



PAKISTANIS LEADING THE CEO LEAGUE

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Internet of Things?



Competing for Spectrum:
4G Auction
Considerations



Device Review

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Q Mobile

M6

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Adnan Khan
Managing Editor

Dear Readers,

We are at the crossroad of another historical event as the preparations for next spectrum auction are already underway. This time PTA has announced the auction of remaining 10 Mhz of 4G spectrum in 1800 Mhz band. This last 4G auction is quite important as it will pave the way for eventual evolution to 5G. Whoever wins this auction will get a stronger position in broadband market. We have tried to build up scenarios for each operator to determine how it can benefit from the additional spectrum. You can read the detailed analysis in our article "Competing for Spectrum: 4G Auction Considerations".

Our feature article this time is the sequel of our previous article in which we have evaluated and ranked the CEO of each mobile operator as per his achievements and qualities. Phoneworld team has done an extensive research to benchmark the mobile leadership by setting few HR parameters and appraised each leader accordingly. Our second feature article deals with Internet of Things and how it will shape the future. In one of our article we have also discussed the rise of Chinese smartphone brands in the world and more specifically in our local market. The focus of this article is on the distinctive features of Chinese brands that have enabled them to capture bigger portion of the market.

In our interview section we have two exclusive interviews this time. The first interview is of Gordon Readman and William Rudolph from GSMA Marketplace. In a short and conclusive session with our team they gave an insight on how businesses can make use of GSMA Marketplace to expand their business. While in our second interview session we have discussed the Nokia's revival with Patrick Mercanton, Head of global marketing strategy & planning at HMD Global.

Our regular sections include phone reviews, Smart moves, TVC reviews, top applications, tech twist, personality corner and smartphone wish list. We always try to bring something new and interesting for our readers, we hope you guys will appreciate our efforts and give us your feedbacks so that we can improve further.

Enjoy Reading...!!!

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PAKISTANIS LEADING THE CEO LEAGUE

PhoneWorld team's first relative benchmarking of mobile operators' CEOs last year gained immense popularity both among our readers and the industry. This time we are sharing our second report of currently serving four CEOs, three of whom assumed roles during 2016

The telecom sector of Pakistan has undergone phenomenal changes since the arrival of mobile network companies in the country. Pakistan had just 5 million mobile phone users till 2004. Who could have thought of such a mind blowing increase in this figure? Today, Pakistan has more than 137

million mobile phone users, over 38 million 3G/4G subscribers and an annual 70% cellular tele-density rate. Pakistan has magnificently emerged as a success story in the last few years with policy papers, fair & free inclusive transparent spectrum auctions, competitive tariffs, logarithmic increase in mobile broadband (MBB) penetration rate and



By Saima Ibrahim

sudden uptake in ICT technology incubation and entrepreneurship programs etc. It is due to the dedicated efforts of the ICT leadership that today Pakistan is winning international awards like "Glomo GSMA Best Government Leadership & Women financial inclusion Awards" at forums like the Mobile World Congress (MWC) 2017. The telecom sector and specifically the mobile companies have helped other industries through m-Services like m-Agriculture, m-Banking, m-Government, m-health, m-education etc., to bring innovation and advancement in the country. These accomplishments could not have been achieved without the implausible and dedicated leadership contributions of all mobile companies of Pakistan.

The success story of Pakistan mobile industry is evident as we have crossed 137 million mobile phone users with over 38 million 3G/4G subscribers and an annual 70% cellular tele-density rate

A CEO is the highest-ranking executive in a company, and his primary responsibilities include making major corporate decisions that shall result in making the overall operations a success. Someone with great leadership skills like Bill Gates who, despite early failures, with continued passion and innovation has driven Microsoft and the software industry to success. Just as the job of a CEO is difficult, the evaluation of a CEO's personality based on his skills and attributes is also the hardest task to be done. Therefore, PhoneWorld team has tried to benchmark the mobile leadership by setting some HR parameters and judging each leader according to them; but more importantly his achievements in the last year or so. The data and information for benchmarking has primarily been taken from the publically available sources and we have also tried to contact individual companies and leaders to provide as much information as possible. This not only will help CEOs to evaluate their performance but it will help general public and industry people to know more about the telecom leadership. It was quite a challenging task as some of them did not provide the required information for unknown

reasons that definitely have impacted their relative position.

Also, as before we have used the theme of "Justice League" which is an assemblage of superheroes who work together as a squad. It is the A-Team of warriors with some super-powers that enable them to handle all type of situations. Just like "Justice League" heroes, a CEO of a company is nothing less than a "Superhero". He can make quick & effective decisions; he is a team player who is commitment to the work, innovativeness, risk-taking and visionary. Keeping in view the Justice League idea like before, we have drawn the 2nd comparison of Pakistan's mobile operators CEOs in this article analyzing their skills, attributes and the reputes they have in the industry.

Our criteria for this year's analysis are also quite similar to the previous one with some improvements of course. One major difference to last benchmarking is that more weightage almost half of the total points are given to recent achievements during the course of their current assignment in the last year or so. In the first part, we have tried to measure the "Leadership Qualities" of the CEOs of Jazz, Telenor, Zong and Ufone on three fundamental parameters i.e. Education, Experience and Achievements with more weightage to the later as indicated. In the second part of the article, we will move on to the "Leadership Attributes" of the CEOs personalities which are equally important. We have given each indicator a separate weightage with grand total of hundred. Final position has been given according to the total points secured by each CEO.

Leadership Qualities

"Leadership is the capacity to translate vision into reality"

Warren Bennis

Effective leadership is important because it encourages a professional and positive environment in an organization. Let's have a look at the relative standing of each telecom CEO as we based on their education, experience and achievements.

Education (Total: 10 points)

Specialization in a relevant field always gives priority whenever an HR expert looks at ones profile. Only relevant education along with experience and knowledge leads an individual

to top level position. In today's advanced world, the preferable educational combination could be technology and business specialization but still let's have a look at the education of Liu Dianfeng (CEO Zong) and other three newly hired CEOs of mobile companies including Aamir Hafeez Ibrahim (CEO Jazz), Irfan Khan Wahab (CEO Telenor) and Rainer Rathgeber (CEO Ufone).

Irfan Wahab and Aamir Ibrahim have very proper educational background for the top level position in a telco company. Irfan Wahab has done BSc. Electrical Telecom Engineering from UET, Lahore and MSc in Mobile and Personal communications engineering from University of Westminster London UK. Not only the basic level education, Irfan also got lead due to his exclusive executive qualification like Financial Management program from Harvard Business School (HBS), Executive diploma in Marketing from London Business School and Advance Management Program in Business Management from INSEAD (SG). Another praiseworthy program attended by Irfan is the "Global CEO Program" in the field of Business Administration and Management from the University of Pennsylvania; which is more than relevant for the position of a CEO; hence we have given Irfan 9 points in this category.



Similarly, Aamir Ibrahim has also completed his education from reputable institutions with relevant educational degrees which include MBA from IMD (International Institute for Management Development) and BBA Accounting from The University of Texas. He has also done Advanced Management Program (AMP) from Harvard Business School; which is a plus point. Therefore we have given 8 points to Aamir, if he had done any technical subject it could have really not only helped him with this benchmarking but would have been of immense help in his illustrative career.

Mr. Liu Dianfeng, CEO Zong has done his master degree from Chinese Academy of Sciences and has done Executive MBA from Cheung Kong Graduate School of Business, which is supposedly a very prestigious school but when it comes to a full time business study against an executive program surely more weight has to be given to fulltime programs. While the combination of study is quite relevant but Chinese Universities do not rank very high, therefore, Dianfeng is at number three position with 7 points.

Irfan Wahab has a combination of technical and business studies with various post graduate certifications, that give him an edge over the others

Rainer has done his master degree in Economics from a German institute. His Economics degree is rather very well suited for Ufone's current failing financial situation but as said it is very essential to have a good technical background if the company is to adopt a well thought technology strategy specially on spectrum acquisition and refarming, so very important to Ufone. PTA's decision on the forthcoming spectrum auction of the leftover 10 MHz in 1800 MHz would be his litmus test for any effort to turn around the company that has been trying to refarm the spectrum with PTCL. Rainer according to his educational background is ranked on 4th position with 6 score.

Experience (Total: 10 points)

After education, comes management experience especially that is relevant to the mobile or telco industry matters more. Generally, companies prefer candidates with experience in multiple disciplines, markets and services in the mobile eco-system. Fortunately, all the present telecom CEOs come from well reputed organizations and have also worked across different countries and continents which is evident from the prospering mobile sector of Pakistan too. This has made our task of ranking them even more difficult.

Mr. Rainer has 21 years of experience in the Telecommunications Industry in consulting and industry roles across 4 continents. Rainer started his career from "Roland Berger", a leading global

strategy consulting firm headquartered in Munich, Germany with 50 offices in 36 countries. In 2002, he joined "Deutsche Telekom Group" where he initially held the positions of Head of Strategy for T-Mobile Germany and Executive VP Sales and Service Strategy for T-Mobile International. In 2004, he became the Executive VP Market Management for T-Mobile International. Having served the Group for 4 years, he was appointed in 2006 as CEO of T-Mobile Croatia, so his elevation to the top job is almost more than a decade back.



In 2009, Rainer moved back into Deutsche Telekom Group and again held two important roles. He was the Senior VP Marketing Europe with responsibility for 13 countries and a customer base of 125 million. In addition to this role, he held area management responsibility equivalent to the role Chief Regional Officer for OTE Group Deutsche Telekom's 6 entities across 4 countries covering Greece, Romania, Bulgaria and Albania. Rainer has an extraordinary experience in strategy formulation and operations in very mature markets that could be very important for devising a multi-dimensional strategy for the declining health of Ufone; so we have given him 9 points.

The success story of Aamir Ibrahim in his professional career puts him 02nd on our benchmarking list. Aamir joined Mobilink in 1994 as GM marketing & strategy and is presently the CEO of same company. Aamir has over 23 years of working experience in blue-chip companies, across 3 different continents and sectors including mobile telecoms and automotive. From Mobilink, he switched to automobile industry in 2003 and joined 'Jaguar & Land Rover' as the Head of Sales Operations. His other venture in the automobile sector was at 'Ford Motor Company' after which Aamir returned to telecom sector. All these are world renowned companies. In the telecom industry, Aamir remained part of Warid, Mobilink and

Telenor both in Pakistan and at Group level. He served at C-Level with positions like CEO of Warid, Senior VP at Telenor Group and also CMO & VP Commercial Division and CEO TLC. VP Strategy & Corporate Affairs at Telenor Pakistan.

Irfan Wahab also has 23 years of experience but only in telecom sector which puts him after Aamir. He served in various positions within Telenor Group both in Asia and Europe, including VP Devices and Vice President - Head of Asia Distribution. He started his professional career in Orange UK as BSS Engineer in 1994 and joined PTCL as Senior Consultant in 1996 for 2 years. After some international ventures like T-Mobile, Telcordia Technologies and Ericsson; Khan came back to Pakistan and became the Director Telecom at MolTT. He has also remained Executive VP and CEO Telenor LDI Ltd at Telenor Pakistan for 5 years. In 2009, he was elevated to the position of VP Devices at Telenor Group where he successfully devised Group Device strategy for handset bundles and device portfolio across 11 countries. These experiences led Irfan to further rise at even higher level positions and eventually became the Vice President- Head of Distribution Asia at Telenor ASA. This gave his stronghold in sales and distribution area. In 2014, Irfan joined Telenor Pakistan as the Deputy CEO and after almost 2 years he has been raised to the top most position of CEO; hence becoming the first local CEO of Telenor-Pakistan.

Rainer's extraordinary experience for over a decade in strategy formulation and operations across 4 continents makes him the most experienced campaigner

Mr. Liu Dianfeng, CEO Zong, has 25 years of commercial and corporate affairs experience at China Mobile Beijing Co. He has also remained the board member of China Mobile Jilin Co. China Mobile is a big and important market that successfully leads business in today's world but it is also a fact that China Mobile is a homogenous market; hence anyone only working in it losses the diversity in experience. If Mr. Liu overcomes the communication and cultural gap will give him that

much needed attribute to make it in any other market.

Achievements (Total: 50 points)

As we know that the clarity of a leader's vision and strategy to achieve certain goals is directly associated with the overall performance of an organization. The clearer a leader is in his/her vision, the more timely he/she will make decisions. The success of an organization depends on the competency of a CEO; who must be an exemplary motivator, inspirational leader and an expert in managerial decisions. Only with these attributes, a CEO will be able to devise constructive strategies for the organization. As far as the strategies of Pakistani mobile sector is concerned, three operators have 3G & 4G mobile broadband spectrums whereas, Ufone only has limited 3G spectrum. This indicates a huge responsibility on each operator in order to take maximum benefits of the acquired spectrum and make internet based services available like M-health, M-Education, M-Agriculture and other in far flung areas of Pakistan. Ufone will definitely need additional spectrum to realize its mobile broadband vision, if any.

We have included achievements by a CEO as part of personality benchmark during the past year especially for initiatives during the period after appointment to the recent position. Therefore, our team tried to come up with some of the personal successes of mobile CEOs that definitely contribute to the overall organization's performance.

The success of an organization depends on the competency of a CEO; who should be an exemplary motivator, inspirational leader and an expert in managerial decisions

Aamir Ibrahim is certainly a one accomplished CEO in this category due to some of his noteworthy achievements in the industry especially during his current appointment. He has been hired as the CEO of two merged companies Warid and Mobilink primarily due to the fact that he has served in both these organizations at higher level. Aamir, after joining as CEO in Mobilink, has successfully completed the most difficult re-structuring task of his company and got rid of the dead wood human resource that was so important for taking

the company into the future. Aamir's visionary leadership is also evident from his effective step of rebranding of Mobilink into Jazz; while at the same time successfully cashing the value of Jazz brand name. Both of these tasks involve higher level of decision making and risk taking which Aamir, as a CEO, managed quite well. Mobilink, even before merger, was the leading operator in Pakistan. Hence, these effective changes will play important role in helping the company to witness growth in



future.

Not only this, within a short period of leadership, the company has done exceptionally well in the important mobile banking service that is in competition with the likes of "Easy Paisa by Telenor" that won "Glomo GSMA Award 2017 for Women Inclusion" at MWC.

Irfan Wahab is the first Pakistani CEO of Telenor since it started operations in Pakistan. It is due to his high profile experience within Telenor Group that the Group trusted his capabilities and hired him as the CEO of a country like Pakistan in which the group has keen interest due to its growing market potential especially after the exit from neighboring India where they had a bad experience. Irfan Wahab probably was instrumental in making a timely decision for Telenor to participate in the auction to acquire 850 MHz spectrum hence, getting a step closer to realize Digital Pakistan vision. This indicates the company's and its leadership's aggressive strategic approach in the Pakistan mobile market. Also, he is presently re-structuring the company the results of which shall be more visible in the near term. This indicates his vision for the coming challenging scenarios. Being the CEO of Telenor, Irfan has been invited on numerous international platforms like Mobile World Congress (MWC 2016-17) to represent Pakistan. Some other milestones achieved by

Telenor under Irfan's supervision include "P@SHA ICT Award for Innovation in Service" and it also got nominated for two Global Mobile Awards for the fifth consecutive year. It is important to note here that maintaining market share in a challenging telecom environment is equally essential; which Telenor with the exceptional leadership of Irfan has wonderfully preserved. So he is on the 2nd position in our list as does his company on market share.

Zong's leadership achievement in strategy & vision is also worth-praising. Liu has successfully maintained its market share in 4G subscriber base till date giving tough time to the market leaders. Up till last year, we didn't know much about Zong's CEO and his achievements but in 2016 Liu Dianfeng has made some worth mentioning contributions to Zong. While, highlighting the achievements of Liu, it is also pertinent to mention that Zong, under his leadership, has achieved its 4G roll out target three months earlier than projected in 2016. Zong has the highest number of 4G subscribers hence utilizing the maximum of its 20 MHz spectrum. Due to these achievements China Mobile has committed to invest further \$200 million in Pakistan for network enhancements. Presently, while he is maintaining lead on 4G subscribers but there seems to be few initiatives to cash the digital dividend that the company successfully managed initially. Mr. Liu needs to come up with more visionary approach so that it can manage to reap the benefits of its spectrum assets which will be running out fast.

Aamir Ibrahim is certainly the most accomplished CEO due to his post-merger strategies that includes rebranding and restructuring of the company

As far as Ufone's achievements under Rainer's leadership are concerned, we have not seen any fundamental changes in the company profile. Ufone has not devised any effective strategy, despite having a strategy specialist CEO that can change its fate and help the company to improve its deteriorated market share. Ufone's market share has decreased further in the last year or so that does not speak in favour of Mr. Rainer. Just like 2015 benchmark report we published, also in 2016 the company has remained at number 4 position despite strong shareholders and there seems to be no serious efforts to reverse the downward trend especially in the last couple of years.

Although Ufone reportedly is working on reducing its OPEX further but this has yet to be confirmed from publically available data. It may be a bit earlier for him to be judged on his achievements as he has recently joined Ufone. In future, he shall be mainly judged on two important aspects i.e. how well he performed in the recently announced 4G auction by the PTA (expected in May 2017 which they desperately need for MBB) and turning around the company specially in repairing relationship between the two shareholders i.e. Etisalat and the Government of Pakistan. Rainer has vast experience in serving international ventures like T-Mobile and Deutsche Telekom Group etc., where he served at top positions and could be instrumental in developing and importantly implementing effective strategies to grow in the mobile industry.

Leadership Attributes

"People buy into the leader before they buy into the vision"

Famous leadership expert John C. Maxwell

Having a great idea and assembling a team to bring that concept to life is the first step in creating a successful business venture. While, finding a unique idea is rare enough; the ability to successfully execute this idea is what separates the dreamers from the entrepreneurs. In order to successfully lead an entire organization on an innovative idea, the leadership attributes really matters. Leadership attributes are the inner or personal qualities that constitute effective leadership. These attributes include a large array of characteristics such as values, motives, traits, competencies, style, behaviors and skills. Many leaders are competent, but few qualify as remarkable. If a CEO wants to join the ranks of the best of the best, he/she must embody all these qualities all the time.

We have also developed a collective skillset of "Leadership Attributes" out of above mentioned qualities to evaluate our league of telecom CEOs. Our criteria is based on their public image in the industry, team player, personality outlook and appetite for innovation.

Public Image & Team Player (Total:20 points)

When we hear names like "Steve Jobs" or "Bill Gates", "Apple" and "Microsoft" comes to our mind. A CEO's image is almost inseparable from the company he or she leads. The PepsiCo CEO 'Indra Nooyi' once said that "When you become a CEO you're no longer your own person, you're a

public property.” In today’s connected world, public image has gained significant attention. People want to see whatever is done by a politician, model, singer, scientist and also a CEO leading the company. The work done by a CEO won’t really matter much if it is not properly highlighted. Hence, it would be right if we say that “CEOs are Brands.”



In this category, the two Pakistani CEOs Irfan Wahab and Aamir Ibrahim were close in competition as both of them are striving hard to enhance their company’s name by using their CEO image. Both of them are at the forefront for creating a positive image through media, be it social media, television or print. Hence, it is really difficult to keep either on them at the top in our list.

Aamir Ibrahim took a very nominal lead here with 18 points on the basis of his charismatic and confident style of leadership which also give him prominence in the industry. He is easily approachable by media persons in corporate events. Aamir is active on Twitter and shares many useful initiatives of the company with public. Not only this, Aamir appeared in the “Jazz Anthem-”Jazz-Dunya Ko Bataa Dou”-a TVC that was released to announce new brand identity under one name “JAZZ” after the merger of Warid and Mobilink. He also hosted the official event of “Warid-Mobilink Merger” proving that sometimes personal touch matters more. This attribute was missing for quite some time from Mobilink CEOs and therefore is a very pleasant change from the past coming from the market leader.

Irfan is also very close with 16 points in this category as he is also determined to progress his brand name in the industry. He with his confident and energetic personality pioneered the trend of a CEO appearing in a TVC. He is also quite active on social media mainly Facebook and appears quite often in live

sessions on industry issues, career counseling and personally interacts with the youth to answer their queries.

Unlike previous Telenor and Mobilink CEOs, who have established friendly public image; foreigner CEOs take longer to adjust and in Pakistan’s industry due to the culture and language barrier. Same is the case with new CEO of Ufone. Rainer is not at all active on social media neither does he appears at public or industry events. Even it was difficult for us to find his data for this article. He has no LinkedIn profile; this makes him less known among the public; hence we have given him 11 points. Same is the case with Mr. Liu Dianfeng. However, Mr. Liu public image has improved from last year, as he has become more active in events and industry gatherings. Therefore we have given 11 points to Liu and 9 points to Rainer in this category.

Innovation (Total: 10 Points)

“Innovation distinguishes between a leader and a follower”

Steve Jobs

The introduction of innovative services and ideas is an important factor for the success of a company. Customers are always fascinated with more useful and relevant services offered by a brand. The more a leader of a Telco is creative and innovative himself, the more ideas he will be able to add to the overall portfolio of a company. Let’s look at the innovative services introduced by each mobile operator during last year or so.

Irfan Wahab has successfully created a strong brand identity of Telenor in the industry

Some initiatives create a lot of hype and are followed by others in the industry. One such initiative is Telenor’s velocity, -a startup accelerator program to support digital entrepreneurs. Another such initiative is i-Champ- an effort to revolutionize the education system of Pakistan in collaboration with Facebook. i-Champ initiative intends to promote digital education in Pakistan and to bring awareness among the students and give them a better understanding of internet.

Telenor Djuice also introduced Pakistan’s first ever online film “Oye Kuch Kar Guzar” on YouTube; in order to strengthen the digital ecosystem and digital uptake in the country. As far as the previously

introduced services of Telenor are concerned, “Easypaisa” (first Online Payment Solution) has bagged an award at the 2016 Financial Innovation Award. Irfan Wahab has successfully created a strong brand identity of Telenor in the industry; hence we have given 8 points to Irfan.



Jazz has improved a lot as compare to the last year when it comes to innovation and new services. Followed by Telenor, Jazz successfully established “Jazzxlr8” the first ever “National Incubation Center” (NIC) in Pakistan in collaboration with MoITT, ICT R&D Fund and TeamUp, hence setting an example of public-private partnership in the industry. The post-merger packages and services introduced by Jazz are also quite popular for its existing and new users. It also introduced “Ba khabar Kissan” as an m-Agriculture initiative. It also took initiatives to bring low end smartphones labeled as “Jazz X” making it more affordable for users and taking the mobile broadband penetration further. These innovative services introduced under the leadership of Aamir puts him at 2nd place with 7 points.

Liu has maintained his 4G LTE market share and is still leading in this regard. The operator redesigned its logo last year. Other than this, we haven’t heard anything innovative from the operator. So Liu still needs to work hard to give Zong the right potential to mark its place with innovative ideas.

Ufone did not introduce something worth mentioning in the 2016 also as was the case in the initial year of launch. The operator introduced an initiative “Unsung Heroes”-a campaign through which it aimed to share the stories of ordinary Pakistanis doing extraordinary deeds, thus becoming a brand that celebrates the real people and their real achievements. Therefore, we have given 6 points to Liu and 5 points to Rainer

in the innovation category as they didn’t manage to come up with novelty during this year.

Final Verdict

Aamir Ibrahim, due to his remarkable leadership attributes is our favorite superhero and also the CEO of the Year. Whereas, Irfan Wahab Khan, right behind Aamir is at 2nd position; as both of them started their professional careers in same year and have remained very close competitors. Zong’s CEO Liu is our 3rd choice with improved ranking this year as we have found him delivering. The new CEO of Ufone, Rainer, is at 4th position as he didn’t add any major contributions after joining in the company. Since, Rainer is a newcomer we can say that he has to struggle hard to establish his credentials and take Ufone out of the red in the competitive mobile industry of Pakistan.

Aamir Ibrahim, due to his remarkable leadership attributes is our favorite superhero and also the CEO of the Year

PhoneWorld’s top ranking of mobile companies CEOs is entirely based on the information available through web and based on our personal observation of the industry. As the benchmarking is done by our team’s self-established criteria, so it may comprise limited information. However, our team has tried its best to provide as much information as possible collected through public domains, popular sentiments and the personal knowledge of the industry analyst. In order to assess public opinion and choice, PhoneWorld is also conducting a poll on the official website to get feedback from the readers. So please visit www.phoneworld.com.pk and vote for your favorite CEO.





WHY IS IT THE RIGHT TIME TO INVEST IN INTERNET OF THINGS?

The "Internet of things" (IoT) is becoming a hot topic of discussion now a days. It has the potential to impact everything we do and how we live. Despite its intensified role in today's connected digital world, many people are still trying to grasp the foundation of what internet of things is all about. In the most basic sense, any device that has an on and off switch to the internet and/or each other is part of IoT ecosystem.

This includes everything, from a small device like trackers to big things like jet engine of an airplane. Based on cloud computing networks, data gathering sensors and prompt connection, IoT is set to change everything in our lives.

Internet of Things (IoT) is not just a buzzword anymore rather it has become a real world reality. The technological developments have set the floor for IoT boom around

the world. With Broadband internet widely available and cost of connection decreasing, smartphone penetration is skyrocketing with more devices now being invented with Wi-Fi capabilities and built-in sensors. The ecosystem today is perfect for IoT growth. The new rule for future has been rightly written as, "Anything that can be connected, will be connected." This is not just based on money saving or about building bridges and cities rather it's about making things

By Rizwana Khan

intelligent, it's going to be a major engine for creating new products and new services.

All of these things are creating a "perfect storm" for the IoT. The 5th generation wireless revolution is also near that offers far better service, promising

According to Boston Consulting Groups (BCG) market analysis, by 2020, \$267B will be spent on IoT technologies, products, and services, where the greatest two sources of revenue growth in the IoT market will be generated from services and IoT applications investment.

create is not limited to machines only. Rather it is redefining the potential of everyday items. In recent years, we have seen basic jewelry transformed into real time fitness trackers, light bulbs switching off when no one is around, clothes that have built-in cooling and heating

EXHIBIT 1 | Services and IoT Applications and Analytics Will Capture Some 60% of IoT Spending

TECHNOLOGY LAYER	DESCRIPTION	MARKET SIZE (€billions)	CAGR, 2015-2020 (%)	VALUE
Services	Allows companies to integrate and customize data so that it's readily accessible and actionable	10	60	IoT users need customization
IoT applications	Allows companies to make sense of data and generate meaningful insights	10	60	Application and software development precedes hardware rollout
IoT analytics		3	20	Analytics support applications and drive insights
Identity and security	Restricts access to the IoT system and safeguards connected devices	3	20	Financial and technical challenges will limit initial spending
IoT backbone (cloud and platform)	Captures and stores data from connected devices	3	15	Platforms will initially be given away and will lag behind point solutions
Communications	Allows sensors attached to or embedded in connected things to communicate with the internet	10	25	Commoditization and scale effects will lead to price erosion; existing network infrastructure will likely be reused
Connected things	Allows sensors, processors, and microcontrollers to monitor, for example, homes, packages, inventory, and machinery	20	50	Commoditization and scale effects will lead to price erosion in sensors

2015 2020 CAGR, 2015-2020 = ~40% CAGR, 2015-2020 = ~30% CAGR, 2015-2020 = ~20%

Sources: IDC; Gartner; ABI Research; BCG Internet of Things buyer survey; expert interviews; BCG analysis.

data speed 50 to 100 times faster than 4G LTE networks. It's not just about improved smartphone technology; analysts believe that 5G's biggest impact will be on IoT proliferation as it will result in billions of connected devices around the world.

This IoT revolution facilitated by 5G will take the internet era in to new territories. This is why IT and telecom companies including chipmakers, network equipment makers, application developers and telecom service providers are investing heavily in the technology. But at the same time, other industries are also adopting IT trends in their products and services, making them smarter and efficient.

Realizing the Full Value of IoT

The impact Internet of Things will create on our lives will be enormous. It will result in increased efficiency and productivity by better utilization of resources. It will bring a wave of change for businesses and the way they develop their business models that will be outcome based and enable new revenue streams through data driven services.

With machine to machine communication enabled by specialized sensors can provide huge opportunities to optimize activities from small to everyday tasks to start a whole range of new services. The effect Internet of Things will

system. Infusing technology in everyday products to increase efficiency and effectiveness is the core of all IoT interventions.

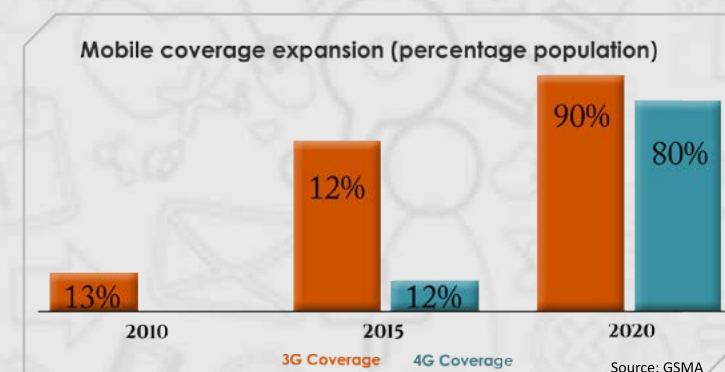
BASED ON CLOUD COMPUTING NETWORKS, DATA GATHERING SENSORS AND PROMPT CONNECTION, IOT IS SET TO CHANGE EVERYTHING IN OUR LIVES

The true value of Internet of Things is much more than making things intelligent. It will be at the center of value cycle which not only involves

gathering data from things but also optimizing complete processes to change people's behaviors hence, improving overall productivity.

IoT in Pakistan

Pakistan is one of the emerging markets for telecom and technology where digitalization is still at early stages but the momentum that has been built over the last five years is quite impressive.



Through its Vision 2025 strategy, Pakistan aims at completing its transition to a knowledge-based economy and mobile is at the heart of this vision. It is the most well suited technology for creating the digital society that is being aimed for. It not only provides the connectivity foundations but also facilitates the delivery of content necessary for other components of digitalization. Internet penetration, which is of monumental importance for IoT is only possible through mobile broadband as it can cover wide area with greater efficiency and provide affordable connectivity to the people.

In the recent years, Pakistan's IT and Telecom industry has gone through remarkable development while securing 6th position in the smartphone market for growth potential. At the end of January 2017, the tele-density in Pakistan reached 71.66 percent

whereas, there were 137 million mobile subscribers and 38.2 million mobile broadband (MBB) subscribers. According to GSMA's latest report on Pakistan's digital landscape, 3G and 4G penetration in Pakistan will reach 90% and 80% respectively by the end of 2020. This evolving communication landscape holds unlimited opportunities, including Internet of Things and smart cities.

With the ground set for further developments in the country, IoT based research and development is starting to gain momentum and is promising to bring in investments from home and abroad.

ANALYSTS BELIEVE THAT 5G'S BIGGEST IMPACT WILL BE ON IOT PROLIFERATION AS IT WILL RESULT IN BILLIONS OF CONNECTED DEVICES AROUND THE WORLD

The unique opportunities created by IoT have motivated many young entrepreneurs to launch startups on their own. Whereas, incubation centers like Plan9, NEST i/o, i2i, NIC etc also provided special platforms for technology

startups. The immense young talent of Pakistan is gradually coming to the limelight with amazing and unique IoT projects.

THE IMMENSE YOUNG TALENT OF PAKISTAN IS GRADUALLY COMING TO THE LIMELIGHT WITH AMAZING AND UNIQUE IOT PROJECTS

There are numerous companies that have entered the IoT market in Pakistan. Zaheen Machines, Smart Devices, XGear, Cowlar, IOTechnica, Save my Scope, Trequant, Eye-Automate, Smart Security Solutions, IoT Lab are just few of the names. The focus of these IoT companies varies from health and security to smart homes, transport and urban planning.

IoT is not the future. It is here!

There is no doubt that Pakistan is moving towards a complete IT revolution. The contributions that public and private sectors are making, no matter how small or how big will take the country to a truly digital era and that's exactly what our focus should be on. We are currently at the initial stage of that digital revolution therefore; the need of the time is to drive IoT adoption.

Adoption of IoT is a long process that you have to go through step by step. The real focus should be on defining our strengths and weaknesses that will eventually help us to create an IoT supportive ecosystem. Along with other tech companies, mobile operators in

Pakistan have also recognized the importance of IoT and have started to rethink their business models. They have started to work along the lines of internet companies and have started to build platforms that enable Over-the-Top (OTT) based services and have also expanded in to the digital financial services.

Telenor and Mobilink are among the frontrunners to promote digital technology in the country. Both have started dedicated projects for IoT and digital transformation in the country. Consequently, this transformation will enable them to successfully ride the next big wave of the IoT.

IOT DOES NOT FOCUSES ON JUST A SINGLE INDUSTRY RATHER IT WILL CREATE IMPACT ON ALL INDUSTRIES WHERE TECHNOLOGY AND MACHINES ARE USED OR WILL BE USED IN THE FUTURE

To completely harness the potential of Internet of Things and extract maximum benefits, laws and regulations need to be established that govern the development and use of such

technologies. How IoT will be used in medicine, education, security, entertainment, agriculture, transportation etc is a delicate matter that needs to be planned out. More importantly, how safety and security of its users will be maintained is an even greater matter of concern. IoT does not involve just a single industry rather it will create impact on all industries where technology and machines are used or will be used in the future. Therefore, a comprehensive roadmap needs to be planned out, with inputs from all stakeholders. Addressing the importance of Internet of Things is not only important for realizing digital inclusion in Pakistan but also to gain economic benefits of IoT solutions through service optimization and cost saving. These will also bring improvements in productivity and automation but will also create value addition. MoITT has recently approved its IT Policy that outlines the framework for technology developments but due to the significant importance IoT and the impact it will create on ICT industry, It should be handled exclusively and with utmost care while also keeping in view the changing trends in the industry.

Of all the technology trends that are taking place right now, Internet of Things is the biggest among them. Next generation

mobile technology, greater smartphone and broadband penetration would mean nothing if we don't use it to make our lives smarter and better. It is IoT that's going to provide us with the most opportunities in the next five years.

AN ADDITIONAL RESPONSIBILITY ON GOVERNMENT IS TO CREATE A FRAMEWORK OF GOVERNANCE FOR INNOVATION, AND RISK MANAGEMENT BECAUSE THAT'S WHAT WILL DRIVE THE JOURNEY FORWARD

Therefore, this is the right time to invest in Internet of Things and be a part of digital revolution. This is the time when we have to establish clear national level goals for IoT programme and identify processes that could be streamlined to realize efficiency. Also, government and private sector will have to create partnerships to build a responsive IoT ecosystem. But an additional responsibility on government is to create a framework of governance for Innovation, Risk Management and Change Management; because that's what will drive the journey forward.



By Shaheer Riaz

QMobile M6

A Midrange Smartphone with 4GB RAM

QMobile is the most successful mobile brand of Pakistan. Recently it has introduced another smartphone that is getting attention from the market. That's why QMobile M6 is worth reviewing. Here are the details:

Design & Display

The QMobile M6 has 5.5 inch screen size with the screen to body ratio of 69.3%. The supportive resolutions are 1080 x 1920 pixels which mean it supports full HD system. DPI (density per pixel) is 480 dpi for the visibility of icons and texts.

The QMobile M6 is a little thicker device with dimensions of 155.7 x 77.3 x 8.9 mm and weighs 184 grams as it carries a big battery of 5000 mAh.

The best thing that I like about QMobile M6 is its multi-touch support. Mostly QMobile devices score 5 points in multi-touch but this one has surprised us with full 10 points multi-touch score. It also supports a graphic card of Mali-T860MP2 which is faster than any other Mali GPU card.

Memory

The QMobile M6 has 64GB ROM and 4GB RAM. It also supports up to 256 GB card.

Camera

QMobile M6 has good combination of camera lens as it has 13MP lens for back camera and 8MP lens for front camera. Back camera can record videos in full 1080 pixels while front one can record in 720p.

We took some images from the back camera of QMobile M6 with extraordinary results. Color accuracy and clarity of images are easily visible. Moreover, quality and dynamic range is very good in day light while low light results are also quite impressive.

The results for front camera of QMobile M6 are just remarkable, it gives the best selfie results as compare to all other giant devices.



Battery performance

QMobile M6 has non-removable big Li-Po battery of 5000 mAh. Polymer batteries are less heavy and offer great performance. The handset contains big battery that can easily provide upto 7-8 stand-by hours.

Processor

The QMobile M6 has 2.0 GHz Octa-core processor that is built on the architecture of ARM Cortex-A53 and has Mediatek chipset MT6755. It enhances the battery power and performance of the device.

Interface

QMobile M6 runs on Android version 6.0 (Marshmallow). Color and brightness are well managed and the icons have clear visibility. Some bloat-ware applications include QAppStore, Backup and Restore, Facebook, Gameloft and many others. Gameloft has four games in it such as asphalt nitro, danger dash, real football and spider man. WhatsApp, skype and Opera browser are also pre-installed.

Connectivity

QMobile M6 is a dual SIM 4G enabled device that supports all the bandwidths in Pakistan. Other connectivity options include Wi-Fi, Bluetooth and expandable memory. Wi-Fi supports the standards of 802.11 b/g/n, dual-band, WiFi Direct and hotspot while Bluetooth version is 4.1.

OS: Android, v6.0 (Marshmallow)



Display: 5.5 inches



Battery: Non-removable Li-Po 5000 mAh



Weight: 184 g



Camera: 13 MP, LED flash, Autofocus



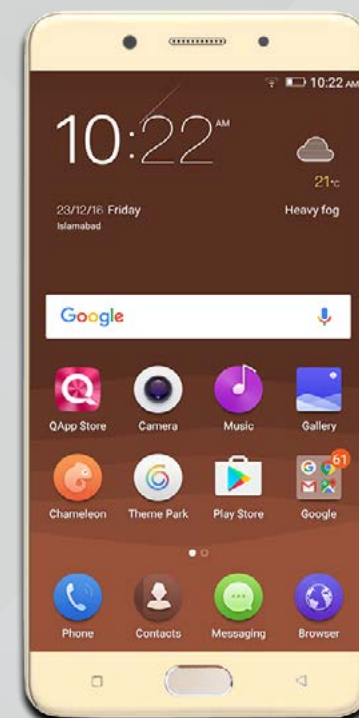
Memory: 64 GB ROM, 4 GB RAM



Processor: 8x Cortex-A53, up to 2.0GHz

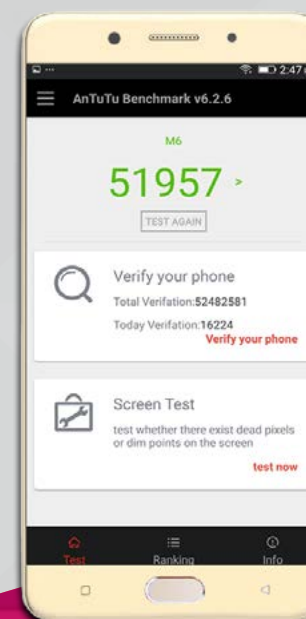


Price: PKR. 29,500



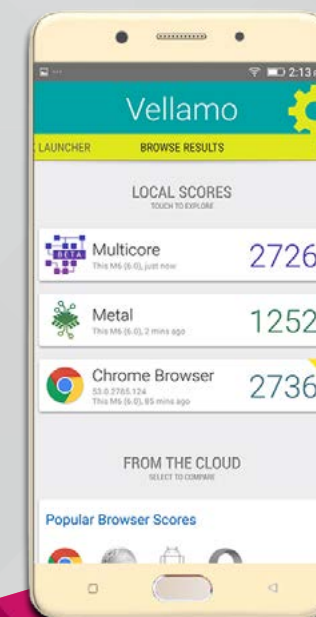
Antutu Benchmarking

Antutu comprehensively tests all aspects of a device, including UX, GPU, RAM, CPU and I/O. Each item is individually assessed and given a score. The overall score of QMobile M6 is 51957 points, which is quite impressive. On its multi-touch test, the device scored full 10 points.



Vellamo Benchmarking

In Vellamo Benchmarking test, three tests were carried out where QMobile M6 scored 2726 points in multicore test, 1252 in metal test and 2736 in chrome browser test.



Good

- Big Battery
- 4GB RAM and 64GB ROM
- Full points in multi-touch

Bad

- No Wireless Charging

Final Verdict

QMobile M6 is a great device that offers amazing features. Customers who are looking for high-end device with powerful features should consider QMobile M6.

By Rizwana Khan

Aimal Ali Khan

Competing for Spectrum:

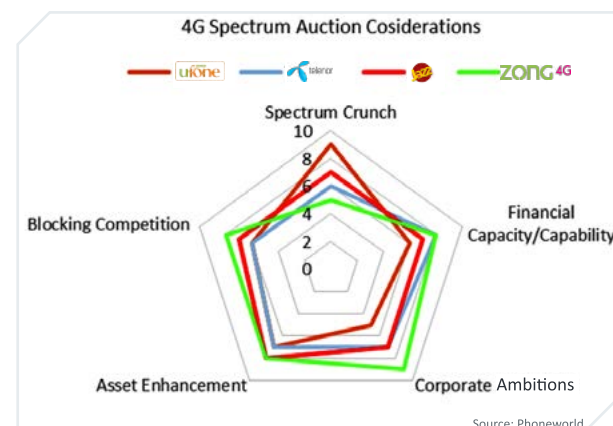
4G Auction Considerations

Pakistan's swift journey from 2G to 4G is certainly an inspiring feat. It has been only three years since the first Next Generation Mobile Services Auction (NGMSA) but the number of 3G/4G subscribers has already crossed 38 million where three out of four mobile operators are 4G LTE service providers. The next round of auction for the last chunk of 10 MHz in 1800 MHz Spectrum from the NGMSA is soon to take place that will further change the future position of each mobile operator.

The upcoming spectrum auction is not only important due to its role in the conclusive journey of 4G but also for the fact that it will also shape the way for eventual evolution to 5G

The upcoming spectrum auction has its importance due to various considerations and weightage for each

operator. Primarily, this is not just due to the conclusive journey of 4G services but any additional spectrum may also shape the way for eventual 5G evolution. Operators' response towards the approaching spectrum auction will also reveal their framework and plan for the future.



We have tried to elucidate the current position of each operator, its spectrum mapping and the value this additional chunk of 10 Mhz can bring for each operator with the help of these five parameters i.e. Spectrum crunch, Financial Capacity & Capability, Corporate

Ambitions, Asset Enhancement and the need to contain the Competition.

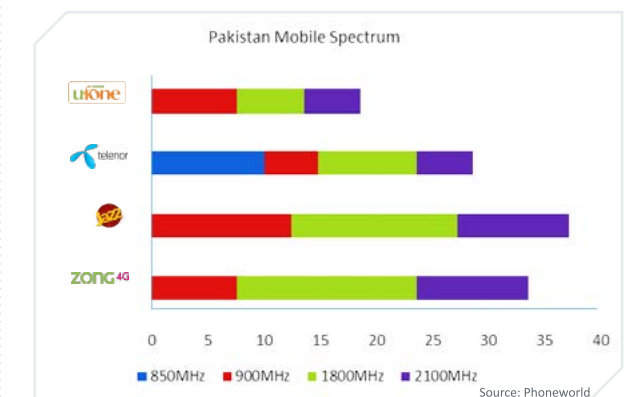
Spectrum Crunch

It is quite evident that Ufone having failed to get any substantial spectrum earlier in the NGMSA ranks much higher than others in spectrum requirement category. It is primarily because of this that its overall subscriber base is falling and its MBB subscription has also stalled due to limited data service offerings and Quality of service which is directly related to the small amount of available spectrum. Currently, Ufone has the lowest amount of overall spectrum available i.e. 18.6 MHz for both voice & data. It has 5Mhz in 2100 Mhz and at some places a refarmed spectrum in 900 Mhz available for MBB.

From Spectrum perspective, winning this auction is of utmost importance for Ufone as it will be a make or break situation for them

If Ufone wants to compete with other mobile operators especially in the mobile Data Services it shall have

to get additional spectrum specifically in this coming auction so that it can compete or atleast stay in the race. Hypothetically, to accommodate similar number of mobile subscribers it requires the equal quantity of spectrum as others. In order to increase its customer base Ufone will also need to increase its spectrum starting from the forth coming auction. Hence, winning this auction from a spectrum perspective will be of utmost importance for Ufone as it will be a make or break situation for them.

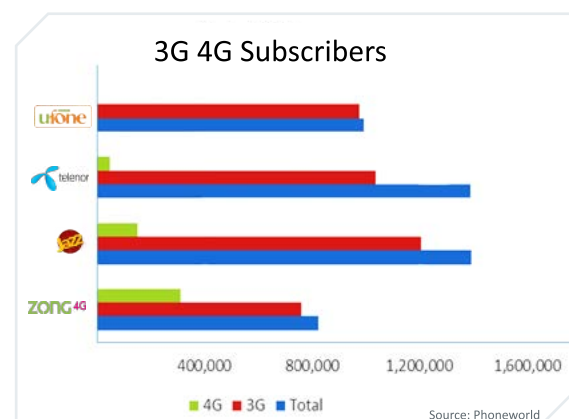


Jazz certainly has the highest chunk of spectrum available but since it also has the highest number of subscribers, Jazz can also use the additional spectrum in the near future for better quality of service and also to maintain its market position. Jazz can refarm some

of the spectrum but since its number of the existing subscribers have crossed 50 Million, it would need to have an additional spectrum to accommodate new users specially for Data.

To compete with the Market leader, Telenor will need additional spectrum to reach the same level

Mobilink Jazz uses three frequency bands i.e. 900, 1800 and 2100MHz. For Data, it uses 10 Mhz of the 2100 Mhz for 3G and for 4G it has re-farmed 1800MHz of Warid. For a more competitive position in future, it will need to consolidate its 4G spectrum position and therefore, should strive to get additional spectrum. If it does participate in this auction or for that matter in a future auction, it will be able to maintain its growth spree. Technically, in that case it would be very advisable to also start working on aggregating the carriers to further improve the network data rates.



Telenor until last year only had 18.6 MHz and during the end of the year were able to secure an additional 10 MHz spectrum in 850 Mhz band in the 02nd round of auction in which it was the only participant. It had to take an unconventional spectrum for its MBB since its network choked for spectrum. Again, hypothetically speaking if Telenor has to match Jazz's 37.2 Mhz it will need the additional spectrum to make it to 38.6 MHz and compete with the current market leader.

Though Telenor has split the existing 850MHz spectrum between HSPA and LTE, but with the new band they can utilize the whole 850 for LTE. It is important to note that Telenor was only a million subscribers behind Jazz before the merger. It has pursued the 3G services quite aggressively in the past; if it plans to follow the same strategy it will require additional spectrum. Also, its 4G services also need improvements since it is reportedly using only half the spectrum for 4G and the other half for 3G, which impact its service quality of 4G.

While, it is very difficult to access the spectrum requirement based on other factors without a proper QoS audit but some industry experts also see the density of subscriber as high level gauge to assess this parameter. As evident, all three operators i.e. Ufone, Telenor and Jazz have a very tight spectrum for their 3G services. However, when it comes to 4G Zong definitely has a very high subscriber's density for 4G and if geographical considerations are normalized it would certainly need additional spectrum for its 4G & onwards technological growth.

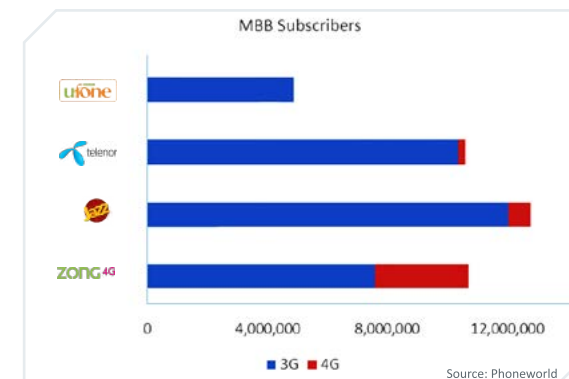
Telenor's appetite for additional spectrum of 10MHz bandwidth can be a supplementary resource for LTE only. They can aggregate the carriers of the different bands and provide the users with boosted data rate capabilities. This can be performed by using the 5MHz from both the bands.

Zong acquired handful of spectrum i.e. 20 MHz in the 01st round of NGMSA auction and theoretically should be the last to plan out for any additional spectrum requirement. However, as Zong is the largest 4G operator with more than 3 million subscribers and it has announced that in future all deployment and network growth will be focused on 4G LTE, therefore it will still need to require additional spectrum to pursue this strategy in much better way.

Financial Capacity/Capability

In Pakistan all four operators are backed by strong international parent companies that are not bound by any financial constraints. In this regard, Telenor and Zong are the forerunners because Telenor has just recently closed its business in India to concentrate on emerging markets, Pakistan being one of them. Whereas, with ongoing CPEC, China's has become even more interested in making further investments

in Pakistan. Therefore, Zong's investment may also come from political considerations and the price in the form of Spectrum investment could be a very small thing in the scheme of things.



If capacity & capability is considered the only parameter both Telenor and Zong rank high. Jazz on the other hand has recently invested in the merger so making further investment at such a short interval might not be on the cards. However, since the investment into Jazz is in kind and less in financial terms therefore the company still could surprise the market. Ufone, a Government of Pakistan and Etisalat's subsidiary has not made any financial investment in the past few years specially in the NGMSA. While, both the shareholders are quite deep pocketed specially Etisalat that has considerable capacity for raising funds but this could be overshadowed by an extended conflict among the two parties about Etisalat's remaining payment of USD 800 million that it owes to the Government of Pakistan.

Ufone's shareholders may be conscious of the fact that if they do not make an investment now their value of existing investment could deplete very quickly

Since, it seems to be a now or never situation for Ufone, there could be some agreement by the shareholders especially from Etisalat to make arrangement for investment in the Spectrum.

Both shareholders especially Etisalat may also be conscious of the fact that if they do not make an investment now their value of existing investment could deplete very quickly.

Corporate Ambitions

Zong, Jazz and Telenor have shown great commitment in the past few years. Substantial investments were made by all three operators and each of them followed an aggressive expansion and up gradation strategy that shows each operators' high level of corporate ambitions to expand and do well in Pakistan.

Zong is most ambitious operator among all as due to being the first China Mobile Operations outside of its territory. It not only actively participated in first NGMSA auction but it has also invested huge amount of money in network improvements and upgrade especially on LTE as compared to others who went for 3G expansions. Importantly, not only for corporate but this could be for strategic reasons as well since the Government of China is already very involved in making CPEC a reality.

Telenor Group's ambitions for Pakistani market has enhanced further after its exit from the Indian market where it faced a series of letdowns

Zong being a Chinese entity could be quite aggressive in playing a vital role in making its presence more prominent. Resultantly, with the additional spectrum, it can support broadband data services such as IoT and other advance features that will better serve the economic activities expected from CPEC.

Telenor Pakistan is the second largest market for Telenor Group therefore; it ranks very high on Group's priority list. Telenor Group's great ambition for Pakistani market is also natural especially after its exit from the Indian market where it faced a series of let downs. The high EBITA margins and the innovative services that it was able to launch such as Easy Paisa etc., also makes Pakistan as one of its primary market. Keeping in view the growth trends, it

also started its 4G services in the unconventional spectrum of 850 MHz band. Quite interestingly, Pakistan has also become the second largest market for Vimplecom after its merger with Warid. The changes in the company structure also speaks volume of the Group's growing interest. Therefore, from corporates' prospective Pakistan holds great importance for both these groups into their expansion.

Spectrum cost is quite high therefore, it is not feasible to participate in auction just to keep the competition out

Ufone on the other hand is a totally different story. As indicated earlier, the relationship between Government of Pakistan and Etisalat has seen my ups and downs in the past. Ufone went to first 3G/4G auction and came out with the least spectrum and even later-on it didn't come up with any worthwhile strategy to improve situation except for refarming a small portion of the 900 Mhz spectrum for it Data services. Ufone like Telenor initially got only 5 MHz in 2100 MHz band but Ufone could not manage things well whereas, Telenor managed to become the largest 3G operator in a very short interval following the auction.

Asset Enhancement

In mobile business, spectrum is the most important Asset; the more spectrum an operator has the better is its asset value. One of the main reason why Mobilink opted to acquire Warid was its spectrum that is now being used for Jazz's 4G services.

While, it is natural that all operator would like to go for the additional spectrum but those with limited spectrum would be most interested. Therefore, the importance of the forthcoming auction is equally significant for all the players in terms of increasing their asset value. The 1800 MHz spectrum is most suited for 4G and Zong and Mobilink are planning to build their future strategies based on next generation LTE & LTE-A technology and services. Therefore, despite having bigger chunks in 1800 MHz, they can further enhance their assets through additional spectrum.

While Telenor and Ufone only have 8.8 and 6 MHz respectively therefore, additional 10 MHz in 1800 band will certainly enhance their asset value and also prepare them better for the future. Importantly, Ufone with its smallest amount of spectrum will have to compulsorily take part in upcoming auction otherwise it will not only lose its market but if the shareholders plan to sell their assets, they won't have much to bargain with either.

Holding out Competition

Another important factor that influences the strategies of a company is the position of its competitors. Big players try to block smaller companies to create their monopoly. In this particular scenario Jazz and Zong are the major players and they could participate in this auction with the objective to block competition even if their current positions may not necessitate them take the spectrum.

Dominant factor for the operators will be to ease up spectrum congestion and Ufone seems to be the front runner to take up additional spectrum

Telenor and Ufone are not really in a position to block competition since Zong and Mobilink already have a stronger position in the market but they can definitely elevate their market position by acquiring additional spectrum. While, blocking competition is an objective that we see around the world but this may not be the case in Pakistan as the Spectrum cost is quite high for just to keep competition out.

Conclusion

The overriding factor for the current operators will probably be to ease up spectrum congestion and from that perspective Ufone seems to be the front runner for taking up the additional spectrum. It is for this reason we have explained in more detailed the various aspects of this parameter. We have also discussed the importance of other parameters as well that could also be the prime objectives for others to compete in the forthcoming spectrum auction. We have to wait and see how the smooth evolution to newer technologies continue to take place in the Pakistan mobile market. It is very likely that if Ufone secures the additional spectrum it can finally improve on growth trajectory.



By Saima Ibrahim

Smart Moves for Smarter Nation

Keeping in view the world wide advancements in technology, Pakistan is also trying to improve its system with the help of latest technologies. All provincial Governments have started working on many projects of e-Governance & m-governance by making use of latest ICT developments. The provision of technological services will no doubt revolutionize the performance of Pakistani Government from many perspectives. In this section we will discuss all initiatives taken by government to make Pakistan a Smart Society.

● Pakistan Railway Launches Mobile App to Book Tickets

Pakistan Railway has launched Mobile App to Book Tickets. This App is launched to facilitate the passengers in advance booking through their smart phones. Few months back E-ticketing system was also introduced in order to facilitate passengers. Railway minister Khawaja Saad Rafique inaugurated mobile application. The launching ceremony was held at Pakistan Railway Headquarters. The ceremony was attended by railway CEO Javed Anwar, GM Anjum Rarvez and many other railway officials.

Users can download App named Pakistan Railway Official from Google App store from android mobile phones. After registration user will get a registration ID number for creation of a railway e-wallet. To buy a ticket, money will be loaded through e-wallet mobile payment system. This money can be paid either online or at a ticket counter at any station.



● PITB Introduces Driving License Issuance and Management System

Punjab Information Technology Board (PITB) has introduced an online system that will provide the convenience of online driving license issuance. With

this system, people can get new license or renew their previous one. Moreover, if you don't know what documents to carry, you can get all details about it on DLIMS official website. The system is not completely digitized yet. The applicant still has to visit a licensing authority's office to apply for a license and submit the hard copy of all of the required documents.



● KPITB, Education Department Sign MoU to Launch 'Early Age Programming & IT Essentials'

The Government of Khyber Pakhtunkhwa has taken the lead and launched first of its kind initiative to educate the KPK children on computer programming. The education sector in this regard has collaborated with Khyber Pakhtunkhwa Information Technology Board (KPITB). KPITB will help the Department of Elementary & Secondary Education to pursue project "Early Age Programming & IT Essentials" for the children of Government schools. The initiative aims to impart an international standard training mechanism so that the children studying at government schools can equally reap the benefits of technology and get trained for future jobs.

Initially this project will be launched on pilot basis across 60 public sector schools in the 14 selected districts of KPK. Later on, it will be extended to entire province in the second phase of project.





Women Entrepreneurs Breaking the Barriers


“Work and Women”, these two W’s might make men think for a while if they’re getting anywhere in life. Gone are the days when women were only to represent the household chores. Now women are more educated and well versed with latest trends than ever before and the seats of power within many organizations have been taken by the women.

With the rise in tech startup culture in the country, many women in technology are also finding their way on the top

Technology transformation in Pakistan is also thriving at a great pace and with that, tech startups

have become an attractive business case. With the rise in tech startup scene in the country, many women in technology are also finding their way on the top. According to Jehan Ara, the pioneering woman in technology who made a remarkable name in the industry said that when she opened her startup incubator Nest I/O, only one woman applied in the first batch. In the latest one, however, around 35% of the applicants were women.

Despite all the hardships faced by the women on daily basis, we have seen a tremendous gain for women in three major areas i.e. education, rights, and leadership. This has removed all kinds of gender inequalities. Women are now contributing billions not just to the local community but internationally as well. Thanks to the flexible working environment, enhanced technology and

 By Yumna Ashfaq

obviously the change in attitude towards working women, women from different age groups, careers and backgrounds are moving towards startup business. The people in startup industry today are educated and open minded towards women. They don’t care about stereotypical ideas about women’s role in work. This change in the mindset of opposite gender has greatly supported women in the technology sector. According to last year’s Stanford University’s survey, 60% of women working in Silicon Valley have experienced some kind of harassment in the workplace but fortunately, in Pakistan, the situation is completely opposite. According to P@sha’s survey, more than 55% of Pakistani women consider IT sector a good industry to work in because there is no harassment and they are appreciated for their work.

According to P@sha’s survey, more than 55% of Pakistani women consider IT sector a good industry to work in because they are appreciated for their work and don’t face harassment

The environment in IT industry is very conducive for women but I believe that one of the biggest upside in technology is the start of internet and e-commerce era that has leveraged the field for female entrepreneurs. It has enabled women to interact with clientele over the internet, without the need to directly contact them. This has made it much easier for women to pursue their career goals. A woman in business is not an unusual thing anymore, not even in Pakistan. There are many women who have built strong institutions and brands on their own and this is not restricted to fashion industry alone. Today’s woman is much smarter and tech-savvy who knows that future is digital.

In Pakistan, the inspiration of gender equality and women empowerment comes from the vision of our founding father Quaid-e-Azam Muhammad Ali Jinnah who said, “No nation can rise to the height of glory unless your women are side by side with you”. At the same time, our constitution assures equal rights for women without any discrimination on the basis of sex, color, and race. Moreover, it makes sure that women participate in all spheres of national life. Jehan Ara is a woman tech veteran who needs no introduction but there are many other names that are an inspiration for Pakistan girls. Talk

about Sheba Najmi- a Stanford University graduate, a veteran user experience designer and product strategist, Code for America fellow, an entrepreneur and most importantly the founder of Code for Pakistan. This brilliant lady also founded “Tech for Change” which is a non-profit organization that works to eradicate public and social problems of Pakistan by bringing entrepreneurs, developers and designers together over one platform. This talented young lady has also worked as the lead designer of Yahoo mail for several years.

“Women cannot lead from the front”- Anusha Rehman broke this stereotype and proved this statement wrong by doing so much for our Telecom and IT industry. She came up with a brilliant idea of providing a communication platform which enables real-time sharing between parents, teachers, students, and administrators known as MySmaEd. This edtech startup raised seed funding earlier this year, valuing the company at US\$2 million. Saba Gul, another successful woman, whose education not only benefited her but also the under-privileged. She is a successful entrepreneur that runs a non-profit organization Popinjay (previously named BLISS), which helps girls, and their families of Pakistan, living below the poverty line to get an education. They are taught languages (English and Urdu) Mathematics and lessons on skills and entrepreneurship. These are only a few of the women who serve as a strong role model for young girls, so when they see women from their own circle standing up front and taking leadership positions, the hopes for their own accomplishments become more real.

Empowering women to participate in economic life across all sectors is necessary to create a stronger economy and to achieve growth and sustainability

Pakistan has a projected population of 188 million of which women constitute half the population. Therefore, empowering women to participate in economic life across all sectors is necessary to create a stronger economy in order to achieve growth and sustainability on an international level and most importantly to improve the quality of life; not just for women but families and communities as a whole. There is no doubt that women have the potential to break the barriers and get to the top.



By Rizwana Khan

M. Mohsin Rehman

The World Needs Nokia in the Smartphone Market

Patrick Mercanton, Head of global marketing strategy & planning at **hmd. Global**

Nokia is not a new name to anyone. In the 90's, Nokia was one of the top mobile manufacturer that made phones with iconic features that are still in use, especially in Pakistan. With the emergence of smartphones and many modern brands, the likes of Nokia took a back seat while Apple, Samsung, and others took over the mobile manufacturing industry. Nokia played a gamble and got involved with Microsoft for the Windows Phone project, a decision which didn't pay off and resulted in Nokia's acquisition by Microsoft.

Today, the smartphone market has become highly competitive with lots of companies struggling with deteriorating market shares. In such a saturated market it could

be hard for Nokia to stand out in crowded market of Android devices. But the Nokia team is quite confident that Nokia will once again win the hearts of consumers. At this year's Mobile World Congress our team got a chance to talk with Patrick Mercanton (PM), Head of global marketing strategy & planning at HMD Global. Here is what he said.

hmd is a company that was formed specifically to launch Nokia in smartphone space and to drive Nokia's feature phone business

PW: Firstly, tell us about the story behind HMD and Nokia?

PM: HMD is a company that was formed just few months ago on

December 1st. it is a company that was formed specifically to launch Nokia in smartphone space and drive the Nokia's feature phone business. It is basically founded by a variety of investors who came together with the idea that even though the world probably doesn't need another smartphone brand but the world definitely needs Nokia back in smartphone business. In the past, Nokia and Microsoft had an agenda of building an ecosystem. Our approach is completely different. We have taken the best software, the best hardware, the best manufacturing, the best design, the best brand and put them altogether to create a great value.

PW: Nokia is coming back with a bang, how excited are you for the reboot? Do you think Nokia's reboot would create a stir in the industry?



PM: First of all I want to clarify that it's not really a re-launch of Nokia as Nokia phones are already available in the market. But it sure is a re-launch of Nokia in smartphone space. We have been absent from smartphone space for a while and now we are planning to enter the market once again.

We have designed Android smartphones that are simpler, cleaner and based on pure Android system

If you ask, "does the world need another smartphone brand" the answer would probably be, 'certainly not'. That's why we decided that we have to bring something really different to the party and register our presence.

PW: From Symbian to Windows to Android, do you think this new switch will help Nokia mark new inroads in the mobile telephone industry. Do you think Nokia would be able to stand against competition?

PM: Android is the most preferred operating system today & to tell you the truth, we are extremely happy to be working with Android. It has enabled us to have great software and the best portfolio of apps that's why we have decided to use pure Android. It is true that there are huge numbers of actors in Android space who always try to customize Android. By doing so, they make it slower and less secured, they don't address the actual needs of the

consumers who want their operating system clean and without cluttered with pre-loaded apps. So we listened to the consumers and have designed Android smartphones that are simpler, cleaner and based on pure Android system.

PW: The 3310 revolutionized the mobile telephone industry; and during the MWC event, it gained maximum traction. We are interested to know that is it just a marketing gig or is Nokia actually planning to launch it?

PM: I've been working in developing markets for quite some time now and what I've seen is that in those market feature phone is still alive.

Nokia is a people's brand. We have made sure to give premium quality at an affordable price

Smartphones have become more like mini computers and tablets so a great feature phone to accompany those smartphones will be fantastic and that's what most of the consumers want, for that 3310 is a great option. So Nokia is also interested in breaking new grounds and changing consumer habits.

PW: The South-Asian market has happily embraced Nokia keeping in mind the cost-effective handsets; do you think price would play an important factor as other low cost Chinese smartphones are easily accessible in the markets?

PM: We have decided to go with

mid-range affordable smartphones. We did this on purpose because we believe that Nokia is a people's brand. We made sure to give premium quality at affordable price. We will undoubtedly come out with flagship type of products. But our approach to flagship will probably be testing the water, and doing something fun, little bit like we did with 3310.

The prices that we have and the value proposition that we offer is ideal for Pakistan. We are expecting great things in the future

So even high-end segment will be based on unique and fun idea. We are planning to push the boundaries in high-end category as well.

PW: Pakistani's love Nokia, it was a household name back in the days-How do you see Nokia playing on this sentiment in Pakistan and do you have any surprises for your loyal customers? What should we expect from Nokia in the coming day?

PM: We know that Pakistan is a very big market and feature phone business in Pakistan has been amazing. We have done some really exciting activities over the years in Pakistan. So I think we are going to have a very good time once again in Pakistan. The prices that we have and the value proposition that we offer is ideal for Pakistan. We are expecting great things in the future.

Lenovo moto Z

The ultra-thin modular Smartphone



Benchmarking

Vellamo

The Moto Z is tested with Vellamo to check its efficiency in the field of metal test, multi-core test and chrome test. The device has scored 1486 points in metal test, 1955 points in multi-core test and 3193 points in chrome browser test.

AnTuTu

AnTuTu Benchmarking has tested Moto Z to check its performance where Moto Z scored 10 points in multi touch testing with total score of 59007.

The Lenovo Moto Z is a high-end smartphone with modular experience. Modular phone is still a new concept but slowly the manufacturers have started to implement the modular phone concept. It is a high-end smartphone with great specs available for PKR.75000. We have dissected Moto Z features in great details; here is what we found out.

Display

The Lenovo Moto Z is unveiled with a 5.5inch screen with Quad-HD AMOLED display and 1440 x 2560pxl resolution. AMOLED has an edge for displaying darker areas, more crispy colors, better color saturation, and more efficient to battery.

The Moto Z has two color modes for screen, i.e. standard and vibrant. With Standard setting, the colors become cool and whitish, the brightness and sharpness is decreased. When you check vibrant setting, it enhances the color and saturation; the colors appear more vivid and crispy.

Design

Moto Z has an amazingly beautiful design and ultra-thin body of just 5.2mm. The front is decorated with QHD display covered with Gorilla Glass 4.

It is made from military aircraft-grade aluminum and stainless steel. Plus, a water-repellent coating protects it from the inside out. The back-metal surface is pins-striped which is quite unique; this is what enables Moto Z to connect with Moto mods. The metal plate on back gets fingerprint quickly so its hard to keep it clean, so better to be covered with style shell.

Camera

The Moto Z has 16MP lens at the back and at front it has 5MP selfie snapper with dedicated flash. Lenovo has put dual-LED flash with addition of Laser auto focus to help low light focusing.

Moto Z has the option to zoom the object up to 8x while the brightness can be increased through taping over the object. For Video settings, it lists two options -the one for video size and other for slow motion video size. Moto Z can make 4K Ultra HD

video with 30fps and FHD video with 60fps.

Moto Z carries 5MP front facing camera with LED flash, so the low light selfies is not an issue for Moto Z. The HDR mode is also available for front camera that enhance exposure and colors.

Memory

The Lenovo Moto Z comes with 4GB RAM, in terms of ROM it has two version, one 32GB and other 64GB ROM. The SIM2 slot has an option of micro SD card that supports up to 256GB card.

Interface

The Moto Z is using Android Marshmallow v6.0. The interface is a native Android user interface, yet some customization has been made to connect Moto mods, Motorola id etc.

Processor

Moto Z features Motorola's 'Mobile Computing System' along with a Qualcomm Snapdragon 820 CPU (dual-core 2.15 GHz Kryo & dual-core 1.6 GHz Kryo) and Adreno 520 with a Natural Language Processor and Contextual Computing Processor.

Battery Performance

Lenovo Moto Z has just 2600 mAh fixed battery which is a downside of Moto Z. The battery provides satisfactory performance because of Snapdragon chipset that has battery saving feature. The phone also comes with a 15-watt TurboCharger that completely charges the phone in 1 hour and 10 minutes.

Connectivity

Moto Z is a dual SIM phone with LTE support on both SIMs.

The Motorola Moto Z has Type-C USB port which works as audio jack (through an adapter) as there is no audio jack. For local connectivity, the Lenovo Moto Z has Wi-Fi a/b/g/n/ac (5GHz), NFC, Wi-Fi direct, Bluetooth 4.1. Moto-Mods allow connecting range of different hardware including projector, camera, speakers etc.

Good

- 4GB RAM
- Fingerprint scanner
- Modular Phone
- Brilliant Camera
- Supports Fast charging

Bad

- Heavy weight device

Final Verdict

Lenovo Moto Z features Moto-Mods function which is a totally new thing in smartphone technology. The camera results are very impressive and with 4GB RAM and Snapdragon 820 processor, it provides superior experience.



Chinese Mobile Brands Taking over the Smartphone Market

After Apple and Samsung, which mobile company is selling the most smartphones around the globe? If you guessed it to be one of the growing Chinese smartphone manufacturers, you are right. Chinese Brands are expected to lead the market for smartphone shipments in the world by 2017. The Chinese smartphone brands like Huawei, Lenovo, OPPO, ZTE, and Alcatel are creating a big impact, both inside and outside China. It seems quite clear that Chinese companies will not take long to conquer the world.

According to Strategy Analytics, Apple and Samsung are still the market leaders but Chinese handsets are also increasing their market share. Samsung shipped 319.7 million handsets in 2015. However it couldn't maintain the same number in next year and its shipment decreased to 309.4 million in 2016, hence decreasing its market share to 20.8% from 22.2%. Apple shipped 231.5 million

handsets in 2015, but surprisingly, its shipment also decreased to 215.4 million devices. Its market share decreased to 14.5% in 2016 from 18.6% in 2015. Three of the top five smartphone brands in 2016 were Chinese. Huawei stood at the third position as it's obvious from the chart that its shipment has increased to 138.8 in the year 2016 from the previous year in which it reached 107.1 million shipments.

Three Chinese brands were in the top five smartphone list of 2016

The market share of Huawei increased to 9.3% in 2016 from 7.4% in 2015. Same is the case with Oppo that increased its market share to 4.8% in 2016 from 2.7% of previous year. While Vivo's market share also increased to 4.8% in 2016. These stats are clear

Exhibit 1: Global Smartphone Vendor Shipments and Marketshare in Q4 2016

Global Smartphone Vendor Shipments (Millions of Units)	Q4 15	2015	Q4 16	2016
SAMSUNG	81.3	319.7	77.5	309.4
Apple	74.8	231.5	78.3	215.4
HUAWEI	32.6	107.1	44.9	138.8
oppo	14.8	39.7	29.5	84.6
vivo	13.3	39.0	25.6	71.9
Others	186.2	703.2	182.9	668.1
Total	403.0	1440.2	438.7	1488.2
Global Smartphone Vendor Market share (%)	Q4 15	2015	Q4 16	2015
SAMSUNG	20.2%	22.2%	17.7%	20.8%
Apple	18.6%	16.1%	17.8%	14.5%
HUAWEI	8.1%	7.4%	10.2%	9.3%
oppo	3.7%	2.8%	6.7%	5.7%
vivo	3.3%	2.7%	5.8%	4.8%
Others	46.2%	48.8%	41.7%	44.9%
Total	100.0%	100.0	100.0	100.0
Total Growth Year-over-Year (%)	6.0%	12.2%	8.9%	3.3%

evidence that Chinese brands are thriving year by year and are expected to capture major portion of the market in coming years.

Chinese mobile brands are getting a strong market position around the world but are Chinese companies really a threat to the established phone makers? It's a somewhat tricky question to answer. Despite decreasing market share Apple has a strong customer base that prefers iOS on Android and other operating systems which is why Apple has a secure place in the high-end smartphones. But it's true that Chinese manufacturers do pose a threat to many other well-known smartphone makers including Samsung, Sony, HTC, Moto, LG etc.

Chinese smartphones are taking over the world's smartphone market with their high specs and low prices. When you use a Chinese phone, you'll be surprised at how well they work costing so less money. Chinese smartphone manufacturers have an advantage over other phone makers in the global market in part because low-cost labor keeps their manufacturing costs down.

A few years back Chinese smartphones were regarded as low quality but this perception is dying out. Today, Chinese brands produce some of the best devices. Chinese manufacturers such as Xiaomi, Huawei, and Meizu, also have the advantage of building phones locally, which means they have fewer transportation costs - unlike Apple, Samsung, HTC or Sony.

The Chinese smartphone brands like Huawei, Lenovo, OPPO, ZTE, and Alcatel are creating a big impact, both inside China and in emerging economies as well

You'll never find Apple in \$100, Samsung has tried to enter the low-end smartphone market with some lighter version phones but their specs are also low.

Chinese mobile brands not only focus on greatest hardware; they're also interested in balancing price with performance. Earlier, Chinese manufacturers chose Mediatek processor, which might not be up there with Samsung's Exynos or Qualcomm's Snapdragon but it sure is a lot cheaper. Plus Mediatek is also a Chinese company, so it offers cheap local distribution. But this trend is also changing and now we can see many Chinese brands that are moving towards better chipsets makers. Many new Chinese smartphones by Lenovo Moto, Nokia, Oppo, Xiaomi, and Vivo are powered with Qualcomm Snapdragon chipset. This will surely help in removing the stereotyped image of Chinese brands. Another reason why Chinese brands are available at a lower price is that they save money by cutting their advertising cost instead of increasing profit margins in smartphone process. Chinese mobile brands do not invest a lot in advertising, unlike other famous brands. Social networks can be much cheaper and equally effective marketing tools.

Pakistan is the nation of about 190 Million people as of now, which makes it the 6th most populated country in the World and an ideal market for any industry including smartphone manufacturing.

Pakistan is the 6th most populated country in the World and an ideal market for any industry including smartphone manufacturing

Moreover, the mobile phone subscriber base in Pakistan has also crossed 140 million recently. With the introduction of 3G/4G services in the country, the number of smartphone users is also skyrocketing. With such favorable conditions, Chinese brands are also trying to gain a foothold in Pakistani market. In a recent couple of years,

many international smartphone players have entered the market Oppo, Huawei, ZTE, Lenovo etc. Xiaomi and Lenovo have officially launched their brands in last few months while Nokia and Vivo are expected to hit Pakistani market in coming months. This has given people a chance to enjoy good specifications which were unaffordable before. Now we can get almost the same features released by high-end brands but at lower cost. The rise of Chinese mobile brands has not only introduced various options in Pakistani market but has also created job opportunities for many.

The rise of Chinese mobile brands has not only introduced various options in Pakistani market but has also created employment for many

Pakistan is a price conscious market where large numbers of people belong to middle-class families who cannot afford pricey phones. Also, a large portion of population comprises of youth who can't afford to buy expensive phones. Hence, Chinese mobiles with lower prices and high-end specifications are considered the best possible option for most of the Pakistani smartphone users. Most of the Chinese brands like Oppo, Infinix, and Huawei have launched customer service centers in all large cities of Pakistan where devices can be easily fixed at a low cost, which is not the case with other international brands. This has built a good rapport of Chinese brands in Pakistan.

In their homeland, they have a lot of support by the government of China that helps them to survive and to be more competitive. Pakistan and China have very strong relations and now after the monumental CPEC agreement, the trade relations among two countries have become even stronger. Chinese companies will get extra preference as compared to other foreign companies; this will further help Chinese mobile manufacturers to gain a better strong hold in our local market.

By Rizwana Khan

TECH TWISTS



Google Search Queries

Google handles an estimated 1 billion search queries each and every day, releasing almost 200 tons of CO2 per day.

The Very First Apple Logo

The very first Apple logo featured Sir Isaac Newton sitting underneath a tree, with an apple about to hit his head.




Amazon Evolution

Amazon originally was a printed book seller company, now it sells more e-books than printed books.

First Banner Advertisement


The first banner advertisement on Website was introduced in the year 1994.

ADVERTISE
HERE



Red Panda Is Firefox

A red panda is native to the Himalayas and southwestern China. Translated, the English word for red panda is "Firefox," which is where the browser gets its name.

 By Asma Balouch


ON THE FRONTLINE IN BATTLE AGAINST MOBILE APP FRAUD

Innovation in technology is going through a major transformative phase. Along with amazing developments some shortcomings to technology are also surfacing. Today, across all factions of the mobile industry, fraud is presenting unprecedented problems. With the rise of app-install products offered by leading advertising platforms such as Facebook, Twitter, Google, Instagram and Snapchat, smartphones today are a much more appealing target for potential fraud than ever before. Mobile app fraud is relatively a new topic and a matter of huge concern for app developers and publishers. Mobile app fraud

basically refers to illicit activity to rob app publishers or consumers by impersonating real activity on iOS, Windows and Android devices.

MOBILE APP FRAUD REFERS TO ILLEGAL VERSIONS OF AUTHENTIC MOBILE APPS THAT ROB THE PUBLISHER OF IMMINENT REVENUE

The mobile app economy is still in its infancy. Everyone involved is trying his level best to make some profit and get his share.

But fraudulent people try to find different ways to cheat the system and earn money through deceitful means. In-app fraud has been an issue of great concern since the app business started to lift-off. Most professionals agree that the occurrence of fraud is rising at a faster pace in mobile space. It is obvious that the more money brands spend on app marketing, the more tempting the industry is to cyber criminals.

In 2012, Trademob published a study claiming that 40% of all mobile app clicks are either fraud or misfortunes. Since then, the fraud has extended to the performance-based ads, with cost-per-install or

cost-per-action payment structure. Whereas, a recent report of BI Intelligence also revealed that mobile app marketers are expected to have lost over \$100 million in 2016 due to app install and engagement fraud. Furthermore, the report specifies that additional \$250 million will be lost without being certified as fraud, compelling the total impending revenue loss to \$350 million.

TO AVOID FRAUD IT IS RECOMMENDED TO WORK ONLY WITH RELIABLE AND TESTED SOURCES

In this regard companies have implemented server-side receipt validation and item award system. With this system, when a client or customer passes the receipt to the server, the server authenticates the receipt and then grants the purchased item to the user's account on the server. Yet this system does not work for most of the apps that do not have their user data kept and managed by a server.

Some examples of iOS and Android mobile app fraud include illegal versions of authentic mobile apps that rob the publisher of imminent revenue and may also steal the identities of users. Malicious apps in the App Store or Google Play look genuine but actually takeover devices for the purpose of delivering lots of hidden ad views. Illegal ad clicks and views for ad campaigns made to drive installs and re-engagements. When originators or networks are paying publishers on a Cost per Click (CPC) basis, such mobile app click fraud actions take revenue from ad budgets. Falsified app e-commerce IAP acquisitions mimic the signals of a transferal of funds when none has really occurred.

The impostor gets fast income but the app publisher gets nothing. Unwarranted credit is also taken, where the permission-based install of one app is naively combined with the installation of another app that the user did not want. Through device impersonation signals are sent that seem to be from real devices but are actually bogus. Mobile app developers have to face many problems. The businesses of app developers get hurt when their game or app gets hacked by hackers. After hacking the games the actual developer doesn't get the revenue.

Developers can combat fraud by using an app tracker service. Various open-source tracker Software Development Kits (SDK) run a more complex code in the app, which makes it harder to fake an install and requires a fraudster to simulate the whole app rather than manipulate HTTP API. To avoid fraud it is recommended to work only with reliable and tested sources.

USERS GIVE PERMISSION TO FRAUDULENT APPS TO ACCESS THEIR INFORMATION WITHOUT REALIZING WHAT THEY HAVE DONE

Advanced app analytics also enable developers and publishers to evaluate the effectiveness of ad sources. Clients and users should look for references and suggestions when buying apps or advertising. This will to some extent make it difficult for impostors to hoax the system.

Though there is no fool proof way to prevent against in-app fraud on certified apps, but precautions

can be taken to reduce the ratio. Usually users give permission to fraudulent apps to access their information without realizing what they have done. So it is quite important for users to become aware of the suspicious traits. By increasing awareness users will be able to identify fraud and less likely become a victim.

OTHER THAN EDUCATING USERS ABOUT MOBILE APP FRAUD, OPERATORS AND APP DEVELOPERS SHOULD GUARANTEE THAT THEY HAVE RESPONSIVE FRAUD MANAGEMENT SYSTEM

Other than educating users about mobile app fraud, operators and app developers should guarantee that they have vigorous and responsive fraud management system. Security systems can offer fraud management teams with threat intelligence in real-time, enabling them to identify and block fraudulent IPs, user agents and device IDs and prevent fraud before it happens. But having a security system only is not enough, fraud and security teams will have to work flawlessly with one another to alleviate fraud risk.

Associating security information with a fraud management system that depend on vigorous statistical irregularity detection and machine learning can increase the capability to identify odd trends and arrangements that can be linked to fraud on specific apps installed by groups of users in the Communications Service Provider (CSP) networks.

Xiaomi Max

with a bigger display & good battery life

Mi has finally entered Pakistani market with its three latest devices. The Mi Max is Xiaomi's first attempt at building a phablet-sized smartphone. Here is the detailed review of Mi Max.

Display

The Xiaomi Mi Max is 6.4 inch device with HD IPS display, 1080 x 1920 resolution and pixel density of 480 dpi. The handset is covered with 2.5D gorilla glass that brings satisfactory viewing experience. The display has more whiteness as compare to other regular devices. The device has scored 10 points in multi-touch test which means it has an excellent touch.

Design

The dimensions of Xiaomi Mi Max are 173.1 x 88.3 x 7.5 mm whereas, the weight is 203 grams. It is heavy weight device because it carries 4850 mAh non-removable battery. The back body has metallic cover which can't be remove. Cover is totally plain and simple, only back camera with flash light is present at the top left side. Fingerprint scanner is also present at the back.

Camera

The Xiaomi Mi Max features 16MP rear camera and 5MP front camera. Both cameras make a great combination for camera lovers. The back camera of Xiaomi Mi Max is featured with 16MP plus it has flashlight further, it can make videos up to 1080p and 2160p.

Memory

Xiaomi Mi Max has 32GB ROM and 3GB RAM. Internal memory can be increased with the help of memory card up to 256GB. If you are not a heavy user then 32GB is sufficient without any memory card.

The Mi Max consists of 3GB RAM. Games and applications run smoothly without any delay.

Interface

Xiaomi Mi Max runs the latest version of MIUI 8, which is built on top of an Android 6.0 core. The fingerprint



unlock button is placed just below the camera. The sensor is always working so you just need to put your finger on it and it will unlock.

Processor

The Xiaomi Mi Max has 1.8 GHz Octa-core processor which is based on the architecture of ARM Cortex-A53. It has Qualcomm MSM8956 Snapdragon 650 chipset, which supports HD resolutions.

Battery Performance

The Xiaomi Mi Max comes with non-removable 4850 mAh battery. The battery life is great but the phone comes with only 2A charger so it will take almost one and half hour to completely charge the device.

Network / Connectivity

Mi Max is a LTE enabled device that supports all bands in Pakistan. Other connectivity options include Wi-Fi, Bluetooth and FM Radio. It has 802.11 a/b/g/n Wi-Fi support whereas, Bluetooth is 4.2.

The Xiaomi Mi Max has dual SIM connectivity with separate jacket option for memory card.

By Shaheer Riaz

OS: Android, 6.0.1 (Marshmallow)



Display: 6.4 inches



Battery: Non-Removable Li-ion 4850 mAh



Weight: 203 grams



Camera: 16 MP, autofocus, Dual-LED flash



Memory: 3 GB RAM, 32 GB ROM



Processor: Octa Core 1.8 GHz



Price: PKR.24,000/-

Benchmarking

Velamo

The Xiaomi Mi Max is tested with vellamo to check its efficiency in the field of metal test, multi-core test and chrome test. The device has scored 2741 points in metal test, 2747 points in multi-core test and 4941 points in chrome browser test.

AnTuTu

The Xiaomi Mi Max has scored 10 points in multi touch testing and total score is 80988 which is remarkable. Every part of device is tested and it has performed brilliantly in every section.

Good

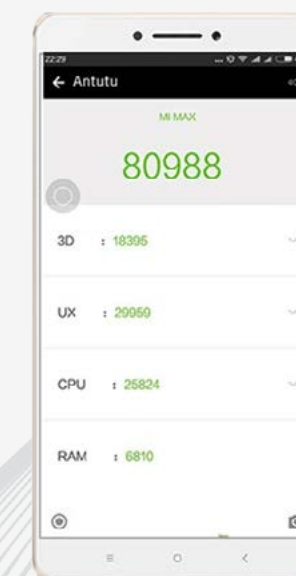
- Fast Processor
- Fingerprint Scanner
- 3 GB RAM
- Powerful Battery

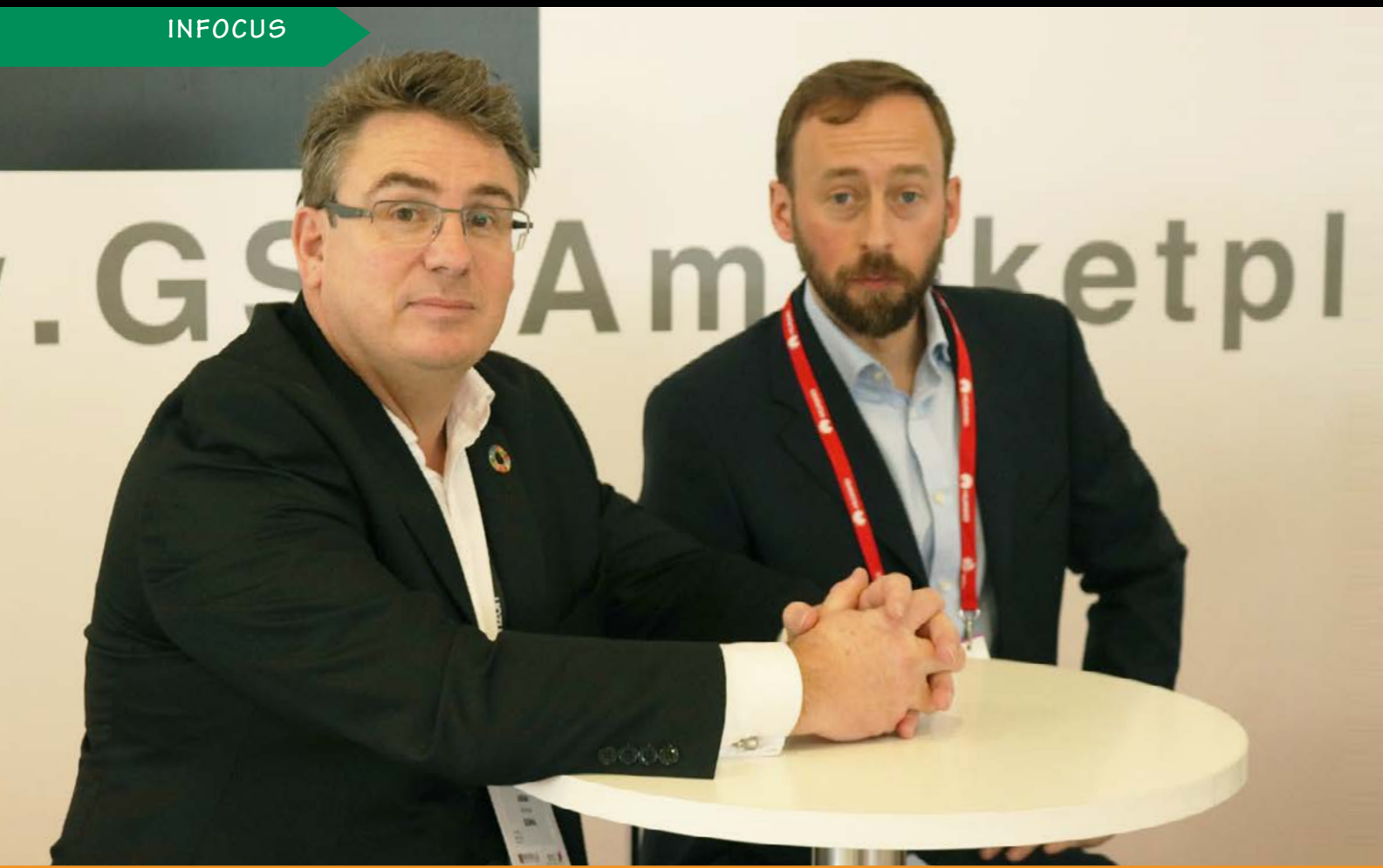
Bad

- Heavy weight Device

Final Verdict

Design wise, Xiaomi Mi Max is brilliant for big screen device lovers. It has 32GB ROM, 3GB RAM, 16 MP rear camera and 5MP back camera. All these specifications are perfect for those people who want a full entertainment package.





How to Expand your Business through GSMA Marketplace

Find out in an Exclusive interview with Gordon Readman and William Rudolph

GSM is an international organization that represents the interests of mobile operators worldwide, uniting nearly 800 operators with almost 300 companies in the broader mobile ecosystem, including handset and device makers, software companies, equipment providers and internet companies, as well as organizations in adjacent industry sectors. GSMA Marketplace is the exclusive online commerce platform that enables buyers and sellers in the mobile industry to connect with each other.

GSMA is not a transaction marketplace, it's a platform that connects buyers with sellers

In a short interview with Phoneworld team (PW), Gordon Readman (GR), Engagement Manager and William Rudolph (WR), the Senior Manager GSMA Marketplace, gave an insight on how businesses can make use of GSMA's Marketplace to expand their business. Here is what they said.

PW: How GSMA Marketplace is helpful to buyers and sellers?

WR: GSMA is an online marketplace that helps connect buyer and sellers in mobile industry.

The benefit for buyers is that they can find all sellers and partners with whom they want to do business. For Seller it is a great opportunity to win new business quickly and cheaply.

PW: Is this marketplace specific to any industry like telecom or is it open to all?

WR: Basically, it is a business-to-business platform and not a consumer platform, it is for people who run their own companies with larger business who need to do business with other companies and this really could be anything. It could be product based but more than half of the things we have on our platform are services. Although the main focus of our platform is on telecom and technology industry.

GR: There are many Pakistani companies that are on our platform, mainly acting as buyers but there are also few sellers as well.



By M. Mohsin Rehman



Rizwana Khan

The idea behind the marketplace is to make our marketplace a 24/7 procurement platform. It's global and worldwide so there is no particular concentration on any specific continent. It is an open to all platform.

PW: Can we compare its services with freelancing? Will it provide the services like app development or software development?

GR: Yes, if the companies want to provide these services, they can. We do have RFIs, sales leads and sometimes RFPs for app development. Whether you are a buyer looking for greater innovation or better prices for procurement of products or services, or a seller seeking to win new business and enter new markets, the GSMA Marketplace will let you browse, contact and connect with companies who can help you achieve your objectives.

PW: How many buyers and sellers are there on the platform?

WR: There are around 800 buyers from all over the world on our marketplace whereas; we also have well over 3000 sellers on the platform right now.

The idea behind the marketplace is to make our marketplace a 24/7 and for 365 procurement platform

We don't hit every country in the world but we certainly are in hundred and eighty countries in the world. These connections enable the buying and selling of all types of products and services.

PW: How exactly does GSMA market place does?

WR: It is more like a dating service for example US there is **match.com**. We match the girl and the boy and helped them in their first date. Whether they choose to carry on that relationship is their choice. So basically, GSMA is not a transaction marketplace, it's something that connects buyers with sellers.

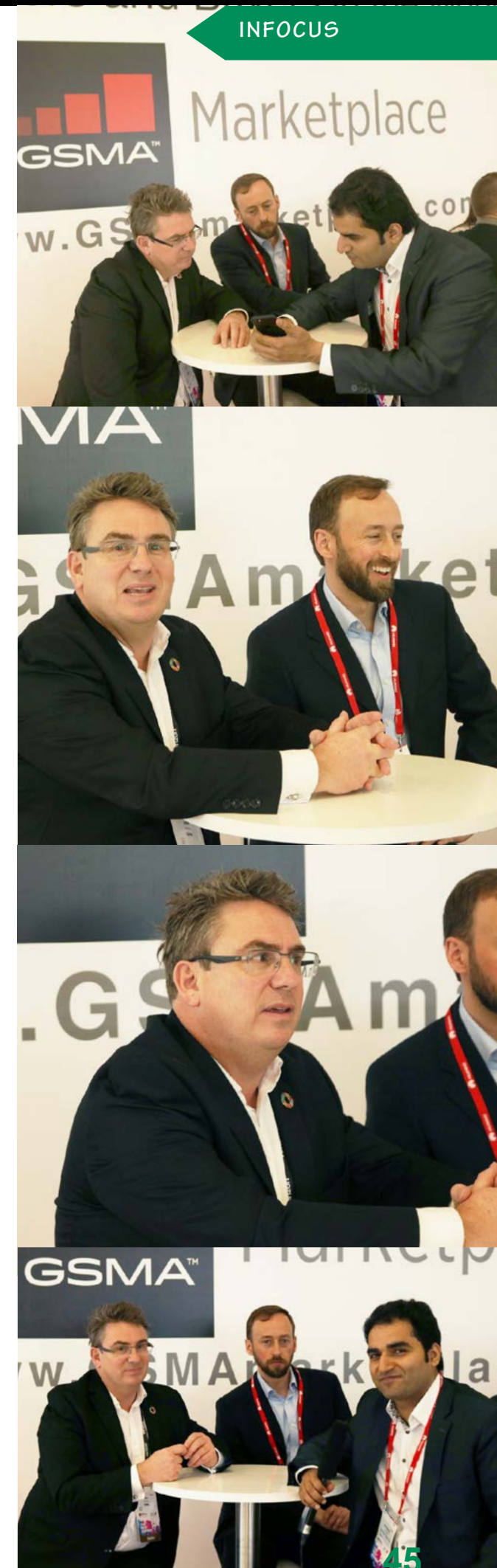
PW: Does GSMA charge anything to buyer and seller?

WR: The GSMA Marketplace is free for buyers, while sellers are charged a small amount of annual subscription that basically helps us to run our platform.

Our aim is to build a global network of all B2B companies on our platform. So, it is easy for buyers to find desired product from all the companies.

PW: What is the procedure to approach GSMA Marketplace?

WR: GSMA Marketplace is a simple online platform where interested buyers and sellers can register to get connect with other businesses and firms.



QMobile M6 Lite

OS: Android, v6.0 (Marshmallow)
Display: 5.0"
CPU: Quad-Core 1.3GHz
Camera: 13 MP, Autofocus, LED flash
Memory: 16 GB ROM, 3 GB RAM

QMobile M350

OS: Android, v6.0 (Marshmallow)
Display: 5.2"
CPU: Quad-Core 1.3GHz
Camera: 8 MP, LED Flash, Autofocus
Memory: 16 GB ROM, 2 GB RAM

Xiaomi Redmi 4a

OS: Android, v6.0 (Marshmallow)
Display: 5.0"
CPU: Quad-Core 1.4GHz
Camera: 13 MP, LED flash
Memory: 16 GB ROM, 2 GB RAM

Lenovo Moto Z Play

OS: Android, v6.0 (Marshmallow)
Display: 5.5"
CPU: Octa-Core 2.0GHz
Camera: 16 MP, LED Flash, Autofocus
Memory: 32 GB ROM, 3 GB RAM

Samsung Galaxy J1 Mini

OS: Android, v6.0 (Marshmallow)
Display: 4.0"
CPU: Quad-Core 1.2GHz
Camera: 5 MP, LED Flash
Memory: 8GB ROM, 1GB RAM

Oppo A57

OS: Android, v6.0 (Marshmallow)
Display: 5.2"
CPU: Octa-Core 1.4GHz
Camera: 13 MP, Autofocus, LED Flash
Memory: 32 GB ROM, 3 GB RAM

Xiaomi Mi Max

OS: Android, v6.0 (Marshmallow)
Display: 6.4"
CPU: Octa-Core 1.8GHz
Camera: 16 MP, Autofocus, LED flash
Memory: 32 GB ROM, 3 GB RAM

QMobile King Kong Max

OS: Android, v6.0 (Marshmallow)
Display: 5.3"
CPU: Octa-Core 1.5GHz
Camera: 13 MP, LED flash light
Memory: 32 GB ROM, 3 GB RAM

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 Avenue, Blue Area, Islamabad
Xiaomi Redmi Note4

OS: Android, v6.0 (Marshmallow)
Display: 5.5"
CPU: Octa-Core 2.0GHz
Camera: 13MP, LED flash, Auto-focus
Memory: 32 GB ROM, 3 GB RAM

QMobile E1

OS: Android, v5.1 (Lollipop)
Display: 5.0"
CPU: Quad-Core 1.0GHz
Camera: 8 MP, LED flash, Auto-focus
Memory: 16GB ROM, 3GB RAM

QMobile Noir i2 Power

OS: Android, v6.0 (Marshmallow)
Display: 4.5"
CPU: Quad-Core 1.2GHz
Camera: 5MP, LED Flash
Memory: 8GB ROM, 1GB RAM

QMobile X32

OS: Android, v6.0 (Marshmallow)
Display: 4.0"
CPU: Quad-Core 1.2GHz
Camera: 5MP, LED flash
Memory: 8 GB ROM, 1 GB RAM

Samsung Galaxy A7 (2017)

OS: Android, v6.0.1 (Marshmallow)
Display: 5.5"
CPU: Octa-Core 1.8GHz
Camera: 16MP, LED flash, Auto-focus
Memory: 32/64 GB ROM, 3GB RAM

Oppo A37

OS: Android, v5.1 (Lollipop)
Display: 5.0"
CPU: Quad-Core 1.2GHz
Camera: 8 MP, LED flash
Memory: 16GB ROM, 2GB RAM

QMobile Noir i7i Pro

OS: Android, v6.0 (Marshmallow)
Display: 5.0"
CPU: Quad-Core 1.2GHz
Camera: 5 MP, LED flash
Memory: 8 GB ROM, 1 GB RAM

Sony Xperia XZ Premium

OS: Android OS, v7.1 (Nougat)
Display: 5.4"
CPU: Octa-core (4x2.45 GHz 4x1.9 GHz)
Camera: 19 MP laser autofocus, LED flash
Memory: 64 GB ROM, 4 GB RAM

oppo A57

the Big Front Camera Phone

Oppo is back with its latest hand set that offers some interesting features and specifications. We have reviewed Oppo's A57 smartphone which is available in Pakistan for PKR.24,899/-

Display

Oppo phones come with the finest displays as compared to all other smart phones. Oppo A57 is a 5.2 inch device with the supportive resolutions of 720 x 1280 pixels. The pixel density is 320 dpi with clear visibility of icons and texts.

It has graphic card of Adreno 505 which is perfect for the mid-range smart phones. It increases the efficiency of graphics almost 30% more than any other graphic card.

Design

Oppo A57 is a light weight device. The dimensions of Oppo A57 are 149.1 x 72.9 x 7.7 mm and weighs only 147 grams. It carries fixed battery of 2900 mAh but still it is very light weight and easy to carry device.

The front look of Oppo A57 is similar to iPhone. The front body has an ear piece, front camera and some sensor at its top side while at the bottom we have fingerprint scanner button that can also be used as home button. A dull bezel layer of same body color has covered the whole screen.

Memory

Oppo A57 has a good memory combination of 32GB ROM and 3GB RAM. Internal memory is excellent and doesn't require any memory card for normal usage. Whereas, 3GB RAM in mid-range smart phone category is a biggest attraction of user.

Camera

The Oppo A57 is packed with 13MP lens for back camera and 16MP lens for front camera. Back camera has LED flash light while front one uses screen flash light. Both cameras can record videos in full 1080p quality.

The Oppo A57 rear camera offers ultra HD shooting mode for taking detailed images. The main modes for back camera are HDR, Panorama, beauty, time-lapse, double exposure, expert mode, ultra HD and GIF. The results for back camera are brilliant for a mid-range smart phone; details, color accuracy, brightness, sharpness and saturation of images are very well-balanced.



The front camera of Oppo A57 has 16MP lens with large 1.2µm pixel and f/2.0 aperture size. It allows more light to enter so we can take a brighter and natural selfies even in low lights.

Processor

Oppo A57 comes with Octa-core 1.4 GHz processor which is 64-bit type processor. It is built on the architecture of ARM cortex-A53 and the chip set is Qualcomm MSM8940 Snapdragon 435. It is faster and more efficient as compare to any quad-core processor chip set.

Battery

Power house of Oppo A57 is packed with non-removable 2900 mAh Li-ion battery. A57 easily provides 7-8 hours of standby time. It has octa-core processor, snapdragon chip-set and 5.2 inch screen that are very supportive for battery saving.

Connectivity

Oppo A57 is a LTE supportive device that supports all the bandwidths of networks in Pakistan while the 4G speed is LTE Cat.5 150/50 Mbps and 3G speed is HSPA+ 42.2/5.76 Mbps.

It is a Dual SIM device that supports Nano SIM with dual standby. Memory card has separate place via which we can increase internal memory up to 256 GB.

Other connectivity options include Wi-Fi, Bluetooth and FM Radio. Wi-Fi supports the standards of 802.11 b/g/n and hotspot while Bluetooth version is 4.1.

Interface

Oppo A57 is using Android version 6.0 (Marshmallow) with the interface of Color OS 3.0. Color operating system provides smooth performance and fast multi-tasking.

Only few bloat ware applications are installed such as theme store, security center, king soft office and backup restore.

By Shaheer Riaz

OS: Android v6.0 (Marshmallow)

Display: 5.2 inches

Battery: Non-removable Li-Ion 2900 mAh

Weight: 147g



Camera: 13 MP with LED flash



Memory: 32 GB ROM, 3GB RAM



Processor: Octa-core 1.4 GHz



Price: PKR.24,899/-

Vellamo Benchmarking

Vellamo benchmarking conducts three tests to check the device performance. Oppo A57 scored 1821 points in multicore, 1315 points in metal test and 2735 points in Chrome browser test.

AnTuTu Benchmarking

AnTuTu benchmarking tests the handset in every field to check its efficiency. Oppo A57 has scored 46567 points and ranked itself in a very good position.

Good

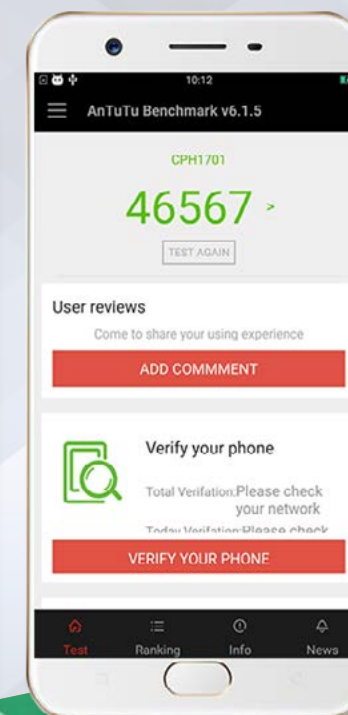
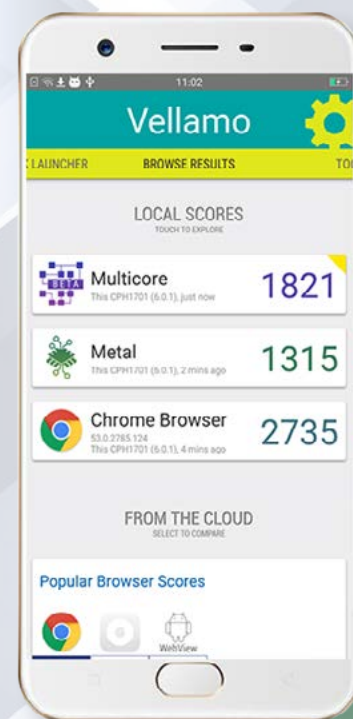
- 3GB RAM and 32GB ROM
- Fingerprint Scanner
- 16MP front camera
- Light weight

Bad


- Doesn't support fast charging
- No LED notification light

Final Verdict

Oppo A57 is the brilliant hand set in mid-range smartphone category. It has 3GB RAM, 32GB ROM, LTE support and many other features available at a very affordable price. But the 16 MP front camera is the highlight of Oppo A57.



TELECOM CAMPAIGNS

4.8  **Telenor Weekly Offer**

Telenor's newly released campaign "Jub Dosti k Darmiyan Koi Ruqawat nahi, Tu Phir Calls Mei Kiu" is no doubt a creative attempt. The TVC promotes the weekly offer of Telenor with a convincing message of "smooth call connectivity". Above all, casting of senior actors has given the advert a more refined and graceful look.

Verdict: Zabardast Advert !!!


Dial *5*700# NOW
& Get UNLIMITED calls only
for Rs.75




4.1  **QMobile X700 Pro II**

This time, stunning Ali Zafar appeared in "Live Your Life, Without Pause" TVC of QMobile's latest smartphone "Noir X700Pro II". The TVC revolves around an amazing plot in which the idea of smartphone multitasking is conveyed to the users. The performance and music has added more creativity to the advertisement. The credit goes to Ali Zafar who convinces you to get a good smartphone, specifically a Qmobile X700 Pro II.

Verdict: Impressive Campaign !!!


2  **Huawei Honor 8 Lite**

Huawei Honor 8 Lite TVC didn't turn out to be too catchy and interesting. The TVC seems more like a scene from a movie but with a story-less plot. The advert only once showed the closer look of Honor 8 Lite but nothing about phone specs. The campaign is quite ordinary in terms of acting, direction and music.

Verdict: Not at all Impressive !!!

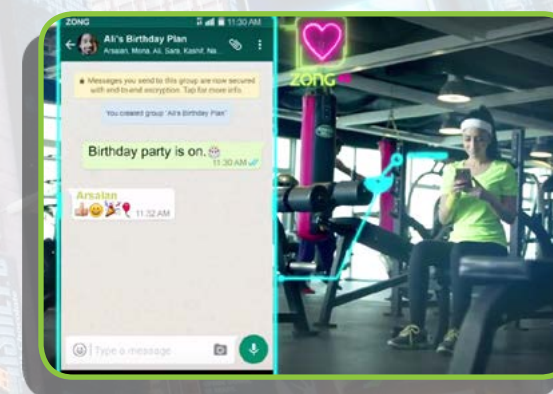


The advertising campaigns play a vital role in promoting a brand/product. A truly memorable campaign creates a visceral response – but one bad campaign can ruin it all. PhoneWorld keeps a close eye on the latest ad releases in telecom industry. Here is a critical review of the latest telecom campaigns.

4  **PTCL Smart TV**

PTCL latest campaign of "Control the Action of Your Smart TV" is relatively a better attempt as compared to its last few adverts. The TVC highlights the features of 'Smart TV' while focusing on its official partnership with FC Barcelona. The ad targeted the fans of FC Barcelona. The cutest ever performance of a 2 years old kid will leave you astounded. The reverse, pause and record features of PTCL Smart TV are being highlighted with good music and a fun factor added in the advertisement.

Verdict: A Better Effort this Time !!!



3.8  **Zong WhatsApp Date Bundle**

For Zong's new TVC to promote WhatsApp messaging, voice and video calls bundle, is a short and effective campaign. The advert briefly conveys the details of package. As WhatsApp is mostly used by the youth, hence the TVC is focused on teenagers. The music and performance in TVC are quite impressive. Hence, within a short TVC, the promotion of data bundle is creatively done.

Verdict: Short yet Creative Advert!!!

5  **Moto National Anthem**

Moto entered Pakistan with a unique marketing strategy by releasing a modern version of Pakistan's National Anthem. The anthem beautifully covers sceneries of Punjab, KPK, Sindh and Baluchistan. The mesmerizing musical anthem is the highlight of this advert that touched our hearts. One can't stop listening to it. The interesting thing about this anthem is that it is recorded while using "Moto Z" smartphone instead of a full-fledged recording camera.

Verdict: Smart & Creative Marketing Approach !!!





Celebrates its 7th Anniversary at CIVCON-VI

On 7th April 2017, Mi created thrills and stimulation in UET through its 7th anniversary celebrations. The theme of celebrating this commemoration was "Passing on an innovative idea about Future Technology and how Quality-Tech can change Tomorrow..."

"Mi Mobile Kiosk" & "Outdoor Activation" by Mi | Smart Link team added value in raising the "Brand Awareness" about Mi Products.

The main goals of celebrating the anniversary included:

- Increase Brand Awareness, Foster Good Will, Long-Term Sales Growth
- Business Promotion with Positive Image
- Direct Interaction with Market and Consumers
- Spread Through Wider Demographic
- Justify Investment & Get Good Return

Chief Guests at Anniversary Event included Mr. Yasir Altaf (Director Operations) Smart Link Technologies, Mr. Ahmad Butt (Marketing Director) Smart Link Technologies, and Mr. Sufian Ahmad (Brand Manager) Smart Link Technologie.

Students participated in contests conducted by Mi to build strong public interaction and promotion. These competitions included Canvas Painting and Web War Contests. At the end of the event Guest of Honors awarded "Redmi 4A" to all the contest winners. An electrifying Musical act by Roxen-Band was also part of the event. A jam-packed crowd of more than 1500 people graced the event with their presence.



Pierre Omidyar, the Man behind ebay

Iranian-American economist Pierre Omidyar is best known as the founder and chairman of eBay, the online auction website.

Business figure, entrepreneur and philanthropist Pierre Morad Omidyar was born on June 21, 1967, in Paris, France. Unlike many other high-tech entrepreneurs, Omidyar didn't set out to become an Internet tycoon. He moved to Maryland as a child when his father accepted a residency at Johns Hopkins University Medical Center. He wrote his first computer program at age 14, to catalog books for the school library.

He graduated from Tufts University in 1988 with a degree in computer science and went to work for a company that developed Macintosh software. Later, he worked for the Apple subsidiary Claris and then helped start a software company in 1991 called Ink Development Corp. The company later changed its name to eShop and was purchased by Microsoft in 1996.

eBay, the multi-billion dollar online auction company that changed e-commerce, all started in the summer of 1995. Omidyar created code for a page called Auction Web on his personal website, letting people list items for auction. To his amazement, the site attracted so many buyers and sellers that he soon had to set up a separate site devoted to auctions, which he dubbed eBay. By charging between 25 cents and \$2 to sellers for posting their auction notice, and taking a small percentage of the sale, the company made money simply by setting up a place for buyers and sellers to meet.

In May 1998, Omidyar was named eBay's chairman. By the end of 1998, the eBay boasted 2.1 million members and generated \$750 million in revenues. So successful did the online auction site become that some industry observers predicted that Internet auctions would become the dominant e-commerce model in the future.

In January 2000, Omidyar accepted his first board position outside of eBay. He joined the board of directors of ePeople, an online marketplace for technical support. With an avowed interest in journalism, he also launched First Look Media in

collaboration with Glenn Greenwald, the former Guardian reporter who published government documents leaked by the National Security Agency's Edward Snowden.

eBay's Pierre Omidyar is no longer chairman of the company he founded, but he still sits on the board and is also a director of its former payment subsidiary, PayPal. Omidyar has slowly been whittling down his stake in both eBay and PayPal by giving shares away to his philanthropic investment firm, the Omidyar Network; he still owns about 7% of eBay. In March 2016, he quietly launched a venture capital firm, Omidyar Technology Ventures, which he is solely funding.



TOP MUST HAVE APPLICATIONS & GAMES FOR YOUR SMARTPHONE

Letter Bounce - Word Puzzles

Rating : 4.1 Price: Free



Letter Bounce is a new type of word game. Solve the crossword style puzzles using pairs of letters to fill in the blanks. Each level has sets of letter pairs that need to be dragged into the blank spaces to complete the words and solve the puzzle.

Pakistan Offline Map & Weather

Rating : 4.1 Price: Free

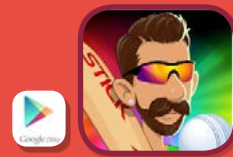
100% Offline & FREE Pakistan Map with POI database weather forecast and dictionary. NOW amazing offline weather plugin included! 14 days weather forecast for every thai cities. Plugin works in offline mode. Detailed current weather with information about: conditions, temperature, humidity, pressure. You can use this map without data roaming, WIFI Connection and hidden costs!



Pakistani Software Developer Application

Stick Cricket Super League

Rating : 4.6 Price: Free



Smash sixes. Sign superstars. Captain your team to global Super League glory in the world's most popular cricket game, Stick Cricket. Take full control of your career - and your team - as a top flight franchise player.

LG Health

Rating : 3.2 Price: Free

LG Health tracks your activity levels and provides an interface and related content based on that information, so all types of users can customize the app to fit their own activity levels.



Peppy Wallpapers

Rating : 4.4 Price: Free



You'll find only high quality and original designs on Peppy Wallpapers. Original Wallpapers: Peppy Wallpapers contains only exclusive wallpapers which are designed by the Peppy Wallpapers team. They are all unique and are exclusive to Peppy Wallpapers.

Lahore Se Islamabad

Rating : 3.9 Price: Free

Lahore Se Islamabad is most realistic and addictive public transportation van driving simulation & road trip parking 3D game. This city driving public transport has designed with cultural environment of Paki destinations. If you like to play bus driver, taxi driver, truck driver, car driver simulator & parking 3D games, you will be addictive of this road trip safe drive public van simulation game.



Pakistani Software Developer Application

Zombie Avengers-Stickman War Z

Rating : 4.5 Price: Free

"Zombie Avengers-Stickman War Z" is one of the best action side-scrollers in 2016! With grand stages, flashy skills, stylish equipment, explosive combat, the game is a perfect combination of Stickman and zombies that takes players into the future, where the world is overwhelmed by zombies, to save the humanity!



Best Fiends - Puzzle Adventure

Rating : 4.6 Price: Free



Pakistani Software Developer Application

Over 50,000,000 people are playing! Get the top rated match 3 puzzle adventure game FREE! Enter the world of Minutia and collect cute characters - Level up your team to defeat the Slugs - and play more than 1000 levels for hours of fiendish match 3 fun!

VolumeSlider

Rating : 4.3 Price: Free

Are the volume buttons on your device broken? Are you always hitting the wrong one? Try VolumeSlider, the volume button replacer. Control up to four different volume streams* on the same screen by simply sliding your finger up or down the edges of the screen. It's that easy, and bonus, VolumeSlider now controls brightness as well.



Smart Drawer - Apps Organizer

Rating : 4.2 Price: Free



Smart Drawer automatically organize you apps for you, working on top of any launcher. Download Smart Drawer, move its icon on your home screen and that's it. You won't have to move your apps in folders, everything will be automatically done for you.

Pakistan Railways Official

Rating : 4.5 Price: Free

Install „Pakistan Railways“ android app and be a part of journey because it is always moving 24/7. Now anyone with Android phone can easily book a railway ticket anywhere in Pakistan within 3 minutes. Don't forget to watch video tutorial as a user guide for this app.



Pakistani Software Developer Application

Mobile Prices in Pakistan

Rating : 4.3 Price: Free



Pakistani Software Developer Application

Mobile Prices Updated Daily Basis. Second hand and New Mobile For Sales. Search Mobile Models. Users Reviews on Mobiles. Search Available , Comming Soon and Discontinued Mobiles.

Dragons: Rise of Berk

Rating : 4.2 Price: Free

Build your OWN Berk! Rescue, hatch and train your favorite DreamWorks Dragons! Explore uncharted lands in a vast Viking world! Join Hiccup, Toothless and the gang to protect your village from the mysterious strangers that threaten peace on Berk. Train your DreamWorks Dragons successfully and they'll reveal new powers that will help to ensure the future of your island.



Airlink Communication dedicates Huawei's "Most Valuable Partner of 2016" award to Late Moazzam Paracha

Huawei a global leading technology brand has recently awarded Airlink the Best Cooperation Award at Huawei's Core Partner Convention Awards 2017. The award was in recognition of Airlink's continuous efforts to promote the Chinese technology brand across Pakistan through its huge network.

The one day event at local Hotel consisted of a Press conference addressing key updates across the Huawei business including a future roadmap for the present year and areas for improvement. The event then concluded with the award ceremony for Huawei's partner agencies. Shaukat Piracha, Chairman Airlink communication and Muzzafar Hayyat Piracha MD Airlink attended event and collected the award on behalf of team Airlink. Team Airlink dedicated the prestigious award to late Moazzam Hayyat Piracha and recognized his due efforts for establishing Huawei's business in Pakistan. Upon receiving the award from Mr. Fanhong Bruce, Vice President of Huawei's MEA and Mr. Blue King GM Huawei Pakistan commended the efforts and unmatched services of his team and Airlink in making Huawei Pakistan one of the best mobile brands in the country.

Mr. Fraz Malik Khan, Deputy GM Huawei Pakistan has also praised the services of Airlink and expresses to get more efficient and strong collaboration in future too. Huawei has a reputation of promoting their partners and has always appreciated the services provided by their partners in Pakistan and all over the globe.



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- 24 Hours Calling
- Standby King



STANDBY KING



- Network: 3G Supported
- Style: Smart Mobile Phone
- VR/OTG Supported
- CPU: Quad Core 1.3GHz
- SIM Card Slot: 2 SIM
- Rear Camera Pixel: 8.0MP AF
- Rare Camera with LED Front Flash
- Front Camera Pixel: 2.0MP
- RAM/ROM Capacity: 16GB+2GB
- Data interface: Micro USB

- Support Frequency: Quad-band, GSM/CDMA, WCDMA
- Standard: HSPA+
- Screen Size: 5.5" HD (720x1280 Pixels)
- Operation System: Android EOS 6.0 (Marshmallow)
- Main Screen Resolution: HD 720*1280
- Screen Material: IPS
- Navigation Technology: GPS
- Battery Capacity: Ultra Long Lasting 5000mAh
- Available Colors: Champagne Gold, Rose Gold & Gray

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X2

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Q Mobile



OTG Power Bank



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5MP Front



5.0" Display



1.3GHz Quad Core



16GB ROM
2GB RAM



mAh Battery