

The Huawei Y9s has a triple rear camera setup which includes a main 48MP f/1.8 wide-angle camera, a secondary 8MP f/2.4 ultra-wide camera, and finally 2MP f/2.4 depth sensor. The selfie camera, on the other hand, is a motorized pop-up at 16MP f/2.2.

The fact that it's a pop-up camera doesn't diminish it as a good selfie shooter, though. It captures sharp selfies and can even retain a lot of clarity of the background. As for its rear shooters, the Huawei Y9s comes with a triple-camera setup. On top is a 2MP depth camera to provide that bokeh effect for when you shoot with the 48MP main shooter.

The cameras do a good job. Pictures on the main camera come out sharp on the daytime shots, with good details and colors, plus nice contrast. The wide-angle lens is also solid. Daytime shots come out



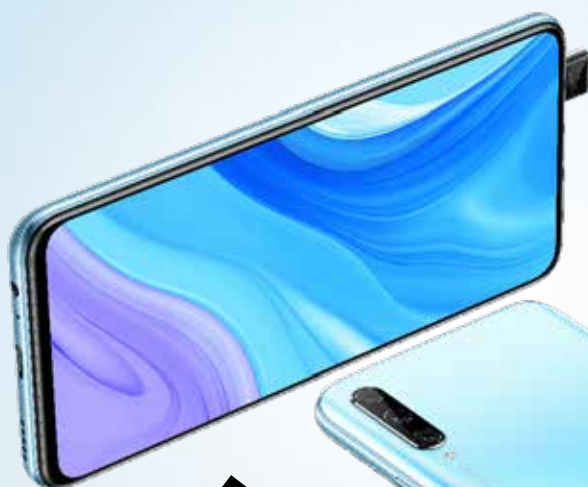
with equally good details and contrast, and there's little to no warping on the sides of the image.

The phone also does well in low-light shots. It's not devoid of noise, but it does provide for decent low-light pictures without sacrificing too much in detail.

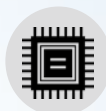
Performance

Huawei Y9s is equipped with an Ultra FullView LCD screen with a resolution of 1080 x 2340 pixels and 391 PPI density at a ratio of 19.5:9. You can expect visuals to be of decent quality with vivid colors and sharpness. The chipset is an octa-core Kirin 710F with a Mali-G51 MP4 graphics processor where apps and games can run quite smoothly. The battery is a large 4000 mAh unit, which will last a full day with moderately heavy use - this is great for those who are always out and about for long hours.

The operating system in Huawei Y9s is Android 9.0 (Pie). The user interface UI is EMUI 9.0. The memory configurations are 6GB RAM and 128GB ROM including a memory card slot, which allows you to expand the storage up to 512 GB externally. This effectively means, the Y9s can store up to almost 640GB of data, rivaling the capacity of certain notebooks in the market.



PKR.42,999/-



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



Non-Removable Li-Po
4000 mAh



6.59 inches



48MP+8MP+2MP

Pros

- Notch less, almost bezel-less screen
- Long-lasting 4000 mAh battery
- The pop-up selfie camera is robust and hides when fall is detected

Cons

- Average Selfie camera
- No fast charging

Verdict

Yet another mid-ranger, which does all the basics at an affordable price.

Year **2019** in a glimpse

1. **Zong, China Mobile Pakistan (CMPak) successfully conducted 5G trials.**

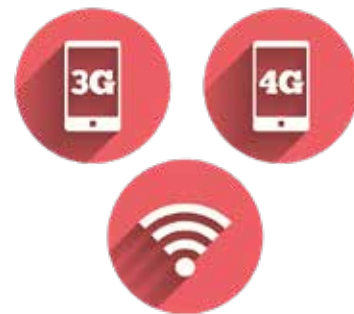


3. **Mobile license renewal Saga far from over.**



2. **Cellular Subscribers in Pakistan reached 163 million with 73 million 3G/4G subscribers.**

DIRBS success story crossed the borders, Indonesia and Malaysia asked PTA to support them in introducing DIRBs in their respective countries.



4. **According to statistics from the media, the commercial import of mobile phones increased by 110 percent in one year. In 2018, 9,564,424 mobile phones were imported, whereas, in 2019, the number stands at 19,834,465 mobiles.**





5. Pakistan has been ranked among the top 10 countries that showed the fastest growth in open-source development around the world.



7. Motorola Relaunches in Pakistan with introduction of two models named MOTO E6 PLUS and MOTO ONE MACRO in near future.



MOTOROLA



6. Aqsa Kausar, a talented alumni of School of Electrical Engineering and Computer Science (SEECS) NUST, has become the first female Google Developer Expert in Machine Learning from Pakistan.



8. Pakistan Citizen Portal (PCP) secured the second place in top three Best Mobile Government Apps out of over 4,600 entries at the World Government Summit held in Dubai.



9. With a delay of more than three years, the Federal Cabinet approved the much-awaited first-ever e-commerce policy framework.



10. Jazz Celebrated 25-Year Anniversary in Pakistan.



Smartphone accessories manufacturer, Riversong, eyeing Pakistan market after huge success in Middle East and Africa

RIVERSONG, a leading premium smartphone accessories manufacturer, is seeking to broaden its regional footprint with its entry into Pakistan market following the region's unprecedented growth in smartphone sales over the last few years. Pakistan has been experiencing a growing appetite for smartphones, as well as mobile accessories, which is being fueled by rising disposable incomes and device affordability.

RIVERSONG's devices with cutting-edge technology, housed in attractive cases, are the perfect lifestyle partners that one would love to flaunt. RIVERSONG is committed to bring premium products with people-oriented designs and excellent customer services with a vision to become a brand that deserves your love.

According to the RIVERSONG's Global COO - Sales, Syed Ali Yousuf, this rising smartphone usage in the region has accelerated the growth of the relatively new segment. This, provides an opportunity for RIVERSONG to penetrate the regional market with its unique and premium qualitative products with best possible pricing.



"We come across many mobile accessories brand being sold in the market without correct specifications which is risk oriented and may spoil the phone health. To overcome this, our mission is to introduce RIVERSONG to the people of Pakistan which will offer them qualitative branded products with real specifications in affordable prices".

"It is encouraging to see a thriving smartphone market in Pakistan. This development has now paved way for the growth of the smartphone accessories segment. And as a result, we are now seeing more consumers looking to enhance their smartphone experience using different accessories as well as protect their devices from harm or damage." Says, Syed Ali.

"We are aiming to target 20% of the market share in Pakistan by end of 2020. Our competitive product portfolio, ranging from basic smart accessories to smart devices, are indeed a perfect fit the region's constantly evolving demands." noted Syed.

The accessories manufacturer is also seeking to expand its global reach by establishing its presence in over 35 countries by the end of 2020.



OPPO RENO 2 F: A GREAT PHONE WITH AMAZING FEATURES

Design

At first glance, the Reno 2F looks similar to the Reno 2. It comes in two colors, namely Lake Green and Sky White. There is a ridge pattern all over the rear. You don't get to feel its texture, though, as the Reno 2F's back is protected by Gorilla Glass 5.

Similar to the standard Reno 2, the Reno 2F's cameras are stacked vertically on the center rear. The ceramic O-Dot is also present, but instead of sitting below the cameras, it's now located above them.

The Reno 2F also has a pop-up camera module, but it doesn't adapt to the shark-fin design of the original Reno and the Reno 2. It's your standard pop-up camera, and it lights upon rising and falling back into place. The light effects can be changed into several colors, or it can also be randomized if you can't choose a particular hue.

Display

The Reno 2F is equipped with a 6.5-inch FHD+ AMOLED display, with a resolution of 2340 x 1080. The colors are accurate and punchy, as is the experience with AMOLED panels. Using the smartphone under direct sunlight is also manageable. The Reno 2F also has a full-screen, notch-less display. Similar to the rear, the display is also protected by Gorilla Glass 5.

Performance

As with the standard Reno 2, the 2F also has ColorOS 6.1 based on Android 9 Pie as its operating system. Storage-wise, the Reno 2F only has one offering in 128GB, but users may expand it up to 256GB via the microSD card slot. MediaTek Helio P70 runs as the 2F's chipset, paired up with Mali-G72 GPU and 8GB of RAM.

Juicing up the 2F is a 4,000mAh cell with 20W VOOC 3.0 Flash Charging support. The PCMark battery test gave the 2F 10 hours and 40 minutes, while in our standard video loop test, the 2F totaled 22 hours and 8 minutes of playback.



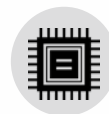
The Reno 2F executed basic tasks well, whether it be taking photos, browsing social media, navigation, messaging, and the like. An in-display fingerprint scanner and face unlock recognition are the 2F's biometrics options that are both quick and accurate.

Camera

The Reno 2F boasts a quad-rear camera setup comprised of a 48MP primary, 8MP ultra-wide, 2MP monochrome, and 2MP depth lenses. Meanwhile, located inside the pop-up mechanism is a 16MP shooter.

For the rear cameras, the colors come out a little more saturated than real life. The dynamic range is good as well, and contrast is decent too. In ultra-wide mode, the colors turn slightly colder than the images taken with the primary camera. In Night Mode, there's less noise and overall more balanced. In portrait mode, subject-background separation is similar to selfies in the way that it's a hit or miss, depending on the lighting.

For videos, the Reno 2F can shoot up to 1080p at 30fps. Quality isn't the best, but stabilization is indeed present.



128GB Built-in,
8GB RAM
Octa-core



Non-Removable Li-Po
4000 mAh



6.5 inches



48MP+8MP+2MP+2MP

PKR.59,999

Pros

- Colorway
- Pleasant audio quality
- Good battery life

Cons

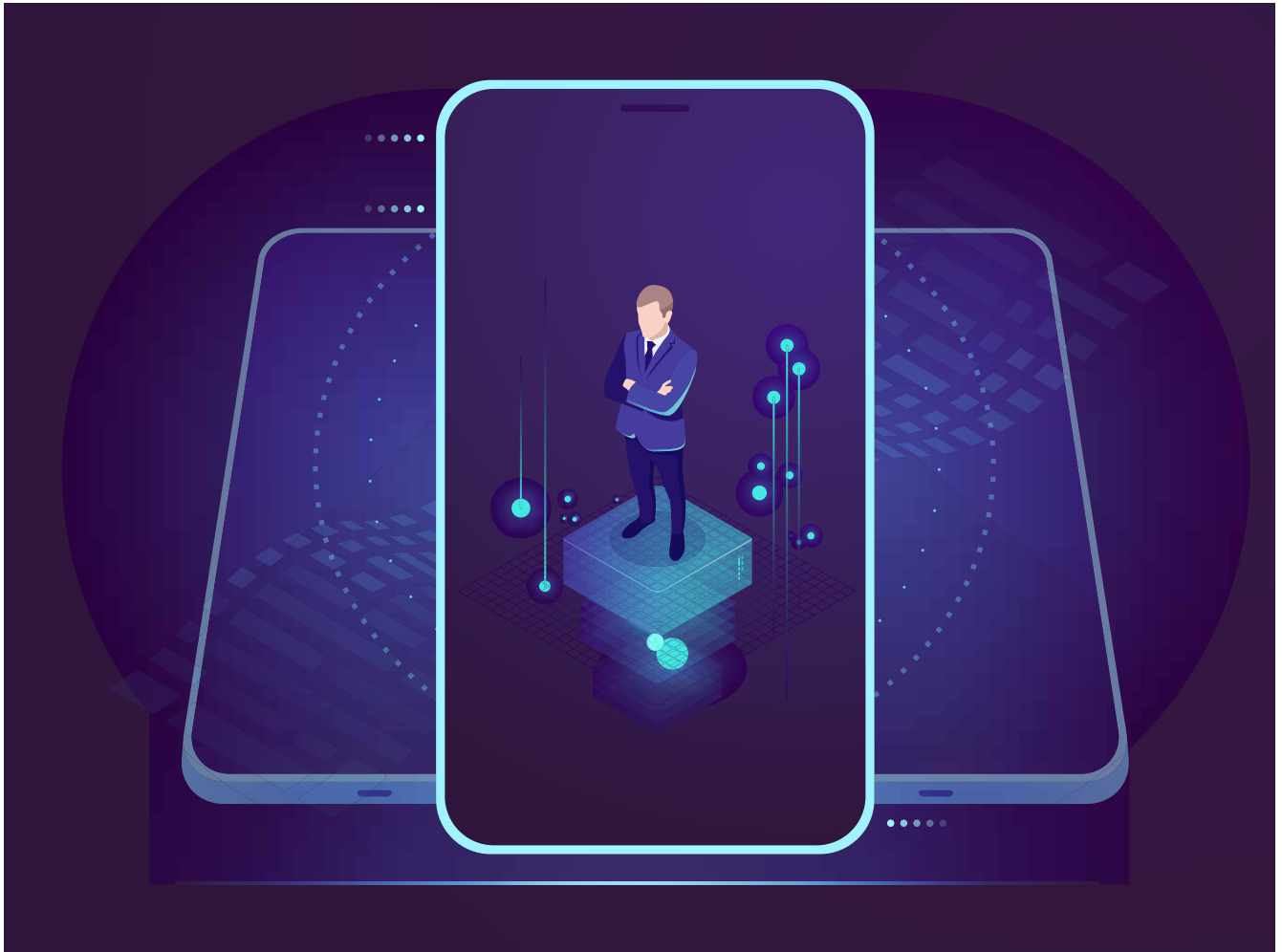
- Average-looking selfies

Verdict

Just like any smartphone out there, the Reno 2F has its highs and lows but overall, it is a decent phone at this price mark.

By Fizza Atique

Pakistan's First Mobile Phone Policy: A Journey from consumer market to producer market



The mobile phone industry has grown to become one of the biggest manufacturing sectors in the world. The Pakistan mobile phone market is estimated at 53 million units annually. This makes Pakistan one of the top 10 global markets for feature phones and smartphones. The sales value of mobile phones in Pakistan was estimated at Rs 366 billion in 2019. This makes the industry bigger than the automobile sector, with sales of Rs 360 billion in 2018.

The mobile phone manufacturing industry is now moving out of China as governments around the world are incentivizing local manufacturing through tariff measures that encourage a transition from CBU imports to SKD assembly followed by CKD assembly and ultimately targeting mobile phone exports to respective countries. This has created a great opportunity for other countries to set up their own industries. Vietnam, India, Indonesia, and Bangladesh are

leading this transition. Since 2017 a large number of local and global assemblers have sprung up, replacing CBU imports and creating an ecosystem for CKD manufacturing and localization.

The Pakistan mobile phone market is estimated at 53 million units annually. This makes Pakistan one of the top 10 global markets for mobile phones

Status of Local Mobile Manufacturing in Pakistan

Pakistan, based on the size of its domestic market, is ideally placed to leapfrog into the high tech area of Electronics and ICT industry. After the successful implementation of the DIRBS in 2019, the possibilities of illegal CBU imports have been eliminated making it possible for FBR to alter customs duties without any fear of escalation in smuggling of CBU mobile phones. However, unfortunately, the current tariff regime is unfavorable towards local manufacturing. As per the Customs Tariff 2019-20, it is more feasible to import a CBU mobile phone as compared to assembling it in Pakistan. Currently, 26 companies have been awarded manufacturing licenses by the PTA.

After the successful implementation of the DIRBS in 2019, the possibilities of illegal CBU imports have been eliminated making it possible for FBR to alter customs duties without any fear of escalation in smuggling of CBU mobile phones

In order to promote the local mobile industry, the government has started working on its first mobile policy to promote local manufacturing in Pakistan. As per the draft, the policy envisages incentives for local manufacturing/assembly of mobile devices which will expectedly shift the focus from import of mobiles in completely built conditions to semi-knocked down (SKD) and completely knocked down (CKD) condition.

The policy envisages incentives for local manufacturing/assembly of mobile devices which will expectedly shift the focus from import of mobiles in completely built conditions to semi-knocked down and completely knocked down condition

This policy will act as a milestone in the field of information and technology. The production of mobiles in Pakistan will have an immeasurable impact, as it will ultimately reduce the costs of mobile and strengthen the economy and the mobile eco-system. The policy is mainly focusing on employment generation, import-substitution, and technology transfer. The revenue

collection through imports will be substituted by the import of CKD kits at subsidized duty structure and enhancement of duty on CBU imports, thus making local assembly/manufacturing feasible vis-à-vis imports CBU condition. It is also suggested that duties on the parts be reduced and certain benefits offered for manufacturing of the parts so that the mobile sets assembled through SKD and CKD become cheaper than the mobile sets imported as completely built units (CBU). This local mobile manufacturing policy also focuses on substituting import products and technology transfer.

The production of mobiles in Pakistan will have an immeasurable impact, as it will ultimately reduce the costs of mobile and strengthen the economy and the mobile eco-system



Phases of the Policy

The policy will be implemented in three phases, which are as follows

1. In the first phase, the assembly of semi-knocked down and completely knocked down units will be allowed.
2. In the second phase, domestic manufacturing of mobile phones will be allowed.
3. In the third phase, the manufacturers will be permitted to export their products.

Due to the incentives offered under this policy, all international mobile brands, big and small, will be attracted to invest in Pakistan. The policy envisioned incentives for domestic manufacturing and assembly of mobile devices, which will shift focus from the import of entirely built mobile phones to semi-knocked down and completely knocked down units. Local mobile manufacturing will result in less dependence on foreign countries for primary domestic needs. It will also reduce foreign exchange and will increase in foreign investment. It will also help in reducing the illegal mobile imports which is the primary concern of Pakistan these days.

When the status of Pakistan will change from the consumer market to the producer market, the overall image of the country will be improved

When the status of Pakistan will change from the consumer market to the producer market, the overall image of the country will be improved. Local Mobile Manufacturing Industry will also promote and benefit other industries like software, packaging,

accessories, component manufacturers and R&D. The best thing is that locally assembled mobile phones will replace the costly imported sets to make mobile purchases easier for everyone. After the policy is implemented, the tariff structures for local assembling and manufacturing will be lowered and at the same time, smartphone manufacturing will lower imports.

Due to the incentives offered under this policy, all international mobile brands, big and small, will be attracted to invest in Pakistan

It's good that the Government is finally pushing the local manufacturing in the country. However, to promote local mobile manufacturing in Pakistan. The Government should work on providing a favorable environment to the tech giants. It should also look upon cutting the import duties and build a strong modern infrastructure of highways and airports to attract new foreign investment, generate employment and make Pakistan a global player in electronics manufacturing. A proper framework should be drafted to ensure a secure business environment for investors through a stable policy and incentive system. The Government should also ensure subsidized electricity and power facilities.





Once mobile manufacturing business flourishes in Pakistan, it will not only allow us to cater to the local needs but if things go right, we will also be able to offer our products to other smaller markets of the region as well

Once mobile manufacturing business flourishes in Pakistan, it will not only allow us to cater to the local needs but if things go right, we will also be able to offer our products to other smaller markets of the region as well. There is no shortage of opportunities and talent but due to the non-availability of a supportive

environment, we lag behind in this industry. We not only need friendly government policies to motivate businesses to invest in this industry but at the same time, we also need to build infrastructure and minimize the cost of finance especially of power and water that are key to electronics manufacturing.



TELECOM CAMPAIGNS

Alfa by Bank Alfalah

This TVC features Faisal Qureshi who reveals the balance load service with Alfa App. The advert is light and humorous accompanied by loads of information regarding the app and the overall procedure of service. The acting and music have done justice with the advert. Overall, the ad is well-produced and well-acted.

Verdict: five out of five



Ufone Super Card

The concept behind this TVC is superb and well-conceived. It shows the ever-growing inflation in Pakistan with a comparison with Ufone super card plus which provides a good amount of minutes, MBs and messages at a cost-effective rate. The acting and music are also good, but the concept is the real game-changer in this TVC.

Verdict: Nicely done



Telenor Free WhatsApp

This TVC reflects how most of the people in Pakistan have food in Shaadi, by totally justifying that "Khawahish se Zada Mil Jae tou kon nae cahata". With the same purpose, of keeping customers happy, Telenor has come up with an exciting offer of 2GB free WhatsApp for 30 days.

Verdict: Theek thaak ad





UBL Digital App DVC - Bill Payment

UBL's new ad of digital app DVC is simple and short. The performer delivered the message quite clearly that how one can pay their bill with the help of UBL Digital App DVC without any hassle. I would say that the ad is classy without any drama.

Verdict: Simple but classy



Baby, take it easy!



The all new Easypaisa app - Baby, Take It Easy!

Well, well, well such a nice ad I got to see after such a long time or may be the Sajjad Ali's song "baby" added some spice into it. However, the energetic performance of the performer is also an important factor that catches your attention. In a very fascinating way, the ad creator has conveyed the message and highlighted all the features of the new Easypaisa app including bill payment.

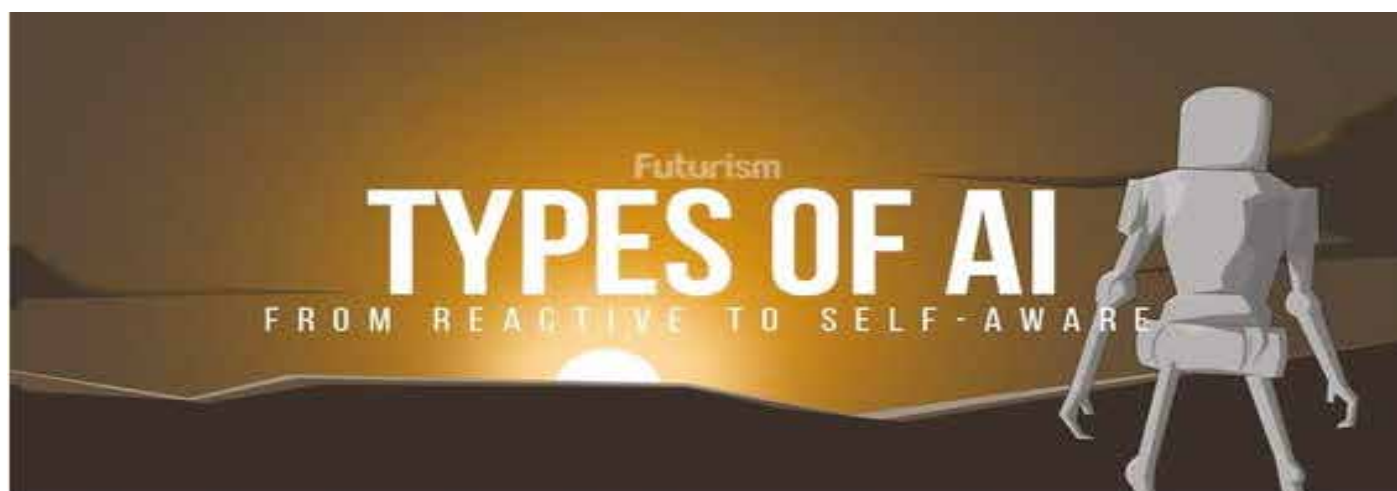
Verdict: Incredible!

Get #TheExtraHappiness with Jazz - FREE WhatsApp Offer!

Why we should be like Alina? Jazz new ad seems made in very hurry or without spending much time on the idea. Like seriously we will get extra when we buy something just because we have activated the Jazz free WhatsApp offer or one can get extra score in the exams just because of Jazz free WhatsApp calls offer. Such a goofy idea of the ad.

Verdict: silly ad





TYPES OF AI

FROM REACTIVE TO SELF-AWARE

With advances in computing power—including machine learning, neural networks, natural language processing, genetic algorithms and computational creativity, to name just a few—it increasingly seems likely that artificial intelligence is evolving from simple to self-aware machines. Here is a look at where AI is now, and the prospect of what it may become.

TYPE I PURELY REACTIVE

This is the most basic form of AI. It perceives its environment/situation directly and acts on what it sees. It doesn't have a concept of the wider world. It can't form memories or draw on past experiences to affect current decisions. It specializes only in one area.

Examples:

- IBM's Deep Blue which beat Kasparov at chess
- Google's AlphaGo which triumphed over human Go champions



TYPE II LIMITED MEMORY

Further up on the AI evolutionary ladder: this type considers pieces of past information and adds them to its preprogrammed representations of the world. It has just enough memory or experience to make proper decisions and execute appropriate actions.

Examples:

- Self-driving vehicles
- Chatbots, personal digital assistants





TYPE III THEORY OF MIND

Type III AI has the capacity to understand thoughts and emotions which affect human behavior. This type—which can comprehend feelings, motives, intentions, and expectations, and can interact socially—has yet to be built, but would likely be the next class of intelligent machines.

Examples:

- C-3PO and R2-D2 from the Star Wars universe
- Sonny in the 2004 film *I, Robot*



TYPE IV SELF-AWARE

These types of AI can form representations about themselves. An extension of the theory of mind, they are aware of their internal states, can predict the feelings of others, and can make abstractions and inferences. They are the future generation of machines: super intelligent, sentient, and conscious.

Examples:

- Eva in the 2015 movie *Ex Machina*
- Synths in the 2015 TV series *Humans*



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Top Applications and Games for your Smartphone



Rayman Adventures

An action-packed adventure game available as free download for iOS devices. Embark on epic adventures to rescue the Incrediballs!



TIME Immersive

Is an AR and VR application from TIME Magazine. You can search for various things around the world and experience them in virtual or augmented reality.



Real Racing 3

Is the award-winning franchise that sets a new standard for mobile racing games – you have to play it to believe it.



Weather Pro

I've used a lot of weather apps, but I keep coming back to Weather Pro. Not only does it seem to be the most accurate, but it's also well integrated with iOS, and displays weather information in a sensible way.



Brawl Stars

Players drop into a game with a couple of teammates, brawl with opponents, and try to win. There are a few game modes, including a straight brawl mode, a mode where you collect crystals, a heist mode where you steal the opponent's treasure.



Free Basics by Facebook

It offers free Internet to people but only for certain websites. Some of those websites include Facebook itself, AccuWeather, BBC News, Dictionary.com, ESPN, UNICEF, and others.



Critical Ops

In this title, you'll battle terrorists in a variety of urban-oriented levels or you can play as the terrorists if you want to. It has a strong online multiplayer community where you can play with your friends as well.



Just Press Record

The ultimate mobile audio recorder bringing one tap recording, transcription and iCloud syncing to all your devices. You can operate it hands-free using Siri or from your Apple Watch.



Into the Dead 2

In this action-packed game, you'll experience the zombie apocalypse as you race through maps to save your family. Along the way, you'll pick up powerful weapons and do whatever it takes to put those zombies down.



Shudder

New video streaming service by AMC Networks. This one is dedicated solely to horror movies. You log in, browse around, and watch something spooky. The app features your usual video streaming fare, including a queue and a somewhat powerful search.



**Apple iPhone
11 Pro Max**

Price : PKR.297,999/-
Display: 6.5 inches
Memory: 512GB ROM,
4GB RAM
Camera:
12MP+12MP+12MP



**Samsung
Galaxy A70**

Price : PKR.42,999/-
Display: 6.4 inches
Memory: 128GB ROM,
4GB RAM
Camera: 25MP+8MP+5MP

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



Huawei Y9s

Price : PKR.42,999/-
Display: 6.59 inches
Memory: 128GB ROM,
6GB RAM
Camera: 48MP+8MP+2MP



Oppo Reno2

Price : PKR.79,999/-
Display: 6.5 inches
Memory: 256GB ROM,
8GB RAM
Camera:
48MP+13MP+8MP+2MP

**Realme XT**

Price : PKR.54,999/-
Display: 6.4 inches
Memory: 128GB ROM,
8GB RAM
Camera:
64MP+8MP+2MP+2MP

**Realme 5 Pro**

Price : PKR.37,999/-
Display: 6.3 inches
Memory: 128GB ROM,
4GB RAM
Camera:
48MP+8MP+2MP+2MP

**Redmi
Note 8 Pro**

Price : PKR.42,999/-
Display: 6.3 inches
Memory: 128GB ROM,
6GB RAM
Camera:
64MP+8MP+2MP+2MP

**Oppo
A9 (2020)**

Price : PKR.45,999/-
Display: 6.5 inches
Memory: 128GB ROM,
8GB RAM
Camera:
48MP+8MP+2MP+2MP

**Infinix S5**

Price : PKR.27,499/-
Display: 6.6 inches
Memory: 128GB ROM,
6GB RAM
Camera: 16MP+5MP+2MP

**vivo Y19**

Price : PKR.31,999/-
Display: 6.53 inches
Memory: 128GB ROM,
4GB RAM
Camera: 16MP+8MP+2MP

Vivo V17 Launched in Pakistan, Users will Now See the Brighter Nights

The new flagship phone packs 48MP Quad Rear Camera & 32MP AI Camera inside it's iView Display



Vivo, the global innovative smartphone brand has finally launched the flagship V17 in Pakistan after a week-long pre-order campaign. Continuing Vivo's tradition, this new phone brings innovation with its iView Display and packs a premium set of specifications including the massive 8GB RAM & 256GB storage.

Commenting on the launch Mr. Zohair Chohan, Vivo's Brand Manager in Pakistan said

"The new V17 with a futuristic iView Super AMOLED Display and a Superior Camera set-up demonstrates Vivo's continuous redefinition and breaking of boundaries with pursuit of perfection, by providing users with advanced technology and an innovative product experience."

Vivo V17, priced at Rs. 59,999 is now available across Pakistan through Vivo's offline & online distribution channels with one-year official warranty and is duly approved by PTA to work on all mobile networks in Pakistan. Customers using Zong's mobile network can also get free 4G mobile internet for 6 months.



RIVERSONG

Motive

A Distinctive Art on Your Wrist



- Heart Rate and Sleep Monitoring ✓
- Real-time Notifications ✓
- Blood Pressure & SpO2 Monitoring ✓
- 25-Days Battery Life ✓
- IP67 Water Resistant ✓
- 2.5D Tempered Glass ✓
- Zinc Alloy Metal ✓
- Fitness Tracker ✓
- 365 Days Replacement Warranty ✓
- FREE Silicon Strap Included ✓



Horizon 10

10000mAh

Perfect for Your Daily Use

- ✓ Affordable Price
- ✓ 2.4A Fast Charging
- ✓ Type-C and Micro USB Input
- ✓ Dual USB Output
- ✓ 365 Days Replacement Warranty
- ✓ Elegant Textured Design



vivo

V17

— Clear as Real —

48MP Quad Camera | Brighter Night



Super AMOLED iView Display
In-Display Fingerprint Scanning
48MP Quad Camera (Super Night Mode)
32MP AI Selfie (Super Night Selfie)
8GB + 256GB

vivo.com/pk

