PHONE WORLD

SIGNIFICANCE OF SPECTRUM MANAGEMENT FOR MOBILE OPERATORS

Infocus Interview
Nabeel Amjad
GM PTCL Cloud

The Role of Taxation
in reshaping ICT industry

TAX

Device Review
Q Mobile Q Infinity

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Q Mobile

S8

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5MP Selfie
Camera
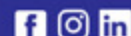
Adnan Khan
Managing Editor

Dear Readers,

Digital mobile revolution in Pakistan started off a little late but the developments taking place over the years are quite impressive. After the advent of Next Generation Mobile Technology, mobile operators have become the biggest providers of internet services. This rapid and widespread success of mobile broadband is at the center of the technology revolution. Keeping in mind these developments we can fairly assume that the available spectrum might be sufficient today but in future, it won't be able to satisfy the growing needs of the Pakistani consumers. This crucial role of efficient spectrum management for Pakistani operators is also the scope of our feature article this time.

Pakistan is set to become a tech-savvy nation with each passing year. In fact, many companies have now predicted that Pakistan can become a smartphone affluent nation in the near future but the grey mobile market poses a serious challenge for the industry. We have tried to explore the impact of the grey mobile market on our local industry and how we can cope with it in a better way.

Every year government modifies its taxation policy, in FY 2017-2018 government of Pakistan once again revised its tax policy. The government is of the view that new tax initiative will reduce the dispute on the categories of smartphones and will also increase mobile penetration in the country. However, the industry doesn't agree with government's point of view. We have discussed these latest taxations in our article, "The Role of Taxation in Reshaping ICT Industry".

PTCL has been at the forefront of introducing ICT related services in Pakistan and decided to implement a local Cloud Infrastructure in 2017 as part of its continued commitment to technology and innovation. An exclusive interview with Nabeel Amjad, GM PTCL Cloud, we have tried to dig deeper in the philosophy behind historic evolution of PTCL cloud services.

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.

Thank you,
Adnan Khan
Managing Editor

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Significance of Spectrum Management for Mobile Operators

By Rizwana Khan | Munawar Anwar

After the industrial revolution of the 19th century, the technology revolution of the current era has perhaps made the biggest impact on the world so far. It has brought communications to hundreds of millions of people across the world within a limited period of time. After the advent of Next Generation Mobile Technology, mobile operators have become the biggest providers of internet services. This rapid and widespread success of mobile broadband is at the center of the technology revolution. It has also helped operators to achieve their key strategic goals by increasing their data revenues to balance out declining voice revenues.

Pakistan is no exception in digital mobile revolution except that it started off a little late but the developments that have taken place over the last decade are quite impressive

Pakistan is no exception in this digital mobile revolution except that it started off a little late but the developments taken place in the ICT sector over the last decade are quite impressive. In just four years, mobile broadband subscribers reached 40 million while cellular subscribers reached 144 million up from 114 million in 2014. Telecom imports rose to 333.701 million dollars in Q1 2017-18 whereas, more than 40% mobile phones imported in the country are smartphones.

Mobile operators are ramping up mobile broadband services but data traffic is growing much faster than data revenues

The imprint of mobile technology has gone beyond ICT industry and we can taste the bounties of mobile technology in commerce, agriculture, education and baking among other sectors as well.

Why Pakistan Needs More Spectrum?

Mobile operators are ramping up mobile broadband services but data traffic is growing much faster than data revenues. It is partly due to the launch of flat-rate tariffs for mobile broadband.

Even the biggest telecom operators of the world are facing the same dilemma, Vodafone, T-Mobile, AT&T Telecom Italia and many other operators have reported that mobile broadband subscribers and data uptake has increased many folds but the increase in data revenues is not at par with that.

Although the operators around the world are facing the same issue but as compared to Pakistan, they are in a far better position. They are not only technically more advanced with the efficient network but at the same time, they also have much larger spectrum at hand. Consequently, they incur much less cost to run their businesses. At the same time, Pakistan has relatively less mobile data consumption per month i.e. approx. 850Mbs as compared to other countries.

Spectrum is the most valuable asset for mobile operators due to its role in improving service coverage or capacity, or both as data speeds have become the key driver for operators' network strategies. In Pakistan, mobile services are provided at a total of 128 MHz in 850 MHz, 900 MHz, 1800 MHz, and 2100 MHz spectrum whereas, for next-generation mobile service, the spectrum quota is much lesser. Below is the mobile spectrum map Pakistan.

Mobile Spectrum in Pakistan					
Operators	**850MHz**	**900MHz**	**1800MHz**	**2100MHz**	**Total**
ZONG 4G	——	7.6	16	10	33.6
Jazz	——	12.4	24.8	10	47.2
telenor	10	4.8	8.8	5	28.6
ufone	——	7.6	6	5	18.6

Pakistan has assigned least spectrum for LTE as compared to other countries. Secondly, Pakistan still has the highest allocation of 2G Bands. Because of such unfavorable conditions, the average mobile data consumption per connection per month in Pakistan is way too low as compared to similar markets as well as western markets.

Mobile subscribers in Pakistan are increasing at a steady pace. With increased subscriber base, data usage is also growing and use of IoT services is progressing as well. In future, this growth will further fortify, setting the ground for need of additional spectrum and better spectrum management strategies.

Another crucial reason that is adding up to the need of more spectrum is the cost associated to LTE network expansion with limited spectrum at hand. To fulfill the needs of larger

subscriber base operators have to install more base stations hence, resulting in increased OPEX and CAPEX. Through appropriate spectrum planning, operators can cut down this cost. Additionally, availability of low-cost LTE devices has given rise to increase in LTE subscriber base consequently resulting in need of more spectrum.

What Are the Options?

With the dramatic growth in telecom and IT industry, we can see a number of services and products going digital. The available spectrum might be sufficient today but in future, it won't be able to satisfy the growing needs of the Pakistani consumers. Leaving operators with two possible options, either to acquire more spectrum through bidding in the auction or by refarming existing spectrum.

1. Spectrum Acquisition through Auction

In a limited time span of five years, Pakistan government has organized three NGSM auctions that have enabled mobile operators to acquire large spectrum chunks for their 3G and 4G services.

> The available spectrum might be sufficient today but in future, it won't be able to satisfy the growing needs of the Pakistani consumers

There is still 19.1 MHz block available in 1800 MHz while 30 MHz block is available in 2100 MHz frequency. But relying
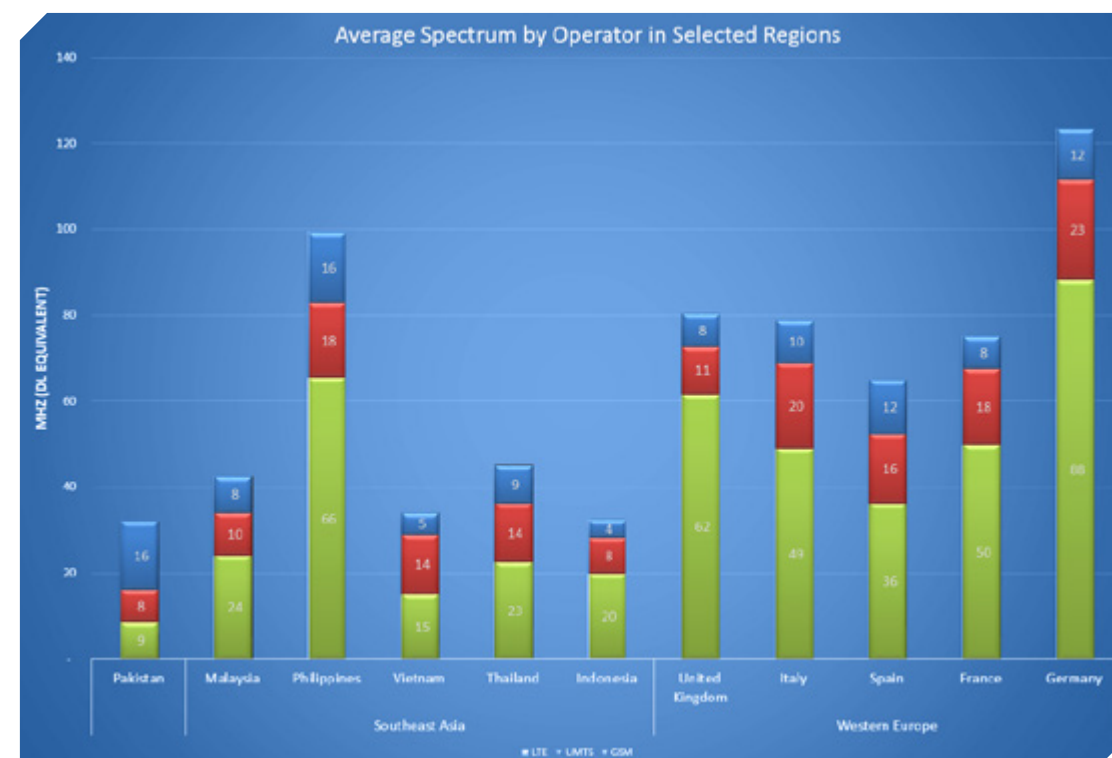
entirely on spectrum auction to fulfill the need of upgraded network is not a feasible deal for mobile operators. Firstly, it is a very costly affair and requires huge investment, not only for bidding but also for network upgrading. Secondly, it is up to the government to decide when to hold an auction.

2. Refarming

Acquiring additional spectrum is a onetime investment and benefits can be reaped for many years to come. But since the release of additional spectrum is not in the hands of operators, the next best thing they can do is refarm their existing spectrum to fulfill their spectrum needs.Farming of spectrum is one of the methods to make some extra carriers available by shifting GSM bands to LTE.

> With more spectrum at hand, mobile operators will require a lesser number of Base stations

In this way, operators can increase their LTE bandwidth by slowly and gradually migrating 2G subscriber to 4G. Farming is the most inexpensive method to increase LTE spectrum that can be achieved with careful RF planning. Let's look at some of the benefits refarming can bring for the operators and the overall industry.

Economic Benefits

No matter how socially responsible and active an organization is, at the end of the day, all commercial businesses have one basic motif i-e- revenues. Their main objective is always to cut the cost wherever possible while maintaining their quality of products and services. Mobile operators also try to strategize their plans on the same lines. The reason why mobile operators should and will move towards acquiring additional spectrum and refarming strategy in the future is cost efficiency.

Mobile operators incur huge cost annually in the shape of network maintenance. To keep one BTS up and running, an operator spends millions of rupees every month. Besides the Network equipment and maintenance cost, site rentals, petrol and other utility expense, security, human resources add up to the overall cost of network maintenance.

With more spectrum at hand, mobile operators will require a lesser number of Base stations. The more the spectrum is, the lesser the number of sites required, keeping the coverage area same. More Spectrum provides more carriers that can be re-used in large clusters hence covering more area as compared to small clusters.

Another economic benefit for mobile operators is that when the OPEX and CAPEX are under control, operators will also be in a better position

to offer competitive data services as well. With improved service quality, data uptake and subscriber base will also improve, resulting in improved data revenues.

> Farming of spectrum is one of the most effective methods to make some extra carriers available by shifting GSM bands to LTE. In this way, operators can increase their LTE bandwidth by slowly and gradually migrating 2G subscriber to 4G

With minimized expenses, operators will also be in a much better position to invest in the network upgrading and expansion. For the said reason, operators will import huge network equipment for installation resulting in improved tax revenues for the government. The benefits will also reach the end consumers as they will not only get a better quality of service but better and economic packages as well.

With better service quality and increase in mobile broadband penetration, digital growth will also be amplified and other industries will also feel the impact of digitization. IT startups

Average Spectrum by Operator in Selected Regions

Source: spectrummonitoring.com

and third-party applications will also grow that will not only improve the performance and efficiency of various industries but will also create more job opportunities for the people.

Accelerated Migration from 2G to 4G

LTE is the most spectrum efficient Technology that can regulate an increased number of subscribers as compared to 2G and 3G spectrum. It is a well-established fact that in coming years, use of LTE will be increased due to expansion in digital services as IoT is best implemented on LTE.

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The worldwide trend translates 2G to 3G and 3G to 4G migration. 3G to 4G refarming is much slower as compared to 2G to 4G migration. The reason being, until VoLTE is not matured 3G will be required to fulfill Voice needs. An important factor here would be a formation of awareness campaigns for users to sensitize them about the benefits of next-generation technology.

In order to achieve this goal, all stakeholders will have to come forward to play their

respective roles. Jazz has recently launched Pakistan's first 4G feature phone that has opened up ways for affordable 4G devices.

Improved service quality, data uptake and subscriber base will also improve, resulting in improved data revenues

With increased 4G awareness initiatives uptake of 4G services and devices will be enhanced that will facilitate 2G to 4G migration.

Increase in Wireless Penetration

If mobile operators switch their focus on 3G and 4G network expansion, it will consequently result in accelerated 3G/4G and LTE device penetration in the market as well. Smartphone penetration will double by the end of 2025 with subscribers' migration to 3G and 4G networks.

Technical Benefits

Refarming is not limited to GSM, since UMTS spectrum can also be refarmed to increase LTE capacity. Another interesting benefit for operators is that lower frequencies (usually allocated to GSM networks) provide much better coverage. Lower frequencies reach farther and have less

penetration loss than higher frequencies, enabling better rural coverage and improved indoor urban coverage. Higher frequencies typically deliver greater capacity, rather than coverage, in urban areas. As an example of better coverage, UMTS900 can increase areas served per Node-B between 44% (in urban areas) and 119% (rural areas) when compared with UMTS2100.

If mobile operators switch their focus on 3G and 4G network expansion, it will consequently result in accelerated 3G/4G device penetration in the market

This difference in performance lets operators economically provides 3G in rural areas, while 4G in congested urban areas..

Mobile data traffic is growing at a fast pace, with that consumer expectations are also increasing. Now they want seamless and consistent high-quality online experience when it comes to using applications like video streaming, social media, and web browsing, regardless of whether they are located, indoors or outdoors, in the city or countryside. This growth in data traffic and user expectations have put the mobile operators in a tight spot and has forced them to rethink the use of their

spectrum assets and look towards refarming and release of additional spectrum.

The benefits of spectrum refarming for improved QoS and coverage are well understood but each operator will face unique challenges according to its available spectrum, network coverage, and finances

With the introduction of Voice over LTE (VoLTE) operators can now evolve their GSM spectrum to more spectral efficient LTE. GSM networks will still be utilized in many countries including Pakistan, however; as the market matures the GSM traffic is expected to decline over the next decade. This will free-up frequencies in 900/1800 MHz bands for HSPA and LTE use.

Spectrum management and strategy building is not an easy job and requires much deliberation. Operators have to face a number of challenges while planning their refarming strategy. How they will balance their mixed use of frequency bands and simultaneous operations will be of crucial importance. Besides these major challenges, maintaining

the user experience of existing subscribers is also important. They have to understand traffic patterns and manage how traffic will be served. Compatible device availability can also pose a challenge as some handsets and machine-to-machine devices cannot work with multiple bands or must remain on the old technology. The operators will have to encourage them to migrate to new services by creating awareness through targeted campaigns and incentive measures.

As the market matures 2G traffic is expected to decline over the next decade. This will free-up frequencies in 900/1800 MHz bands for HSPA and LTE use

The benefits of spectrum refarming for improved quality of service and coverage are well understood by the industry however, each operator will face unique challenges according to its available spectrum, network coverage, and finances.

Therefore, the benefits of network refarming need to be weighed against each operator's unique position in the specific market. Nevertheless, there is no denying the fact that release of the additional spectrum either through auction or refarming will be of monumental importance for the success of every operator in the future.

By Rizwana Khan

THE ROLE OF
TAXATION
IN RESHAPING ICT INDUSTRY

The telecom and IT industry is currently the most profitable sector that has contributed a substantial share in country's economy over the years. Especially after the start of 3G and 4G services the growth has increased many folds. Over the last decade, mobile sector has enabled more than 48 million subscribers to gain access to mobile broadband and related transformative technologies. This increased access to mobile broadband services is bringing wide range of benefits to the overall economy of the country.

Over the last decade, mobile sector has enabled more than 48 million subscribers to gain access to mobile broadband and related transformative technologies

A number of studies suggest that increase in mobile penetration will also lead to an increase in GDP and economic growth. Studies by Ovum, Ericsson, and ONS also suggest that every job created in Pakistan mobile sector, around 10 jobs are created in the wider economy.

Mobile sector has become a significant contributor to the socio-economic growth of Pakistan. The government also recognizes the key role of ICT in economic competitiveness and greater social inclusion through tech revolution. However,

Taxation has always been a bone of contention between the government and industries. Every year government modifies its taxation policy, in FY 2017-2018 government of Pakistan once again revised its tax policy. The latest taxation policy sparked distrust from the industry. In this year's budget, the government added the regulatory duty of PKR 250 every on mobile phone imported in the country. Moreover, it also merged the middle and lower duty slabs into one single slab of PKR 650. The government is of the view that this initiative will reduce the dispute on the categories of smartphones and will also increase mobile penetration in the country. However, the industry doesn't agree with government's point of view.

The latest taxation policy also sparked distrust from the industry. In this year's budget, the government added the regulatory duty of PKR 250 on every mobile phone imported in the country

Previously, the taxation on imports of mobile phones was categorized under three main headers:

- Feature phones @ 300 PKR sales tax

- Entry level basic smartphones that run on Android with a price range starting from 4,000 rupees @ Rs. 1,000 Sales tax

- All high-end smartphones @ Rs. 1500 sales tax

Under its new policy, government merged sales tax rate of 300 PKR and 1000 PKR per set into 650 per set

Under its new policy, government merged sales tax rate of 300 PKR and 1000 PKR per set into 650 per set. In addition to that, the government also changed the custom duty of PKR 250 into regulatory duty. This didn't affect the high-end smartphone much but for feature phones, it meant more than 100% increase in taxes. This apparently minor change in the taxation regime impacted mobile imports especially its impact on feature phone imports is colossal. The upgraded tax structure for a feature phone import is now something like this:

Sales tax of 650 PKR + Regulatory Duty of 250 PKR + 14% other regulatory duties = total import taxes

These unmerited taxations are in direct contradiction with its aim to increase digitization in the country. The government implemented new taxes with the aim to inflate its revenues but after the new taxation, the prices of feature phones hiked

and imports of bar phones decreased from 2 million to 700 thousand per month hence, killing the local players. Such measures may also encourage imports through grey channels and result in tax evasion and smuggling. Unbalanced taxation can drive short-term benefits for the government but in the long run, they are not only counter-productive for the industry but also for the overall economy of the country.

Pakistan is a country where 29.5% population lives below the poverty line which makes approximately 55 million people. Also, being a developing country and comparatively nascent to the technology revolution, expensive gadgets and technology will mean less or delayed purchases.

The government implemented new taxes with the aim to inflate its revenues but after the new taxation, the prices of feature phones hiked and imports of bar phones decreased from 2 million to 700 thousand per month

In a country of 200 million people, there are 144 million

By Rizwana Khan

TECH TWISTS

mobile subscribers and around 44 million mobile broadband subscribers. So, the potential for growth is humongous; initiatives that hamper this growth should be avoided at any cost. There are number of things that government needs to focus on in order to improve its tax policy, for example, there is no clear-cut policy for Completely Knocked down (CKD) and Semi knocked down (SKD) conditions of goods. Neither there are any clear tax policies for manufacturers, importers, and assemblers.

Being a developing country and comparatively nascent to the technology revolution, expensive gadgets and technology will mean less or delayed purchases

The government plans to promote local manufacturing and assembling of mobile phones but unless there are straightforward policies, companies will not take the risk of investing. Also, these policies need to be encouraging and supportive for new businesses to motivate the national and international companies. CPEC is a historical initiative and the eyes of the whole nation are on it. The government is offering a number

of benefits to facilitate and promote businesses, special economic zones (SEZs) have been planned to be created on various point throughout the entire corridor.

The government plans to promote local manufacturing and assembling of mobile phones but unless there are no straightforward policies, companies will not take the risk of investing

The tax policies for SEZs are different from rest of the country that offers special incentives to the businesses. The rules should not be exclusive for SEZs only, rather similar kind of incentives are needed to be offered to rest of the country as well; it will bring richness to all industries including telecom and IT.

Talking specifically about mobile phone taxation, it is crucial to promote the industry by making entry-level smartphones affordable to the masses. At the same time, feature phone market also needs tax considerations from the government. Even today, when 3G and 4G mobile penetration

is increasing at a steady rate, more than half of the mobile-phone imports comprise of feature phones. If tightened, and unfair taxes are imposed on feature phones, instead of an increase in smartphone uptake it will hinder mobile-phone penetration in the country.

We are a developing country in every aspect and to reach Singapore's level of 100% smartphone penetration, we need friendly policies for smartphones rather then forcefully killing feature phone market. By rationalizing these taxes on the mobile sector not only digital and financial inclusion will be increased but at the same time, it will improve economic growth of the country. Furthermore, it can also generate higher tax revenues through more efficient broader-based taxation and investment facilitation to further expand mobile eco-system.

Even today, when 3G and 4G mobile penetration is increasing at a steady rate, more than half of the mobile-phone imports comprise of feature phones

How to know who's an avid computer user

Want to know who's an avid computer user? Simply look at their eyes and count how many times they blink. It's interesting to know that a computer user blinks only 7 times in a minute, whereas the average human being blinks approximately 20 times in that one minute.

If Facebook were a country it would be the largest country on Earth

The huge social network site boasts of 1.79 billion monthly active users worldwide. That's more than the entire Chinese population, which is considered to be the world's most populous country with an estimate of 1.38 billion people.

Linux; The first Choice of Industry Leaders

Industry Giants like Facebook, Amazon, Google, and Twitter, are all powered by Linux. It is true that Linux is not so common Operating System among the usual customers. But, Linux heads the Industry.

Google Blackout

Google had a blackout in 2013 that beat down all of its services for 5 minutes causing a 40% drop in internet traffic across the world.

Spacebar: The most used key

Talking about people, did you know that when you hit the spacebar on your keyboard, approximately 600,000 people in the world are doing the exact same thing! It's not only the longest key but also the most frequently used.

By Shaheer Riaz

NOKIA 8

Share Both Sides of the Story

Design & Display

Nokia 8 is a 5.3-inch device with 1440 x 2560 supportive pixels that is a major upgrade because it has QHD display screen. The colors on the screen are quite cool and sharp, making the display experience quite soothing.

The handset has average screen size so it is very easy to handle. Nokia 8 has a very slim and sleek body and smooth edges.

Camera

Nokia 8 has dual back camera lens of 13MP with face detection & laser autofocus whereas, the front camera has 13MP selfie shooter. Both lenses can record video up to 2160p quality. The best feature of Nokia 8 is that we can use the front and back camera at the same time, a concept named "Bothie".

The back camera of Nokia 8 has some excellent features like Carl Zeiss optics, OIS, dual-LED dual-tone flash Geo-tagging, touch focus, face detection, HDR, panorama. We can make our own watermark and use it in our pictures furthermore; the options of altitude and compass tags are also present in Nokia 8.

We have tested both cameras of Nokia 8 and the overall results are pretty good. They performed fairly well, although the focus can take a while to lock and low light performance could have been better.

The front camera has 13 MP camera with a matching f/2.0 aperture that gives brilliant selfies

Processor

Nokia 8 has 1.7GHz octa-core processor with the chipset of Qualcomm Snapdragon 835 which is considered as one of the best chipsets in the market right now. It has two variants, one with 4GB RAM and other with 6GB RAM but unfortunately, we have a 4GB version. It didn't heat up or paused while multi-tasking overall, its performance was decent in every section.
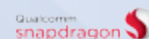
Benchmarking

Multicore	3218	
Metal	3439	
Chrome Browser	5274	

Velamo

173386

Antutu

Specs

Dimensions: 151.5 x 73.7 x 7.9 mm

Display: 5.3" LCD

Battery: Non-removable Li-Ion 3090 mAh

Weight: 160 grams

Camera: Dual: 13 MP, Phase detection & laser autofocus, dual-LED dual-tone flash

Memory: 4 GB RAM, 64 GB ROM

Processor: 1.7 GHz Octa-core

Price: PKR. 49,900/-

Key Features

- Dual sensor rear camera
- Qualcomm Snapdragon 835
- Gorgeous QHD display
- 4GB RAM

Final Verdict

The Nokia 8 offers a lot of great features such as a powerful chipset, dual-sensor camera, and a perfectly sized QHD display. It is a refreshing addition to Android smartphone market.

By Fizza Atique

MEASURING AND IMPROVING THE IMPACT OF IT PARKS IN PAKISTAN

Science and Technology Park is a space where dynamic and innovative tech activities are done in collaboration with government, academics, business, and community. Technology parks are one of the most effective entities that provide innovation in various sectors, regions, and economies. Due to intensive developments of economies of different countries, it is necessary to maintain a competitive edge which is quite difficult to do without technology and innovation.

Technology parks are one of the most effective entities that provide innovation in various sectors, regions, and economies

Science and Technology parks have long been in existence in the modern world. First Tech Park came into existence in the 1950s in the USA later on; the trend was followed by rest of the world as well. Today, many countries are building tech parks to promote technology diffusion among people.

A technology park is more likely to be successful if it is founded in a region that has:

● A large, metropolitan, diverse and well established developed economy

● A strong research base

● A culture of entrepreneurship

● Stakeholders including a University or research Centre that are actively engaged in championing and delivering resources to establish the STP

● Pro-active and entrepreneurial management

● Capital Ownership

● Efficient policy and bureaucracy

Economic Impact of IT parks

Successful economic developments today rely on the timely transfer of scientific developments into practical usage. Technology has a key role in the development of modern society.

With plenty of IT startups growing bigger every year via incubators, it's clear that technology parks are more than just a commercial need

With plenty of IT startups growing bigger every year via incubators, it's clear that technology parks are more than just a commercial need. They can offer small companies resources beyond their wildest dreams and ability to finance themselves. Such IT Parks create Jobs for plenty of youth which in turn has a positive impact on the economy of Country. Apart from job creation, these parks lead to the development of companies at regional and international levels.

The products and services developed in IT Parks are used by various sectors and industries hence, creating a decisive impact on the overall economy of the country

The products and services developed here are used by various sectors and industries hence, creating a decisive impact on the overall economy of the country. Technology parks often boast more established businesses offering start-ups access to more experienced players in the sector. The entrepreneurial and learning environment also improves the social culture and help in bringing stability to the country.

State of IT Parks in Pakistan

The emergence of technology parks in Pakistan has created a lot of expectations that they will contribute to the industrialization. The government of Pakistan envisions becoming top 25 global economies with "Pakistan Vision 2025." For the said purpose, Pakistani Government is geared up to establish IT parks in major cities of Pakistan, some of which are in collaboration with China as part of the historic CPEC initiative. Pakistan's IT and Telecom sector has a lot of potential and it's important to reap maximum dividend from tech sector and Chinese cooperation will definitely help the country to become a digital nation.

PSEB established 1st Science and technology park in 1999 in Islamabad. So far, twelve Technology Parks (TPs) have been established to provide IT enabled office space to assist the IT industry of the country to meet its immediate goals of increased FDI, technology transfer, increased exports, technology diffusion, increased employment, and human resource development.

Pakistani Government is geared up to establish IT parks in major cities of Pakistan, some of which are in collaboration with China as part of the historic CPEC initiative

At the time, over 800,000 sq. ft. IT-enabled office space has been provided in 12 designated Technology Parks where around 80 public and private IT / ITeS companies are engaged in software development and export services. Many top tiers IT companies in Pakistan are working in STPs instead of occupying space in traditional buildings due to the availability of latest ICT infrastructure and allied facilities along with favorable IT work environment.

Why are IT parks important for Pakistan?

IT parks are an important entity for any country; the world is digitalizing and to keep up with

international trends, we should also move towards digitization.

Many top tiers IT companies in Pakistan are working in STPs instead of occupying space in traditional buildings due to the availability of latest ICT infrastructure and facilities along with favorable IT work environment

Pakistan IT industry generates around 2 billion dollars each year for the country. Rapid investment is fuelled by the growth of exports along with the government support and policies. Over 100,000 trained IT professionals in the country and an ever increasing number of specialized educational institutes are adding better-trained resources to an already vibrant job market. This ensures a talent pool of exceptional skills constantly available to the industry, while specialized low-cost facilities available and friendly policies ensure IT organizations a hassle-free setup and work environment. Keeping this in view, Government of Pakistan needs to develop more IT parks as they can play a critical role in growth

of software and IT sector. Technology developments due to these IT Parks will impact all industries including agriculture, education, governance, security, and commerce. By incorporating IT parks in a country, the security situation will get better and will empower us to compete with international markets. Moreover, IT parks will encourage, promote and boost the IT & Software development and Exports. Through the development of IT parks in Pakistan, Government can entrust promotional services to exporters and at the same time, data communication services will be provided to IT related industries which will improve the socio-economic fabric of the country. IT and software parks will play a vital role in the development of Pakistan and will promote small and medium entrepreneurs by creating conducive environment for entrepreneurship in the field of IT/ITES.

The need for IT parks has arisen to comply with the tremendous unfulfilled demand for the expansion of IT companies. The existing buildings, like other retail space, do not address IT Enabled Office Space requirements such as uninterrupted year around operations, quality bandwidth, reliable power and security, accessibility, expandability and parking space.

The IT growth that has been witnessed in Pakistan over the

years is quite phenomenal. Some factors are still impeding this growth and are a major hurdle in the development of Technology parks. Some of these factors include:

● Lack of infrastructure

● Lack of appropriate ICT policies

● Weak cooperation between industry and academia

● Insufficient research and development (R&D) investments

● Poor business environment

● Security issues

● Energy problems

The government will have to play a central role in overcoming these problems and building supportive business environment for local and international players

Once these problems are overcome, our industry's growth will be accelerated many folds and reach its full potential. The government will have to play a central role in overcoming these problems and building supportive business environment for local and international players.

OPPO

Announces Partnership with Qualcomm in the 5G Pioneer Initiative and the Explore in Developed Markets

At the 2018 Qualcomm Technology Day in China, OPPO announced partnership with Qualcomm Technologies in the "5G Pioneer Initiative" to explore ways toward mobile technology innovations in the 5G era. Through the "5G Pioneer Initiative", Qualcomm Technologies will support OPPO to create brand new 5G mobile phone experiences for users around the world by providing comprehensive solutions such as the radiofrequency front-end field.

Tony Chen, CEO of OPPO, discussed the development and future of global mobile technology in a panel discussion, "The 5G mobile network is going to change the global mobile industry structure, and mobile phones will become the major terminal for the Internet of Things. OPPO has been focusing on technology innovation in the past which has laid great foundations for 5G related R&D. In the future, OPPO will continue to invest in groundbreaking technologies such as 5G and Artificial Intelligence, and apply these to product scenarios based on the core needs of users." Tony Chen added, "In 2018, OPPO will speed up entry into global markets, and specifically enter more developed countries like Japan, to provide smartphones featuring advanced technologies and artistic design to more users in the world."

"The upcoming 5G era is unprecedented for the mobile phone industry, and OPPO will work together with our partners in the industry to grasp

opportunities in this field." the Vice President of OPPO, Alen Wu said in a speech at the summit. "OPPO plans to launch 5G mobile phones in 2019 to bring the greatest 5G experience to users around the world. Qualcomm Technologies has always been a key strategic partner and, OPPO will continue to deepen cooperation with Qualcomm to facilitate healthy development of the industry".

OPPO has been adhering to the core needs of users to innovate, and continuously prepare for 5G products and other advanced technologies. On January 16, 2018, IMT-2020 (5G) Promotion Group, the key promotion organization established by three official ministries in China, released the 5G technology R&D trial phase 3 specifications in Beijing. OPPO has participated as the only smartphone manufacturer and made contributions to the 5G standard formulation.

Back to the beginning of 2015, OPPO set up a special R&D team for the next telecommunications standards and recruited experts with rich experience in international standard development field, that's now leading the smartphone industry regarding research excellence.

China manufacturers with the world leading technology innovators are the leading force to embrace the commercialized 5G networks. And now, they are hopefully to bring the 5G experience to consumers around the world earlier thanks to their same faith in the future.

By Shaheer Riaz

QMobile QInfinity

Camera

QInfinity has 16MP front selfie camera and 13MP back camera lens with flashlight. It can record video in full 1080 pixels at 30 frames per second.

The main modes of the back camera are Geo-tagging, HDR, Beauty Mode, Panorama, and Portrait. Portrait mode is one of the most popular feature days; every latest smartphone comes with the state of the art selfie technology. QInfinity takes full portrait pictures with blur background. It can record videos in full 1080 pixels.

Battery Performance

QMobile QInfinity comes with 2980 mAh Li-Po battery. It gives 8-9 standby hours which is quite satisfactory. You can use the smartphone in power saving mode to get better timing.

Display & Design

QMobile QInfinity has HD IPS display with the supporting pixels of 710 x 1440 pixels while the supportive dpi of 320. QMobile always lacks behind is the multi-touch; QInfinity also has scored 5 points only. Whereas, the design of QInfinity is very simple and elegant.

Processor

QMobile QInfinity has 1.4GHz Quad-Core with Qualcomm Snapdragon 425 chipset. This chipset is by far the best among all mid-range chipsets. It gives impressive performance in network, speed and processing.

Benchmarking

Velamo

Multicore	1251
Metal	1225
Chrome Browser	2286

Antutu 34815
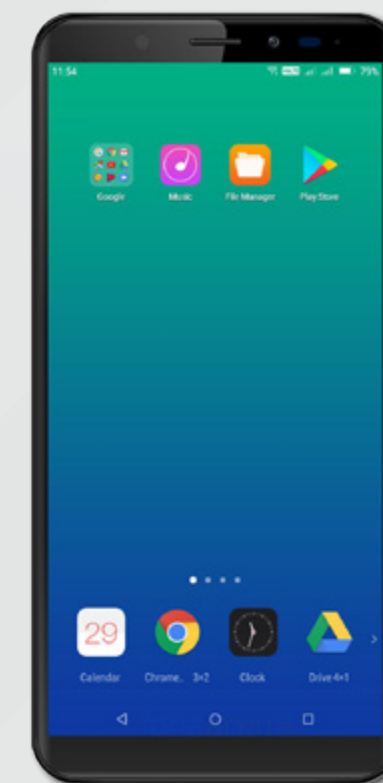
Specs

OS: Android v7.0 (Nougat)

Display: 5.7 inches

Battery: Removable Li-Po 2980 mAh

Weight: 160 g

Camera: 13 MP, LED flash, Auto-focus

Memory: 3 GB RAM + 32 GB ROM

Processor: 1.4 GHz Quad-core

Price: PKR. 16999/-

Key Features

- Snapdragon Chipset
- Affordable Price
- Good Camera Lens

Final Verdict

QMobile QInfinity is an affordable smartphone with good specs and features. Its 16MP selfie camera with Portrait mode is the main highlight for camera lovers. If you are looking for a good smartphone under 20k then you should go for QInfinity.

By Rizwana Khan   Kanwal Ayub

PTCL envisions Pakistan's digital transformation through Power of Public Cloud

Nabeel Amjad- GM PTCL Cloud

P ublic Cloud Infrastructure, Platform and Software services is an area that has exponentially developed globally over the last few years as it provides access to IT Data Center infrastructure and services at significantly scarcer capital and operational expenses. PTCL has been at the forefront of introducing ICTrelated services in Pakistan

and decided to implement a local Cloud Infrastructure in 2017 as part of its continued commitment to technology and innovation.

PTCL, leveraging its distinct position and vast experience in Data Center hosting services, has launched cloud services with innovative offerings using enterprise-grade platforms. It

has collaborated with IBM as the lead partner and system integrator for deployment of its cloud infrastructure.

Through our cloud service we enable our customers to get on-demand computing and storage needed in order to run business workload

Over a brief period of time, PTCL has established a satisfied clientele that has transformed and powered up their growth with PTCL Cloud services. In a short interview session with GM Cloud PTCL Mr. Nabeel Amjad we tried to dig deeper in the philosophy behind historic evolution of PTCL cloud services. Here is what he said:

PW: Please define cloud; is it a product, service or a combination of both?
NA: Essentially speaking it is a service where instead of buying or investing in an asset you rank it out. So fundamentally, we are providing a computing and storage service. You don't have to invest upfront this way, and can save on CAPEX and cash outflow. Through our cloud service we enable our customers to get necessary and on-demand compute and storage needed in order to run business workload.

PW: Why is it called a catalyst for the digital transformation?
NA: Everything is dependent upon the time to market. In the past, if you wanted to spin up workload for a website or run an ERP application, you had to wait for weeks to do so.

PTCL has collaborated with IBM as the lead partner and system integrator for deployment of its cloud infrastructure

It required huge investments on hardware and go through a whole procurement cycle. Now that everything is digitized, you want your workload and environment to be up and running quickly in order to meet the demands of your consumers. In that case, the agility comes from

the cloud because here when you want more resources, you can get them in split seconds.

In a nontraditional environment, you would have to buy the hardware to increase the workload during peak season which would go in waste when the business is slow. In the case of cloud, you don't have to do that, you can easily scale up your resources according to the fluctuation of demand. So basically you pay as you go. It's just like electricity, you pay as much as you consume.

PW: Can you please through some light on the concept of digital security and its importance?
NA: With the digital transformation and advent of digital services that we see today, the exposure and the landscape of attack has become huge. This makes digital security a crucial component.

Cloud services and digital security go hand in hand, any cloud which is not secure is not going to serve any purpose for the customers because if you cannot provide security, no one will opt for your service

Now attackers don't attack you to take your things down rather they attack you to earn money. So the more you are online, the more there are chances for them to infiltrate your information for their benefits. Cloud services and digital security go hand in hand, any cloud which is not secure is not going to serve any purpose for the customers because if you cannot provide security, no one will opt for your service. It is basically a cat and mouse situation where attackers come up with new ways of attacking and you come up with new forms of security.

We have invested a lot in our cloud service; we just got certified as Payment Card Industry Data Security Standard (PCIDSS) certification v3.2 for our Infrastructure-As-A-Service (IaaS) offering -PTCL Smart Cloud. PCI DSS certification is a landmark achievement for PTCL Smart Cloud services, which assures maximum-security compliance as per international standards.

PTCL's IaaS Cloud Services run on two locally hosted Tier-3 certified data centers, which itself is a guarantee of optimal security.

PW: What is your take on the IT sector of Pakistan? Do you think we are ready for the cloud, IoT, and other advanced services?
NA: IIf you would have asked this question two years ago, I would have said no but today it's a completely different story. The demand for businesses today is agility and you can't get agile without cloud. These days you can't go through the whole process of procurement and advertisement and wait six months to launch a service. With cloud, you can do it with a single click.

PW: Do you think our regulatory environment is conducive to digital revolution?

industries like a financial sector that ought to be regulated because the data of the subscriber is very critical.

The players from financial industry are switching towards cloud services and that is a very healthy sign. Today, data has become more precious commodity than oil, so whoever controls data, controls everything.

> ## For last 70 years, PTCL has been serving the nation through its connectivity and wireless services; cloud is another step forward in this direction

services; cloud is another step forward in this direction.

PW: How will PTCL's cloud services digitally transformation in the country?
NA: It's all about agility and having whatever, whenever and wherever you want. Cloud is just the underlying component of anything that goes digital. So with a huge enterprise infrastructure laid in the country, you don't have to go outside and spend your precious money. The other thing is connectivity itself. You don't have to go online to use our cloud; you can have private lease connectivity too. This gives an edge to our customers where they can run a secure digital environment in our secure data center. If you go for Amazon, Microsoft Azure, IBM soft layer or blue mix, you have to administer it through the internet whereas, if you get a privately

Although there are fixed service subscriptions as well, our basic motive is to give a flexible and customized experience to our clients so they modify the service as per their own needs.

> ## Today, data has become more precious commodity than oil, so whoever controls data, controls everything

Our clients do not have to set up their own server rather they have to just subscribe to our service. We call it our virtual data center service where our clients manage their own stuff; we just make sure that resources are available to them, as and when needed.

NA: Yes it definitely is. If you look at Pakistan's economy index, you'll see that it is growing tremendously when it comes to the digital transformation, we are only behind China and India in our region.

> ## PCI DSS certification is a landmark achievement for PTCL Smart Cloud services, which assures maximum-security compliance as per international standards

The digital ecosystem of Pakistan is propelling, there are things that can be done better but overall, the regulatory regime that we currently have is doing a really good job. There are certain

You don't want your data to go in the wrong hands, for that you need some hardcore and dedicated policy plans.

PW: What measures is PTCL taking to lay the infrastructure of cloud in the country?
NA: We have been running data centers for good 7 to 8 years. We are the only tier 3 certified data center company in Pakistan. We are offering a number of data center services to our clients. As a company, we decided that we were already running state-of-the-art data centers, and people wanted to invest in infrastructure to bring their servers and hardware into our data centers just for hosting. So we thought that we could do this investment for them and that's how PTCL cloud was born. We partnered with IBM to set up two cloud operations, one in Lahore and the other one in Karachi. Apart from that, for last 70 years, PTCL has been serving the nation through its connectivity and wireless

leased circuit that costs you more than the cloud service itself. So it doesn't make any economic and security sense.

> ## Our Virtual data center service enables our clients to manage their own stuff; we just make sure that resources are available to them, as and when needed

PW: How cloud service is going to help businesses in their growth?
NA: Besides agility, it will demonstrate on-demand resources available at all times. So you can scale your capacity as per your requirement and you pay only for what you use.

PW: What do you see as the key trend emerging in the industry?
NA: There are a lot of things going on right now, IoT, blockchain and Artificial Intelligence being some of them. Blockchain will digitize financial sector just like internet has digitized our every day lives. Artificial intelligence and machine learning are some other advancement that will revolutionize the world in coming future.

PW: What is THE most important message you feel you should get across our readers and the industry?
NA: Openness to adoption of new trends is very important. Pakistan really has come at par with international players and grown as an IT advanced nation. So, we should invest more in forward looking initiatives and build our knowledge and human capital to obtain the required knowledge and skills to further grow and develop in all fields and industries.

By Zainab Saeed

The Looming Danger of Grey Mobile Market in Pakistan

Despite the fact that IT and Telecom industry in Pakistan is developing over the years, it has also been facing many hurdles on its journey of expansion. One most serious obstacle to this growth is the grey mobile market of Pakistan. Grey mobile market sells mobiles which do not have type approval/Certificate of Compliance (COC) issued by Pakistan Telecommunication Authority. The type approval process also ensures the imported handsets conform to quality standards specified by PTA. The sets sold in the grey market are smuggled into Pakistan, without paying customs duties/taxes and could be of inferior quality.

The type approval process ensures that imported handsets conform to quality standards specified by PTA

Grey mobiles are available in plenty, especially at shops located in rural and suburban areas where law enforcement is difficult due to the shortage of human resource required for the purpose.

Grey phones are popular because of the low price, but unsuspecting buyers may be tricked by the dealers who replace some of the original parts with replicas or substandard/cheap ones. Another disadvantage of buying non-type approved mobiles is that there are no warranties. Genuine dealers sell type approved, and duties paid devices and are bound by rules and regulations to provide after sales service and warranty.

IMEI is very helpful for law enforcement. If an owner loses his phone or it is snatched by a robber, he can get it blocked through PTA helpline

Some of these illegal phones do not have their identity numbers called IMEI. IMEI is very helpful for law enforcement. If an owner loses his phone or it is snatched by a robber, he can get it blocked through PTA helpline so that the robber or the one who finds it cannot use it. It also helps in tracing robbers, kidnappers, terrorists, etc.

As of now, illegal import of mobile handsets and smartphones remains a challenge for the PTA and customs authorities. To overcome the problem Pakistan Telecommunication Authority (PTA) has planned to launch a system called 'Device Identification, Registration and Blocking System (DIRBS). The aforesaid system is designed to automatically detect and block stolen and non-type approved/without COC mobile phones working on mobile networks. The system will also result in the elimination of smuggled mobile and smartphones.

Genuine dealers sell type approved, and duties paid devices and are bound by rules and regulations to provide after sales service and warranty

Pakistan is successfully becoming a tech-savvy nation with each passing year and has been now known to be a smartphone-rich country. In fact, many companies have now predicted that Pakistan can become a smartphone affluent nation in the near future. As of now, the statistics speak for itself i.e. according to a German research institute Growth for Knowledge (GfK) Pakistan stands on number 6 position for smartphone market growth. Pakistan had more than 40 million smartphones by end of the year 2016 and has a plentiful room to expand in the Smartphone/mobile industry but in the presence of grey market, the chances of growth seem meager.

According to a German research institute Growth for Knowledge (GfK) Pakistan stands on number 6 position for smartphone market growth

As reported by Pakistan Bureau of Statistics (PBS) the country spent $333.7 million on import of smartphones/mobiles in the first quarter of year 2017. Additionally, telecom imports (which also counted in smartphones/mobiles) observed a rise by 19.03% in the same quarter of the year 2017. Increase in telecom imports by 19.03% was in comparison with the previous year's imports. This explicitly shows that how promising this market has become but the smartphones/mobile market will only be lucrative for the economy if it is regulated across legal channels and not through the grey market.

No doubt, everyone is getting hurt by the effects of the grey market. This grey market has an adverse effect on the manufacturing business, the industry, and the economy. In the grey market, Mobile phones are sold at a lower cost than the cost decided by the company. As a result of it, the company's profitability is affected. Other than that, the mobile phones in grey market do not come with a guarantee backed by the company. So, the customers cannot differentiate between the original and the duplicate product in a grey market. Mobile phones which are sold through grey channels result in major loss to the revenues because government misses out on the collection of taxes.

In the grey market, Mobile phones are sold at a lower cost than the cost decided by the company. As a result of it, the company's profitability is affected

Grey products are a menace to the economy of a country because of huge revenue loss to the government in the form of tax loss. The loss is not only monetary, but it also costs the reputation and the image that is definitely

graver than the monetary gains and losses. Putting an end to illegal products will face-lift the goodwill and image of the country. Mobile brands will then be more willing to invest in Pakistan, consequently creating more job opportunities for the citizens.

Putting an end to illegal products will face-lift the goodwill and image of the country

The officially authorized distributors of mobile handsets and smartphones across Pakistan are as following:

S.NO.	Mobile Brands	Authorized Dealers
1.	SAMSUNG	Airlink, M&P and GreenTech
2.	iPhone	M&P
3.	Xiaomi Smartphone	SmartLink
4.	Lenovo	TechSirat, GreenTech
5.	NOKIA	Advance Telecom
6.	HUAWEI	Airlink, M&P
7.	OPPO	OPPO
8.	Q Mobile	Digicom
9.	G'FIVE	Gfive
10.	TECNO	United Mobile
11.	Infinix	M&P
12.	vivo	VIVO
13.	SONY	INOVI
14.	ONEPLUS	Rockville
15.	TELENOR INFINITY	I2 Pakistan
16.	lephone	LePhone

Susan Wojcicki

The Woman Who Broke the Silicon Valley Boys' Club

S usan Wojcicki is one of the most influential women in the world. She is an American technology executive and the present CEO of YouTube. Wojcicki started off her career by working as a management consultant in R.B. Webber & Company and in Bain & Company. She also worked for Intel in the marketing division at the company's headquarters, located in Santa Clara, California. In September 1998, she lent her garage in Menlo Park to her friends, Larry Page and Sergey Brin, to establish their office. The American multinational technology company, specializing in Internet-related products and services was incorporated on 4th of that month. Later on, she was inducted as the first marketing manager of Google. After working on the viral marketing programs and Google doodles, she eventually started developing services, such as Google Images and Google Books which were launched in July 2001 and October 2004 respectively.

Her contribution towards the development of Google, which only augmented over a period of time, saw her earning the position of Senior Vice President of Advertising & Commerce.
She headed the analytic and advertising products of Google, such as online advertising service 'AdWords', freemium web analytics service 'Google Analytics' and CPC (cost-per-click) advertising program 'AdSense'. She then supervised the Google video services. As YouTube, a video-sharing website developed in February 2005 by Chad Hurley, Jawed Karim and Steve Chen, started competing against Google video service, Wojcicki initiated the proposal of acquiring YouTube. Wojcicki handled the acquisition of YouTube which is considered as one of the largest take-overs by Google as it purchased the video-sharing website for 1.65 billion US dollars in November 2006. The following year, she handled yet another large acquisition of Google as the company bought DoubleClick for $3.1 billion.
She then took charge as the CEO of YouTube in February 2014. Since then, the percentage of female employees in the company has increased from 24 to around 30. She supervised the launch of different YouTube applications that targeted the users those who were interested in contents pertaining to music, gaming and family. She also supervised the release of YouTube Red, a paid streaming subscription service of YouTube and YouTube TV, an over-the-top (OTT) internet TV

service of the video-sharing website. According to an announcement made by the company, YouTube gained 1.5 billion users within a month with users viewing the site one billion hours a day. After she became the CEO, the policy on videos were made stricter. YouTube implemented several stringent policies after a British national newspaper mentioned that videos supporting terrorist groups were found easily on the video-sharing website. It also claimed that some of its ads and that of other private organizations had appeared just before the commencement of such videos.

In 2015, her name appeared in the Time's list of 100 most influential people. The magazine also tagged her as 'the most powerful woman on the internet' in one of its issues. That year, she was also ranked number 27 in the New Establishment list of 'Vanity Fair', a popular culture, current affairs and fashion magazine. She came up with her own YouTube channel on September 28, 2017, and posted her first video, 'My First Video - Advice From Creators'. The video was aptly titled, as it included an array of clips from several YouTube content creators. As of now, the channel has more than 15,000 subscribers.

By Shaheer Riaz

Jazz Digit 1: the first 4G feature Phone

Jazz & Qualcomm have collaborated to launch First 4G Feature Phone under the #4GforALL initiative which is aimed at accelerating 4G deployment and usability in Pakistan. The forum has engaged the leading tech companies and various other stakeholders to shape regional and national ICT agenda to close the digital divide and make internet access for all a reality. A coalition with OEMs and ODMs under #4GforALL will make certain that entry-level 4G smartphones and tablets are developed and promoted in the country to bring positive results.

Jazz Digit 1 is the first device launched under #4GforALL banner. This feature phone has many advance specs that have not been seen in any feature phone so far.

Jazz Digit 1is an amazing feature phone that gives you the feel of a smartphone with its multi-touch support. The setting menu has all option which we see in any normal smartphone. Networks, Device, Personal, accounts, system are the main options in setting menu.

Social Media
Jazz Digit 1 has dedicated buttons for Facebook and Whatsapp through which you can directly access the application. The response time of these applications is really impressive and conversion to next page is really fast.

Camera
The camera section has 3MP back camera lens with standard VGA front camera furthermore, the camera setting has the option of white exposure, timer, photo quality, picture size, location, shutter sound and so many. The results of Jazz Digit 1 are better than many entry level smartphones.

Battery
The feature phones are famous for their battery timings. Jazz Digit 1 has an efficient Li-ion battery of 2000 mAh that gives 24 hour talk-time.

Network Connectivity
Besides being a 4G enabled feature phone, Jazz Digit 1 also has Wi-Fi connectivity option. Bluetooth available in Jazz Digit 1 has version is 3.0. It also comes with radio feature.

Processor
The highlight of Jazz Digit 1 is the Qualcomm Snapdragon 205 chipset. This chipset gives the 4G connectivity in the feature phone and entry level smartphone devices. It has baseband functionalities with the improvement in hardware components that includes RF front end, Wi-Fi, audio speakers and amplifier. This chipset is specially designed to give easy access to 4G technology. It also supports dual-core CPU at 1.1.GHz, VGA display at 480 pixels, not HD video streaming, support for dual SIM and support for 4G, 3G and 2G network.

The launch of 4G enabled feature phone is a great initiative for price sensitive market of Pakistan. It will help a number of people who can't afford smartphones but do have the appetite for mobile broadband.

3MP Rear Camera

VGA Front Camera

4G Accessible

Wi-Fi Hotspot

Dual SIM (Micro)

Qualcomm Snapdragon 205

2000 mAh Removable Battery

Bluetooth 4.1

Multi-touch support

Memory Card up to 16GB

Facebook

WhatsApp

Onsa Mustafa

The m-developments in Agriculture Industry
Plough up a Better Reap with m-Agriculture

Technology is evolving day by day, making our life easier and more convenient. For past few decades, we have witnessed rapid growth in the use of technology in our daily life. Use of technology is unspecific to a single field only; it has emerged in every field of life. Just like other fields, farmers have also become more dependent on IT technology and digital communications to manage their farm operations, crops and livestock. This new field of mobile technology is called m-Agriculture. It is a comparatively new phenomenon that is creating a rapid and dramatic impact on food production and farming.

In many agrarian countries, farmers suffer a lot due to the unavailability of modern resources, they are not well aware of the exact methods of harvesting and lack the proper training and knowledge to harvest the crops at precise time and take precautionary measures to increase the productivity. In countries where major portion of revenue comes from agriculture, use of m-agriculture can be of monumental help. Pakistan is a third world country with agrarian based economy. Agriculture is proven to be the backbone of the socio-economic values of the country. The Economic Survey 2016-17, stated that agricultural sector contributed about 19.53% approx. in GDP, with 42.3% labor force involved in agriculture.

> **M-Agriculture is a comparatively new phenomenon that is creating a rapid and dramatic impact on food production and farming**

The critical role of technology and agriculture in development of the country has urged the government and private sector to promote m-agriculture in Pakistan. All stakeholders in the industry have come forward to play a very active role in bringing technology into agriculture. Number of initiatives have been launched so far to facilitate farmers while all major industry players have come forward to capitalize on the immense potential offered by Digital Mobile technology, smartphone penetration and branchless mobile banking services to uplift the Agriculture Economy of the country.

Telecom operators are playing a very vital role in the development of agriculture sector through their enlarged mobile connections and additional value added services. Telenor and Jazz have launched their exclusive app based platforms to give access to the latest farming techniques, cures of diseases, information regarding livestock to be used for a specific crop, Weather information, Soil testing, Crop insurance, Fertilizers & pesticides application, Horticultural practices and every essential information for farmers to increase the yield and profitability.

With the support of m-agriculture, rural societies will have access to the latest information and techniques regarding agriculture. Pakistan's agriculture community consists of small farmers who are facing limitations in their day to day farming practices. It has resulted in lower per yield level than what is required to cater the nutritional needs of the population. The tech developments in the agriculture sector are quite impressive but there is still a lot of room for improvement. Here are suggestions.

> **With the support of m-agriculture, rural societies will have access to the latest information and techniques regarding agriculture**

Easy access to accurate market prices
Government and all other m-agriculture apps should provide the accurate information about the prices of crops before they move long distances to sell their crops. Farmers should be knowledgeable about the wholesale and retail prices of the crops so that they can improve their timings of getting crops to the market.

Micro-insurance
Just like in other countries, Pakistani government should also introduce such insurance policies to farmers to make them feel more secure. A micro-insurance company may protect farmers against poor weather conditions and climate disasters.

> **Telenor and Jazz have launched their exclusive app based platforms to give access to the latest farming techniques**

Instant weather information
Mobile technology provides farmers with crucial weather data so they can properly manage their crops. Some apps like Bakhabar Kissan are providing this facility. If the farmers know the weather condition beforehand, they would be in a better position to take precautionary measures to manage their crops.

Mobile broadband penetration
smartphone and MBB penetration is at heart of m-agri revolution. Under the collaborative program of Telenor and PITB, Connected Agriculture Platform Punjab, 500,000 plus eligible farmers were given 3G/4G-enabled smartphones along with free SIM cards and data bundles. To enable farmers to utilize the full potential of this platform, hundreds of facilitation centers and booths are set to be established across the Punjab. Similer initiatives should be started in other parts of the country as well.

Being an agrarian country, developments in agriculture sector are of monumental importance. Although the agriculture sector has witnessed impressive growth over the years but making this sector more digital will bring even better results.

By Shaheer Riaz

How Social Media is changing the Business World

I n amidst of times when the business world was not sparked by the dawn of Information Technology, it was not so easy for businesses to approach customers and vice versa. The inclusion of Internet has revolutionized how businesses are run, it has introduced new communication channels and business strategies. The Internet has brought us to a multidimensional and more effective business platform referred to as e-business or e-commerce. The revolution of the Internet with smartphones has further facilitated the easy use of the internet; whether you are in The Himalayas, African Sahara or any farthest place around the globe, it can accompany you almost everywhere.

The inclusion of Internet has revolutionized how businesses are run, it has introduced new communication channels and business strategies

Many researchers have inducted that the most of the companies use social media to grow their business and increase the annual profit. In current digital times, businesses must have social media to enhance their businesses. Social Media has become the most effective mode of communication between the business and the stakeholders. It supports in achieving many objectives such as product marketing, user response, and market expansion.

The most popular social media platforms to reach out customers are Facebook, Twitter, LinkedIn and Instagram among many others. The main purpose of using social media platform for your business is to improve the relationship between customer and the company. It has been observed that the more involved you are on social media the more positive response you will get from the customers. You just need to maintain your product quality to make a great impact which will result in customer satisfaction and positive market reputation.

Social Media has become the most effective mode of communication between business and the stakeholders

Facebook is one of the most widely used social media platform to stay in contact with friends and family. It has also become an important business platform as well. Another essential plaform to grow your online business is YouTube, you need to make useful videos of your content and products. Publish them with good keywords and catchy thumbnails to create a good impression on others. It is a great platform on which you can promote your products and teach the audience in a very easy way. Just keep in mind one thing that the quality of your video should be good otherwise no one would bother to watch it. LinkedIn is one of the

fastest growing online platforms that is used by individuals and businesses alike. You can promote your business in different teams even if you don't personally know them. One thing that you should always keep in mind is that social media trends change rapidly, you've got to stay up-to-dated if you want a successful social media presence.

The mobile operators are giving very affordable bundles for customers because they know that Social media can play a pivotal role in the promotion and expansion of any business

Use of Social media platforms is also increasing in Pakistan. The mobile operators are giving very affordable bundles for customers because they know that Social media can play a pivotal role in the promotion and expansion of any business. In an emerging economy like Pakistan, smartphones and social platforms have played a big part in increasing internet penetration.

There are number of ways through which social media can help run a better and profitable business.

Social Media has opened up new doors of employment in emerging markets like Pakistan

Gain valuable customer insights
It generates reliable customers and it's rather more powerful than the physical market business. Business can gain an insight in any variation in customer demand and

By Rizwana Khan

preferences. It is a much easier and quicker medium to get to know the customers better.

Increase Brand Awareness and Loyalty

When you are online you connect with more people and it increases customer loyalty with your brand and you can interact with more people very easily.

Most major social networks, including Facebook, Twitter, Pinterest, and Instagram, offer free mobile apps that let business owners manage their presence on-the-go

Run targeted ads with real time Audience

Ads are the most powerful tool to promote your business and if you are doing online business then you should promote it by making video ads on LinkedIn, YouTube and Facebook.

Generate Higher Converting Leads

The more you are online the more customers you attract; this is the best way to generate highest sales in the world of social media marketing.

Provide Rich Customer Experience

One to one and on-time interaction will provide a rich customer experience and help in building strong and long-lasting relationship that are the key for successful business.

Increase Website Traffic and Search Ranking

The social media marketing always demands best SEO and if the SEO of your web content is good then it will bring you more traffic and customers.

Find out what your competitors are doing

When you have online presence, you have a better chance to explore the strengths and weakness of your competitors to gain an edge over them. This way, you can get to know that how much improvement you need in your business and how you can get more customers.

Faster and easier Content Sharing

Social media is a fast and effective medium of getting your message to larger audience in a short span of time.

Today, a large population around the world is using smartphones and more and more businesses are offering mobile-friendly experience. The benefit of the increased presence of mobile activity in our daily lives is huge for small businesses. Most major social networks, including Facebook, Twitter, Pinterest, and Instagram, offer free mobile apps that let business owners manage their presence on-the-go. Social media has provided a very cost effect platform to start and promote businesses. It is especially very helpful for small businesses that do not have lot of capital to invest in their business.

Social media has provided a very cost effect platform to start and promote businesses. It is especially very helpful for small businesses that do not have lot of capital to invest in their business

Many people have started selling their products and services through Facebook, Whatsapp, Instagram and YouTube. This has opened up new doors of employment in emerging markets like Pakistan. By using it to learn more about your customers, engage with your audience, and extend your brand reach, you'll be converted before you know it.

Smart Moves for Smarter Nation

● Farmers to use Drone Technology in Pakistan for Good Yield

Government of Punjab has allowed Farmers to use Drone Technology in Pakistan for Good Yield. The use of Drone will enhance productivity of different crops. Farmers who are interested to use this technology will have to submit application to agriculture deputy director of their relevant area. He will refer the application to the designated official.

Proper analysis will be carried on and farmer will be granted no objection certificate after specifying the area, time and duration for the use of drone technology. Government of Punjab is also planning to appoint a police officer with the operator at the time of flying.

● Government Launches Roshan Pakistan App for Electricity Consumer

Roshan Pakistan App will help consumers know the real time electricity billing and supply situation. Minister for Power said: "Government focused on building generation capacity during its first four years and would now move towards consumer-oriented services and transparency". He also said that 5,297 feeders out of a total of 8,600 are declared free of load shedding. Now government will give public info regarding live power situation that used to be available to ministers and secretary only. Roshan Pakistan App will now ensure transparency in power system. It will also provide

information to general public regarding, consumption, supply, and billing. People will also be able to calculate bills online.

● Pakistan Makes its First Electronic Islamic Banking Transaction Through PMEX

This is a landmark achievement in the history of Pakistan, which has the potential of bringing Islamic banks on par with their conventional counterparts in terms of managing excess liquidity in a convenient, transparent and Shariah-compliant manner. Islamic Financial Institutions (IFIs) can utilize this facility to deploy liquidity to all potential segments, including the government.

The product will not only allow the country's Islamic Financial Industry to manage their liquidity needs but would also provide opportunity to banks as well as the government to meet their financial needs in a Shariah-compliant manner in addition to enabling SBP to offer Shariah-compliant liquidity management solutions to banks.

By Shaheer Riaz

Xiaomi Redmi
Note 5A Prime

Display & Design

Xiaomi Redmi Note 5A Prime is a middle-range smartphone with some great features. It is a 5.5 inch device with around 72% of the screen to body ratio and 320 dpi while the screen supports only 720 pixels.

Redmi Note 5A Prime is a bezel-less smartphone with smooth edges. The back body is very simple and neat with back camera lens and LED light on its top side.

Camera

Xiaomi Redmi Note 5A Prime has a 13MP back camera with a 1/2.3 sensor while the front camera has 16MP sensor with an f/2.0 focal point. In Intelligent Auto mode, the camera's beautification feature is set by default so if you don't like that you can switch it off manually. The results of selfie camera are exceptionally beautiful.

Memory

Xiaomi Redmi Note 5A Prime comes in two varients, one with 2GB RAM and 32GB ROM while other with 4 GB RAM and 64GB ROM. It provides the facility of external micro SD card support of upto 256GB.

Processor

Xiaomi Redmi Note 5A Prime has 1.4 GHz octa-core processor with Qualcomm MSM8940 Snapdragon 435 chipset that provides rich features of a high-end smartphones.

It has integrated LTE technology 4X dual image signal processor with brilliant graphics and better battery life.

Qualcomm snapdragon

4GB RAM is a plus point of Redmi 5A Prime because it gives fast performance and we did not observe any delay or lag while multitasking.

Battery Performance

The Xiaomi Redmi Note 5A prime has Li-ion battery of 3080 mAh. It has fast charging technology that charges the phone in one hour and 15 minutes. It gives 10-12 hours talk time and 20-23 hours of standby time.

Benchmarking

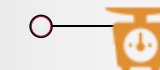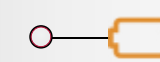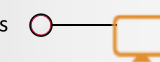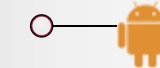| Velamo		
Multicore	1394	
Metal	1225	
Chrome Browser	2006	

Antutu **45281**

Specs

OS: Android v7.0 (Nougat)

Display: 5.5 inches

Battery: Non-removable Li-ion 3080 mAh

Weight: 153g
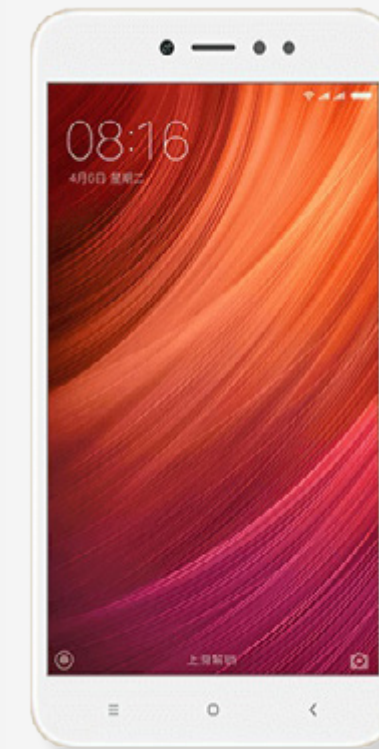
Camera: 13 MP, Autofocus, LED flash

Memory: 2/4 GB RAM, 32/64 GB ROM

Processor: Octa-core 1.4 GHz

Price: PKR. 20, 900/-

Overview

|	
Display & Design	★★★⯨☆
Camera	★★★★☆
Battery	★★★⯨☆
Price	★★★★☆

Overall Score

3.8

★★★⯨☆

Final Verdict

Xiaomi Redmi Note 5A Prime is a perfect mid-range device with brilliant features like 4GB RAM, 13MP back camera, and 16MP front camera. We have tested every section of Xiaomi Redmi Note 5A Prime and it has performed very well.

TELECOM CAMPAIGNS

By Fizza Atique

The advertising campaigns play a vital role in promoting a brand/product. A truly memorable campaign creates a visceral response – but one bad campaign can ruin it all. PhoneWorld keeps a close eye on the latest ad releases in telecom industry. Here is a critical review of the latest telecom campaigns.

Techno Camon I

4.2

TECNO Mobile, a premium smartphone brand has launched its ad campaign for Camon I, which has a techno magic 13 MP rear and front camera with Quad LED rear flash and Dual Selfie front flash. The TVC is a part of the 360-degree campaign for TECNO's Camon I. This TVC highlights a day in Girl's life with her selfies right from morning till night. The TVC shows off Camon I camera skills of capturing magical shots in any light.

Verdict: *Extravagant TVC.*

TECNO FULL VIEW DISPLAY

Ufone Befikri

4
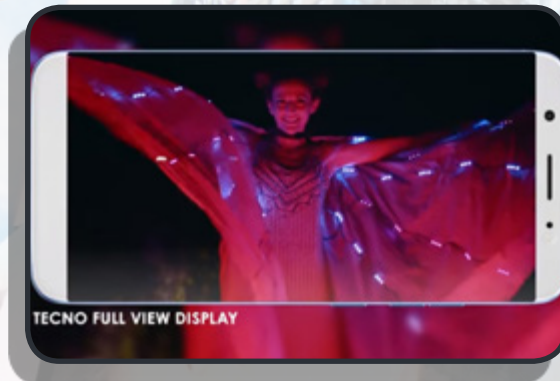
Ufone has launched a new TVC under the umbrella of their Befikri campaign. This advert focuses on Pakistanis who help each other in every possible way. In this campaign, Ufone tries to bring its viewers' attention to its extensive services in Pakistan. The advert is a successful attempt to attract users while mainly focusing on its "Befikri" offer that gives 1GB internet at only Rs. 100/week. Acting, Background music, dialogue delivery-everything is perfect.

Verdict: *Great Effort!!!*

Pakistan ki #befikri

Careem Bike

5

Careem has launched Careem bike service in Rawalpindi and has hired Shoaib Akhtar as the brand ambassador. The tagline of TVC is, "Mein hu Shoaib Akhtar and yeh hay meri kahani". It is a very good and well scripted TVC recorded in the old house of Shoaib Akhtar from where he started his career. The TVC has a simple and honest plot that nicely conveyed the message to the target audience. The background music is also spot-on and has done justice to the entire theme of ad.

Verdict: *Excellent TVC*

PTCL Unlimited Broadband

4

PTCL has launched unlimited internet offer targeting the joint family system with the tagline "one connection for entire family". This is a better attempt on PTCL's part if we compare it with previous TVCs by PTCL. Music, acting and concept wise it is a job well done.

Verdict: *Bohat Improve kia hay apne!*

Huawei Mate 10 Lite

4.5

Huwaie Mobile has launched a TVC for Huawei Mate 10 Lite featuring Urwa Hocane. The name of campaign is "How to take stunning selfies with Huawei Mate 10 Lite". The focus of this advert is on exceptional camera features of Huawei mate 10 Lite. Urwa Hocane showcased how easy it is to take selfies in busy environment, in dark and in sunlight. The advert is quite creative, the background music and performance of Urwa has done justice to the overall theme of this commercial.

Verdict: *Great and marvelous TVC.*

E-Ilaj

4.5

KPITB has launched an awareness TVC for the newly launched program E-Ilaj. It is a patriotic TVC with the tagline, "Yeh Be Pakistan Hya". This is a very good initiative and will help people to get health care facility at their door steps. KPITB hans tried to convey the message that this is a digital age and distances should not make any difference. The overall background music and actors have done justice to the theme of TVC.

Verdict: *Mehfil Loot Li!*

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Avenue, Blue Area, Islamabad

One Plus 5T

OS: Android v7.1 (Nougat)
Display: 6.0"
CPU: Octa-Core 2.2GHz
Camera: Dual 16 MP, LED flash light
Memory: 64 GB ROM, 6 GB RAM
128 GB ROM, 8 GB RAM

Samsung Galaxy A8

OS: Android v7.1 (Nougat)
Display: 5.6"
CPU: Octa-Core 2.2GHz
Camera: 16MP, LED Flash
Memory: 64 GB ROM, 4 GB RAM

QMobile QInfinity

OS: Android v7.0 (Nougat)
Display: 5.7"
CPU: Quad-Core, 1.4GHz
Camera: 13MP, LED flash
Memory: 32 GB ROM, 3 GB RAM

Sony Xperia XA1 Plus

OS: Android v7.0 (Nougat)
Display: 5.5"
CPU: Octa-Core 2.1GHz
Camera: 23 MP, LED Flash
Memory: 32 GB ROM, 3/4 GB RAM

Xiaomi Redmi Note 5A Prime

OS: Android v7.0 (Nougat)
Display: 5.5"
CPU: Octa-Core 1.4GHz
Camera: 13 MP, LED Flash, Autofocus
Memory: 64 GB ROM, 4 GB RAM

Nokia 8

OS: Android v7.1 (Nougat)
Display: 5.3"
CPU: Octa-Core 1.7GHz
Camera: 13MP dual, LED flash
Memory: 64 GB ROM, 4 GB RAM

Huawei Mate 10 Pro

OS: Android v8.0 (Oreo)
Display: 6.0"
CPU: Octa-Core 2.4GHz
Camera: 12MP dual, LED flash
Memory: 128 GB ROM, 6 GB RAM

Sony Xperia XA2 Ultra

OS: Android 8.0 (Oreo)
Display: 6.0"
CPU: Octa-core
Camera: 23 MP, Autofocus, LED flash
Memory: 32/64 GB ROM,

One Plus 5

OS: Android v7.1 (Nougat)
Display: 5.5"
CPU: Octa-Core 2.2GHz
Camera: Dual 16 MP, LED flash light
Memory: 64/128 GB ROM, 6/8 GB RAM

Samsung Galaxy J7 Max

OS: Android v7.0 (Nougat)
Display: 5.7"
CPU: Octa-Core 2.4GHz
Camera: 13 MP, LED Flash
Memory: 32 GB ROM, 4 GB RAM

QMobile LT300

OS: Android v7.0 (Nougat)
Display: 4.5"
CPU: Quad-Core, 1.3GHz
Camera: 5 MP, LED Flash,
Memory: 8 GB ROM, 1 GB RAM

Infinix Zero 5

OS: Android v7.1, (Nougat)
Display: 6.0"
CPU: Octa-core 2.6 GHz
Camera: 12MP+13MP, LED flash
Memory: 64 GB ROM, 6 GB RAM

Blackberry Priv

OS: Android v6.0 (Marshmallow)
Display: 5.4"
CPU: Dual-Core 1.8GHz
Camera: 18MP, LED flash
Memory: 32 GB ROM, 3 GB RAM

LG V30 Plus

OS: Android v7.1 (Nougat)
Display: 6.0"
CPU: Octa-Core
Camera: 16 MP, LED flash
Memory: 128 GB ROM, 4 GB RAM

Oppo A83

OS: Android v7.1 (Nougat)
Display: 5.7"
CPU: Octa-core 2.5GHz
Camera: 13MP, LED flash light
Memory: 32 GB ROM, 3 GB RAM

Oppo A71

OS: Android v7.1 (Nougat)
Display: 5.2"
CPU: Octa-Core 1.8GHz
Camera: 13MP, LED flash, Auto-focus
Memory: 16 GB ROM, 2 GB RAM

TOP MUST HAVE APPLICATIONS & GAMES FOR YOUR SMARTPHONE

By Maryam Arshad

Typeshift
Rating : 4.5   Price: Free

From the creator of SpellTower, comes a new and completely original word game. Anagrams meets Word Search, with a sprinkle of Crosswords. Typeshift is the modern anagram puzzle; re-imagined from the ground up, combining wordplay, modern game design, and a mobile-first approach.

Finger Driver
Rating : 3.5   Price: Free

Love driving? You will love this game for sure. Spin the steering wheel to drive your car. Keep it on the road, and go as far as you can.

Selfissimo!
Rating : 3.8   Price: Free

Strike a pose and the camera will definitely love you! Selfissimo! uses experimental research technology from Google to capture photos automatically each time you pose, encouraging you to capture your best self.

HackCell
Rating : 4.3   Price: Free

Place the generators efficiently to build stronger units!
Upgrade and mix units that have various skills. Build your own army to defeat the enemies and destroy their king. Stronger enemies will appear before you. This is a simple, but addictive strategy defence game.

Linkfy - Never Miss a Link
Rating : 3.8   Price: Rs 110

Linkfy is the best tool for your links. Save, copy, share. Everything on your phone. You only need install the app and then it will be another tool on your phone. If you have a shortened link make sure you know where you are going before, it is one of the functions of Linkfy. If you want to save it for later, just do it. Share with Linkfy it's not a problem.

Scheduled — Schedule Your Text Messages
Rating : 2.4   Price: Free

The only app to schedule written text messages for messengers. It supports: Messages/SMS (with Auto Send), Facebook Messenger, Line, Whatsapp, Telegram, Twitter, Slack, WeChat, LinkedIn, Skype and Phone.

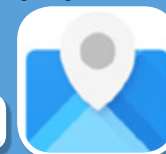## Remindee - Create Reminders from any App!
Rating : 4.7   Price: Free

Remindee is the minimal, content-focused reminder app you can use to create reminders from anywhere. You can even create a reminder just by copying some text! Useful when you want to create a reminder based on a message you've just received.

AR Stickers
Rating : 4.6   Price: Free

Use the Pixel camera to bring your stories to life with animated and interactive AR Stickers - Infuse your photos and videos with your favorite characters, express yourself with playful emoji and set the scene for your very own adventures.

Mapapers
Rating : 4.4   Price: Rs 120

Mapapers is a wallpaper app that makes a map creating beautiful wallpapers that fit perfectly with your smartphone. Just pick a style, search any location you want, and press the save button. As simple as that.

Now Playing History
Rating : 4.5   Price: Rs 199

Now Playing History shows a history of all the songs you've listened to, sorted by date. Never miss a song again! You can tap on an entry to listen to the song in your favorite music player (customizable) and mark individual songs as „favorite". The app can optionally fetch additional details (such as the album name and album cover) for each song. An optional map-feature allows you to see where you've listened to each song.

Grammarly Keyboard — Type with Confidence
Rating : 4.0   Price: Free

The Grammarly Keyboard helps you write mistake-free and with ease in any app you use on your mobile device. It provides hundreds of checks and features, along with seamless integration. Whether you're sending an urgent email, important LinkedIn message, or essential Facebook post, you can write from your phone with confidence.

The Walk: Fitness Tracker Game
Rating : 3.1   Price: Free

Created with the NHS and the UK's Department of Health, The Walk helps you walk more, every single day. When you're playing The Walk, every step counts. A bomb explodes in Inverness station, and you're given a package that could save the world. To stay alive, you'll need to walk the length of the UK. The Walk is more than just a great pedometer/step counter — it's a way to turn walking into a journey, a challenge, and a rip-roaring adventure.

Be My Eyes - Helping the Blind
Rating : 4.9   Price: Free

Lend your eyes to a blind person in need through a live video connection or be assisted by the network of sighted users. Be My Eyes is all about contributing and benefiting from small acts of kindness, so hop on board and get involved!

SAMSUNG launches new Galaxy A8/A8+ and Grand Prime Pro Smartphones

Vivo, a leading young brand in the global mobile phone market and one of Qualcomm's key partners, has signed a memorandum of understanding worth 4 billion U.S. Dollars with Qualcomm. The signing of this memorandum of understanding signifies Vivo and Qualcomm's technical partnership and patent sharing. It will also ensure Vivo's leading position in mobile-related technologies.

The President of Samsung Pakistan - Mr. Y.J. Kim stated that: "With the objective of expanding the Galaxy A8 family, the A8 and A8+ are the perfect mid-ranging smartphones for the consumers. The value of these devices lies in their advanced features and functions that offer more convenience than ever before. The Grand-Prime Pro is enriched with many fascinating technologies, including a Super AMOLED screen that delivers crystal clear viewing, whereby this phone also enjoys great popularity among the Pakistani consumers."

The A8 has a 5.6 inch touch-screen, while the A8+ comes with a 6 inch touch-screen, comprising of 2.5D glass on the front and 3D curved glass on the back for added durability. These Infinity display screens deliver a crisp HD resolution (1,280 x 2220), to bring out the finest detail, while offering a wide horizontal view and stunning cinematic experience. The 'Always On Display' keeps the user informed at all times, as it allows you to view information at a glance without unlocking your phone.

These smartphones are powered by 1.6GHz Octa-core processor and both the devices come with 4GB of RAM. They have an internal storage capacity of 64GB, that can be expanded up to 256GB via an external memory card. The 'Samsung Pay' feature enables you to complete financial transactions more quickly and easily, using your phone.

For the first time in the Galaxy A series, the Galaxy A8 and A8+ feature a 16MP+8MP F1.9 Dual Front Camera, with an impressive bokeh effect. The 'Live Focus' feature allows you to adjust the background blur. 16MP F1.7 rear cameras with low-aperture lenses capture high-quality images in low-light conditions. The Digital Video Image-Stabilization technology eliminates shaky footage, while the camera also offers a hyper-lapse feature to create time-lapse videos.

These devices give amazing power to multi-task swiftly. The Galaxy A8 has a 3000 mAh battery, while the A8+ is powered by a 3500 mAh battery, enabling the phones to perform consistently for many more hours. Both devices have an IP68 rating for water and dust-resistance.

RIVERSONG

Globally Renowned Smart Devices Manufacturer Riversong Finally Launches in Pakistan

Riversong, global smart accessories manufacturer with its presence in 17 countries, has officially launched an entire range of products in Pakistan. Riversong is globally renowned for making affordable yet high-quality products. The smart accessories manufacturer has entered the Pakistani market on seeing tremendous growth opportunities and a high penetration rate of mobile phones in Pakistan.

At the time of launch, Riversong unveiled affordable Bluetooth wireless earphones, fitness bands, power banks, and other audio accessories. The entire portfolio of these products is available to the users across the country both online as well as offline.

For the first time in Pakistan, Riversong is offering replacement warranty under which customers can get a new device, with no questions asked, if there is a malfunction with their current device. Such warranty replacement offers are unprecedented in Pakistan.

Ali Yousuf, the COO of Riversong, said,

"*We have received exceptional feedback in all markets. We believe that Pakistanis are going to love our products. We always strive to provide affordable yet very premium in quality products which makes our offering very unique*"

He further added,

"*Riversong is focused on bringing slick, innovative and people-oriented smart devices into the mainstream. Pakistan is a country with the highest mobile phone penetration in the region and people are migrating to smartphones quickly. We believe this technology-friendly market holds a lot of potential for high-quality products. We are focused towards bringing a range of state-of-the-art smart devices with an exceptional customer experience. Riversong stands for a technologically equipped and well-connected Pakistan*"

Riversong's presence in Pakistan will provide more options for tech gadgets' consumers in the region. Pakistani consumers can now get sleek designed fitness trackers, appealing power banks, classy and elegant wireless earphones and wifi adapters by Riversong online with the shipment. TikTech, the official distributor for Riversong, is making all the products available for the customers across the country. Riversong products are also displayed nationwide at Alfatah, Metro, and Hyperstar shopping centers.

Additionally, Riversong will launch the new range of products in Pakistan as per their international launch schedule.

PERFECT ON-PAGE SEO

16 KEY ON-PAGE SEO FACTORS THAT SEARCH ENGINES & USERS LOVE

Start Title Tag with Your Keyword

Your title tag is the most important on-page SEO factor. The closer the keyword is to the beginning of the title tag, the more weight it has with search engines.

Add Modifiers to your Title

Adding modifiers like "2016", "best", "guide", & "review" help you rank for long tail versions of your target keyword.

Leverage SEO-Friendly URLs

Avoid ugly URLs:
backlinko.com/10-12-17/category/articletitle
Make your page's URL short and keyword rich:
backlinko.com/your-keyword
An industry study found that shorter URLs rank better in Google.

Add New Post

On-Page SEO Guide: Anatomy of a...

http://backlinko.com/on-page-seo

Wrap your Title in an <h1> Tag

The H1 tag is your "headline tag". Most CMS's (like WordPress) automatically add the H1 tag to your blog post title. Some themes override this setting. Check your site's code to make sure your title gets the H1 love it deserves.

Dazzle with Multimedia

Engaging images, videos and diagrams can reduce bounce rate and increase time on site: two critical user interaction ranking factors.

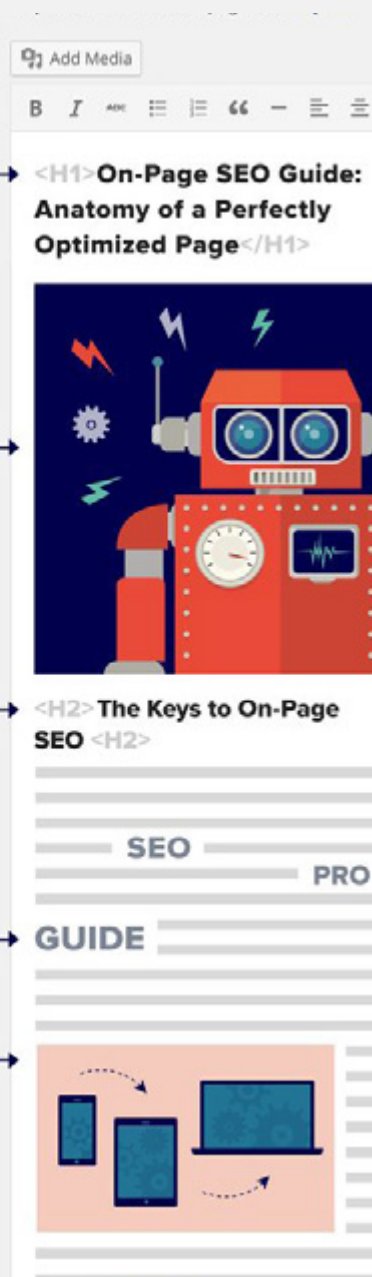### Wrap Subheadings in H2 Tags

Include your target keyword in at least one subheading... and wrap it in an H2 tag.

Drop Your Keyword in First 100 Words

Your keyword should appear in the first 100 words of the article.

Responsive Design

Google started penalizing mobile unfriendly sites in 2015. And they're likely to crack down even more in the future. If you want to make your site mobile-friendly, I recommend Responsive Design.

Add Media

<H1>On-Page SEO Guide: Anatomy of a Perfectly Optimized Page</H1>

<H2> The Keys to On-Page SEO <H2>

SEO PRO GUIDE

Use Outbound Links

Outbound links to related pages is a relevancy signal that helps Google figure out your page's topic. A recent study found pages with outbound links outrank pages without outbound links.

Internal Links

Add 2-3 internal link to every post. If you want to see a great example of internal linking, check out Wikipedia.

Boost Site Speed

Google has stated that page speed used as a ranking signal. And MunchWeb found that 75% of users wouldn't re-visit a site that took longer than 4 seconds to load. You can boost your site speed by using a CDN, compressing images, and switching to faster hosting.

Sprinkle LSI Keywords

LSI keywords are synonyms that Google uses to determine a page's relevancy (and possibly quality). Sprinkle them into every post.

Image Optimization

Make sure image file names include your target keyword (for example, on_page_SEO.png) and that your target keyword is part of your image Alt Text.

WIKIPEDIA.NET

CNN.COM

DISCOVER MORE SEO TIPS

VISIT OUR HELP PAGE

ON-PAGE OPTIMIZATION

ON-PAGE SEO CHECKLIST

OFF-PAGE SEO FACTORS

Alt Text: 'On-page Optimized Image'

Use Social Sharing Buttons

Social signals may not play a direct role in ranking your site. But social shares generate more eyeballs on your content. And the more eyeballs you get, the more likely someone is to link. A study by BrightEdge found that prominent social sharing buttons can increase social sharing by 700%.

Word count: 1,890

Post Long Content

The SEO adage "length is strength" was supported by a Backlinko industry study which found that longer content tends to rank significantly higher on Google's first page.

Boost Dwell Time

If someone hits their back button immediately after landing on your page, it's a sign of a low quality page. That's why Google uses "dwell time" to size up your content's quality. Increase your average dwell time by writing long, engaging content that keeps people reading.

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