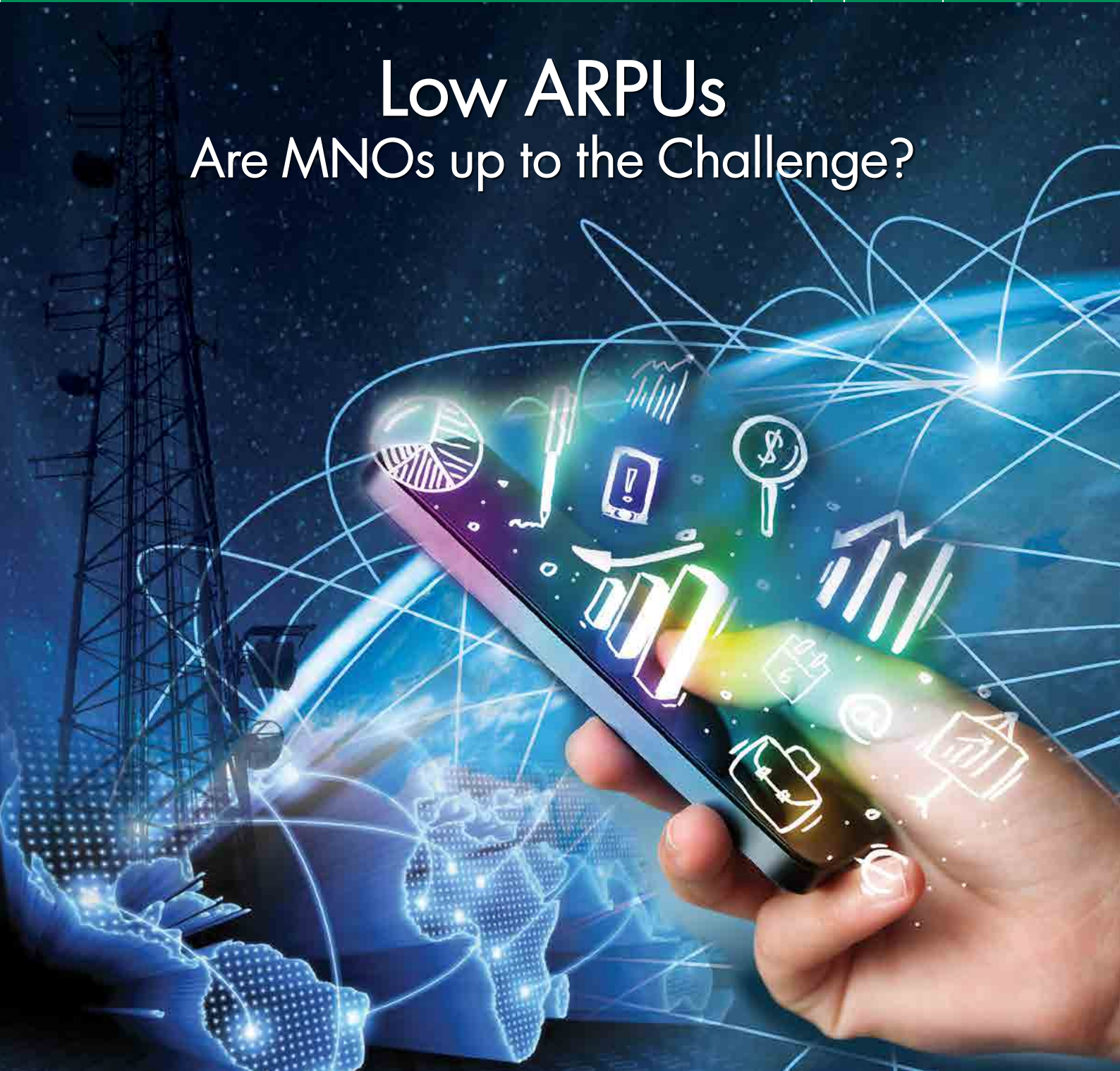


Low ARPUs Are MNOs up to the Challenge?



Zong 4G: A New Dream

Maham Dard, Director,
Corporate Affairs **ZONG 4G**



The Need for Futuristic ICT Policy & Regulatory Frameworks



Q Mobile NOIR Z14 Device Review





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Adnan Khan
Managing Editor

Dear Readers,

Telecom and IT sector has continued with its upward growth trajectory. The number of "connected things" continues to grow as mobile and "smart" device utilization and connectivity continues to expand which will ultimately shape and define the IoT space. Smart technology is also gaining strong foothold in Pakistan, following the international trends. Regulators across the globe have realized the need of policy regulation framework for the future and Pakistan also needs to do the same. Our feature article, "Need of Policy Regulation Framework for the Future" also highlights the same matter. The article has selected four telecom international watchdogs as the case study to analyze their present and future policy regimes and what Pakistan can learn from them.

Our second feature article, "Low ARPUs: Are MNOs up to the Challenge?" discusses in detail the changing market dynamics of telecom industry and its effect on operators' ARPU. We have worked out few strategies that operators can use to better position themselves in the market, subsequently improving their ARPU. Mobile distribution is the least talked-about segment of telecom market, although its importance is monumental for the telecom and IT sector. Therefore, we have compiled a concise but thorough report on mobile distribution industry of Pakistan and each distributor's standing in the market. In the interview section, this time we have an exclusive interview of Maham Naeem Dard who is the Director Corporate Affairs at China Mobile Pakistan.

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

Enjoy Reading...!!!

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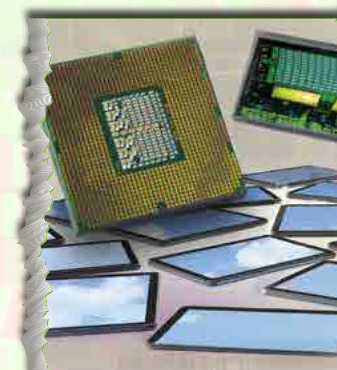
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Low ARPUs Are MNOs up to the Challenge?

In fundamental analysis, Earnings before Interest, Taxes, Depreciation and Amortization (EBITDA), debt/equity and free cash flow are important pieces of a company's finances. Evaluating any stock also requires specific knowledge about the company's sector and industry, as well as knowledge of the forces that affect companies in the same category. However, for a telecom company, measuring its profitability encompasses its most valued asset; its customer base. Customers are the bread and butter for any organization. For the telecom industry, a returning customer becomes a source of constant income and thus, companies look for ways to increase customer engagement.

Average Revenue per User (ARPU):

ARPU metric is quite important in the telecommunications industry,

as it illustrates the company's operational performance.

Despite all the efforts the situation is quite challenging for the investors as far as returns and profits are concerned, amid depleting value of Pakistani currency, low ARPU and tough economic conditions on top of energy crisis

The ability to maximize profits and minimize costs associated with servicing each end user is key to these companies. Since telecommunications companies are service providers instead of manufacturers of a product, investors want to measure marginal profit and cost on a unit level, revealing

how well the company utilizes its resources. The higher the average return, the better. Generally, telecommunication companies that offer bundled services enjoy a higher ARPU.

Past ARPU Trends in Pakistani Telecom Industry:

Like most emerging markets, the subscriber base grew exponentially in Pakistan however, the revenues of telecom operators didn't go up in same proportion. Pakistan's telecom market initially was largely relying on subscribers' growth to stretch its revenues.

Generally, telecommunication companies that offer bundled services enjoy a higher ARPU

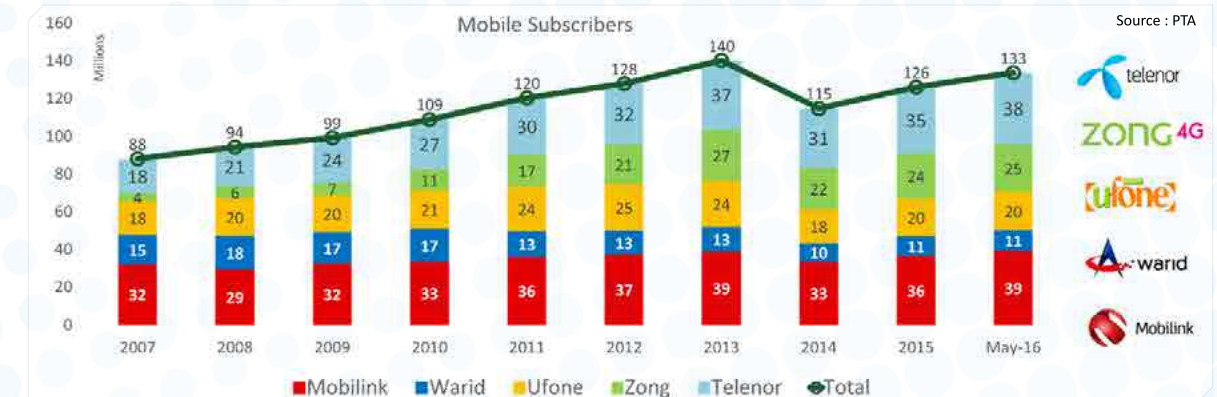
Sufyan bin Azam

Despite all the efforts the situation is quite challenging for the investors as far as returns and profits are concerned, amid depleting value of Pakistani currency, low ARPU and tough economic conditions on top of energy crisis.

Factors to Consider for ARPU Maximization:

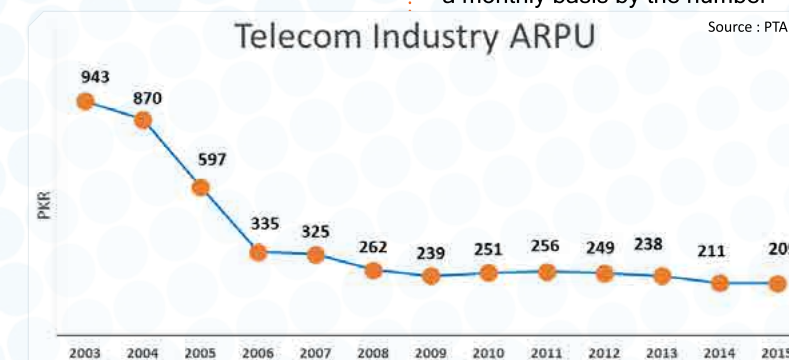
In order to improve ARPU, telecom operators need to closely understand the dynamics that affect their per user revenue, only

revenue, account upgrades and downgrades are a vital part of the equation. This exercise is not merely to define the method to calculate ARPU, rather to identify the factors to consider when looking to increase ARPU.



Naturally, the subscriber growth has been arrested in recent past due to attainment of sufficient saturation, which leaves operators with not many new sales (as compared to yester years). ARPU on the other hand was never worked upon by the operators and hence the growth in revenues is in shackles.

If we study the ARPU trends for past few years, then we might be able to understand the factors that hit the ARPU standings. Before we start our discussion, let's have a look at ARPUs for past few years:



The graph clearly shows the saturation attained and slowly but surely this trend would continue downwards unless prevented.

then they will be able to device strategies that will improve their revenues. While calculating ARPU, one must understand the respective indicators that need to be included in the equation.

ARPU Criteria Breakdown	
Include	Exclude
Monthly Recurring Revenue	Free Users
Account Upgrades	
Account Downgrades	
Lost MRR from Churned Customers	Inactive Users
Total Paying Customers	

It would seem simple enough to divide the average revenue on a monthly basis by the number

of subscribers, but the need arises to separate the profitable subscriber from the freeloaders. Other than the monthly

The Unprofitable Customer:

In the struggle to increase profitability, the most neglected aspect is the existence of the non-beneficial customers. This is one of the most difficult dilemma for any service provider. The fact is that not all customers are profitable. The Pareto principle (80/20 rule) explains this with respect to user consumption of bandwidth and limited resources, meaning that 80% of all resources are consumed by 20% of the subscribers.

The dilemma faced by operators in this situation is what to do with the subscribers or applications that are consuming a disproportionately large amount of resources compared to what they are paying for

The dilemma faced by operators in this situation is what to do with the subscribers (or applications) that are consuming a disproportionately large amount of resources compared to what they (or their customers) are paying for.

i) Post-paid subscribers:

Non-profitable subscribers can fit into several categories. The first group is the post-paid subscribers that consume a disproportionately large amount of resources compared to what they are paying for. This is a relatively common form of the dilemma and is particularly important for bandwidth-constrained operators, since a quick way to delay many network upgrades is to reduce the amount of bandwidth being used, so it follows that limiting (or reducing) the top one per cent of subscribers that are using a high percentage of bandwidth is a logical strategy for these mobile operators.

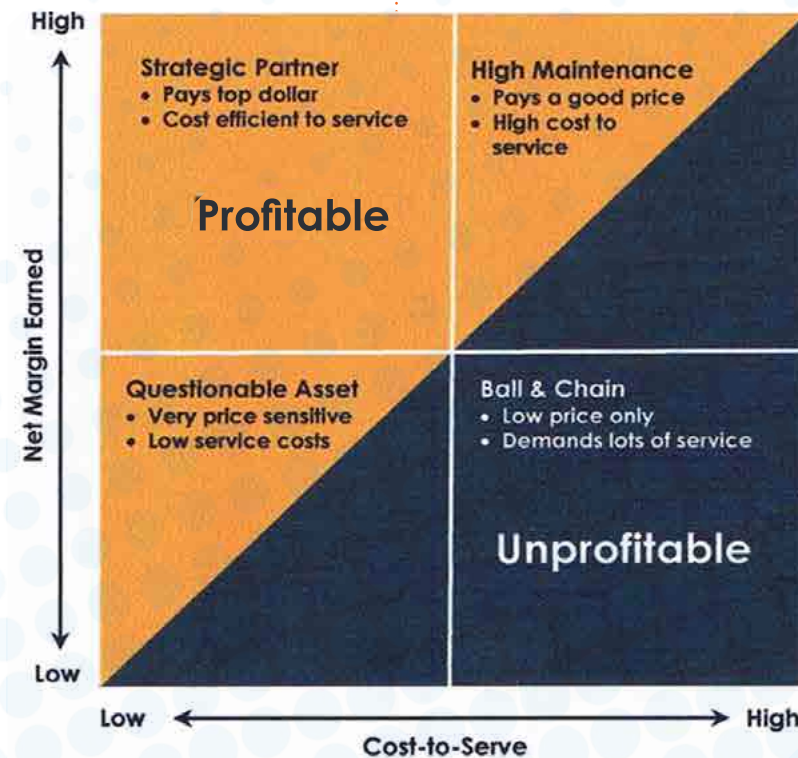
ii) Pre-paid Subscribers:

Another group of non-profitable subscribers are the prepaid subscribers who simply do not use enough services (minutes, messages or data) and hence generate very little revenue. These are typically the very low ARPU pre-paid subscribers that rarely use telecommunications services and therefore don't need to top up very often. Introducing minimums or expiring unused pre-paid minutes and messages can resolve the issue for this group of non-profitable subscribers.

The chart explains the four categories of customers and how the cost to serve them can play a vital role in defining their profitability. The high revenue, low cost customers are your prime assets and companies need to take care in keeping them interested in their offerings. For high cost customers, you need to develop ways to bring the cost

of the services they use to an affordable level.

de-prioritization can be done at specific times of the day or after a usage threshold is reached.



For low profit category, the need arises to increase their use of services targeted to their specific needs. As for low profit, high cost subscribers, it is best to allow them to churn away.

How to Increase ARPU:

Once the customer types and preferences are better understood, only then will operators be able to develop strategies to improve their ARPU. Here are few of the strategies that can help operators in this regard.

Limiting Unprofitable Users:

The first and most common solution used is to enforce usage-based charging where different traffic volumes are charged at different rates. This strategy or solution can become difficult for those operators that offer an 'all you can eat' data plan. Another strategy is to de-prioritize certain traffic types (or applications that these subscribers are using). The

A final (and sometimes even more difficult approach) is to actually encourage the non-profitable subscriber to churn away. This is particularly difficult when a subscriber has an 'all you can eat' data plan which they are not willing to give up. This strategy of churning away unprofitable subscribers can also be particularly difficult for an operator with a revenue-driven culture.

Bundled Products & Services:

Telecom companies today are not just voice or data service providers, they aim to transform into digital lifestyle partners that have integrated into all vertical and horizontal businesses. The idea is not only to sell communication services, but also to provide the hardware to use those services and then the softwares to increase utilization of those services. An example of this is selling handsets. In most markets, handsets act as the sweeteners for acquisition purposes, wherein subscribers

are lured to sign a 12 or 24 month contract in exchange for a free or discounted handset. Although this model is not as successful in Pakistan as in other countries due to the different market dynamics. But this trend is growing globally, with operators competing not just on price via their tariffs, but via the free or discounted handsets. The handset is essentially becoming a service offering of the telecom, part of the overall benefits a subscriber gets when he or she signs on to an operator.

Instead of that, our local mobile operators have come up with a different device strategy and has launched their own mobile brands. Recent examples include Mobilink's Jazz X smartphones and Telenor's Infiniti series handsets. Through these deals, the operators not only earn on the sale of handsets, but also through the use of the services on their bundled data packages. After the launch of 3G/4G services, operators have also launched 3G Wingles and Mi-Fi devices to tap in device market.

Utilizing 3G/4G Services:

With the auction of 3G/4G spectrum in 2014, the industry was anticipating a sizeable growth in profits. The auction organized by PTA gave the industry a much needed breather without which the potential growth of the sector was stunted. The operators contested for the available spectrum, hoping for the dawn of a new era of renewed gains.

However, such strategies have helped telecoms, particularly around the pursuit of two objectives - the increase of subscriber acquisition and the decreasing of subscriber churn. They barely, if at all, help in the pursuit of the third key objective, which is, existing subscriber ARPU growth. SMS addicts reduced their SMS usage via the discovery of SMS replacing apps like WhatsApp. Voice calling apps like Viber have replaced traditional voice calling - as

such, pushing such services to certain types of subscribers that detrimentally affected ARPU. In the recently approved Telecom Policy, government has taken up an initiative to regularize these OTT services although, the hardcore steps have yet to be taken. Once that is done, it will surely improve market environment for operators as well.

Our local mobile operators have come up with a different device strategy and has launched their own mobile brands, recent examples include Mobilink's Jazz X smartphones and Telenor's Infiniti series handsets

The idea is to not only offer the best possible 3G/4G speeds, but also attractive soft products that would make the customers utilize the bandwidth that they paid for. Local operators have been doing a lot in this regard, like tapping into the banking sector, offering micro-financing products. Another example is the smart watch for kids that all operators have offered.

The watch utilizes active data connection to keep track of your kids thus, utilizing network resources. All operators offer a 1 time fee with a fixed monthly or yearly recurring fee. Another area where operators can tap is m-Health.

The ability of mobile phones to monitor basic human patterns using digital input from its user has allowed it to transform every aspect of human life. Given the mobile phone's computing capacity and wide usage, it has

recently been adopted as a tool by the global healthcare industry. Mobile Healthcare (m-Health) - the use of a mobile device to provide healthcare - has the potential to change when, where and how healthcare is provided with the help of mobile applications and services that include remote patient monitoring, video conferencing, online consultations and wireless access to patient records and prescriptions.

m-Health is the use of mobile technology to provide health care support to patients or technical support to health service providers in a direct, low-cost and engaging manner. Operators in Pakistan can collaborate with leading healthcare providers in the country to come up with digital healthcare solutions. Not only that, operators are also tapping in to other m-services as well which mainly includes m-education, m-agriculture and m-banking. These initiatives generally require mobile broadband, which consequently increases data usage hence, improving the ARPU for operators.

The Concept of Hard Bundle:

The increasing penetration of smartphones and data services has an adverse impact on legacy service revenue. Typically, a decline in usage of legacy voice service occurs when smartphone penetration in the network reaches a critical mass of 30-40% of active connections.

As discussed earlier, increased smartphone penetration leads to the adoption of data and OTT messaging services (such as WhatsApp), which in turns enables substitution of voice calls with messaging over IP - in effect the need to make voice calls declines. This emerging scenario leads to the risk of decline in overall legacy revenue, which may lead to decline in ARPU. In addition

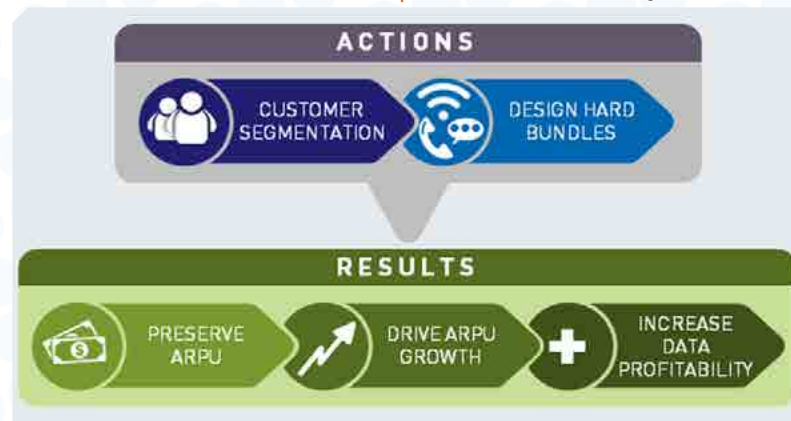
to OTT cannibalisation, operators in prepaid-dominated emerging markets also face the challenge of how to increase ARPU among low-end or low-usage subscribers to drive revenue and improve profitability.

To address these issues, local mobile operators have started to move towards hard bundles. A hard Bundle is defined as a fixed amount of data, voice and SMS for a fixed price. Offering hard bundles targeted towards different customer segments to facilitate service arbitrage (offering more services that a certain customer group actually uses), which helps to preserve or increase ARPU.

Most operators now offer separate packs for voice, data and SMS, which enables end users to select packs according to their requirements - thus optimising their usage - leaving no or very limited room for service arbitrage.

Increased smartphone penetration leads to the adoption of data and OTT messaging services (such as WhatsApp), which in turn enables substitution of voice calls with messaging over IP – in effect the need to make voice calls declines

Hard bundles are designed keeping in mind the historical and expected usage pattern of different customer profiles within each segment. Hard bundles are generally designed to provide more of the declining services



Customer segmentation is important for understanding revenue concentration and measuring profitability for each segment. This includes assessment of usage pattern (historical and current) of each customer segment. Further categorising segments into multiple user profiles (such as high voice and low data, and low voice and high data) based on the level of voice and data usage can help operators understand customer behaviour.

(more voice minutes, more text messages) and current levels of services for which usage has been increasing.

However, the following three factors in predominantly prepaid and low-ARPU emerging markets complicate the implementation of hard bundles.

- Multiple top-up frequency among users with similar usage behaviour: The complexity of designing hard bundles increases

when top-up frequency of users with similar usage behaviour (voice, SMS and data) varies significantly.

- High number of user profiles to address because of the size of the market: It is easy to design hard bundles when 10-15 user profiles cover most of the market (60-70%). However, in a market with a large number of user profiles (more than 20), designing hard bundles targeted towards each user profile increases in complexity.

- Working out the appropriate bundles for each user profile (bundle pricing and the relative size of voice, text and data limits within each bundle) and providing incentives for consumers to migrate from their established plan to a hard bundle is another complexity operators need to address.

The key to successful implementation of hard bundles lies in understanding the evolving usage pattern of different customer segments and designing bundles to ensure that customers perceive value in subscribing to the specific pack designed for a particular usage profile.

In Pakistan, all operators have been offering bundled services, yet they seem to apply to a very few set of user profiles. Pakistan mobile operators need to identify more user profiles and specifically target the low end users and design bundles targeted specifically for them.

Creating Value for Customers:

Customers, without any doubt, are the lifeline of any business. Given the significant transformation in the telecom industry, with sales volume and ARPU static or on decline, telcos have started realizing that the only way to increase revenue is by building strong customer relationships. Miss the deadline,

don't follow through, or never call back, and you can lose your customer for a lifetime. Therefore, it has become an important pre-requisite to invent new ways to build brand loyalty.

Given the significant transformation in the telecom industry with sales volume and ARPU static or on decline, telcos have started realizing that the only way to increase revenue is by building strong customer relationships

Though constantly innovating new products and services require a lot of money and R&D efforts, delivering a great customer service experience is well within the reach of every telecom service provider, big or small.

Provide multi-channel customer experience:

This works on a simple principle - 'Delivering the right content to the right people through the right medium'. Through behavioural targeting and personalization, you should try to find out what your customers actually want. Though 'voice' still rules the charts, as a telco you should also try to invest in different OTT services to tap profitable service opportunities and increase sales and ARPU.

Offer best-in-class purchase advice:

Become your customers' most trusted advisor. Carefully select top quality services for them (from the bunch of services that are offered) and then personalize

those services to meet customers' needs. Through personalized and targeted execution, operators will be able to quickly and more effectively boost customer loyalty.

Reduce costs and improve service:

At times, when most of the OTT players are offering free of cost services, charging hefty amounts for deliverables could do more harm than good. Therefore, operators should try to bring the cost of services down while improving customer service experience. This will help in increasing customer base and in turn boost sales revenue.

Fix problems before they happen:

Try following a proactive approach rather than a reactive approach. So, instead of solving problems, identify the potential issues and solve them before they become a problem. Proactive customer support allows a company to deliver highly differentiated services that reinforce the company's brand identity and customer value proposition. As a result, telcos will attract a loyal following of buyers who appreciate being consistently treated like valued customers.

Be prepared to go the extra mile for your customer:

Going the extra mile for your customers is the easiest way to build an everlasting relationship. Doing this will boost customers' confidence and they will stick to you even when competitors knock on their doors. In fact, creating loyal customers starts with the minimum - meeting their expectations. Your happy customers are your best PR agents, and it is far less expensive to nurture them than convincing and converting a new prospect.

These five customer retention strategies will not only strengthen your client relationships, but will also help you boost your company's bottom line.

The situation in Pakistan is not that bleak. The stagnant revenues are mostly the result of the delayed 3G/4G auction and high taxation, after which, operators are showing really good signs of utilizing the new technology and coming up with products and services that are changing traditional practises and introducing digital cost effective and efficient solutions that have the potential to increase customer engagement and therefore improved ARPU levels.

Operators are also tapping in to m-services as well which mainly includes m-education, m-agriculture and m-banking. These initiatives generally require mobile broadband, which consequently increase data usage hence, improving the ARPU for operators

Pakistan is going through a digital transformation. Once this transformation is complete, it will surely open up many doors of growth and profitability for various businesses especially telecom sector, since all the latest consumer services will be dependent on mobile broadband. The question here is, will the operators be success in cashing this magnificent opportunity?



By Muhammad Awais

QMobile Noir Z14

Unlock Your World



This time the stunning device of QMobile that we have for review is QMobile Noir Z14. It has certainly impressed us, here is the detailed review of this smartphone.

Display

QMobile Noir Z14 is bigger now with 5.5 FHD inch IPS LCD capacitive touch screen with ~72.3% screen to body ratio. The Z14 has a pixel density of 480 dpi with 1080p resolutions.

The device is covered with 2.5D gorilla glass and the display is the best as compared to all previous QMobile devices. Screen colors are sharp, well saturated and brightness is very well-managed. The device has a very smooth touch, but it scored 5 points in multi-touch testing while Noir Z12 scored 10 points.

Design

The QMobile Noir Z14 measures 153 x 75.3 x 7.6 mm that is almost same as QMobile Noir Z12. The weight of the device is 170 grams, which makes it a little heavier than the Noir Z12. QMobile Noir Z14 has a home button which is centered at bottom of the smart phone with the task switcher and back button present on its left or right side. The plastic bezel is covered around the front screen with a metallic material. The upper side of front body has a front camera, sensors and notification LED light. The back side of QMobile Noir Z14 is covered with a shiny metal body.

Memory

The internal storage of QMobile Noir Z14 is 32GB which is more than enough for normal usage. If you still want to extend your memory, you can do it up to 128GB with the help of memory card.

The QMobile Noir Z14 has another excellent feature of 4GB RAM which is considered as the best in smartphones specification. High resolution games, even 3D games and videos do not lag or face any kind of delay during running on this smart phone.

Camera

QMobile has tried its best to provide the maximum best camera in Noir Z14 as its flagship device. The device features 13MP back camera and 8MP front camera which makes the best combination for camera lovers. The both cameras have excellent results in every way. Colors are beautifully captured and features in camera are very easy and useable.

Videos can be made in full high resolution of 1080 pixels. Ultra-pixel mode takes five times the maximum pixel HD pictures. It is specifically for camera lovers who like to focus objects and want to try their photography skills.

Battery performance

QMobile Noir Z14 is packed with non-removable Li-Ion 3130 mAh battery. It comes with 2.0A charger which will quickly charge your device.

The device is carried with 8 cores so it will not make any issue for videos and games. High resolutions with full brightness can drain the battery quickly as well as use of mobile data can also decrease the battery power. However, Noir Z14 has huge 3130mAh battery that can work for whole single day even with intensive usage as compare to other devices.

Processor

QMobile Noir Z14 comes with an advanced 1.8GHZ processor, which is based on the architecture of ARM-Cortex A53. Chipset of MT6755M is featured, which also supports 1080p Full HD display, along with Full HD video recording and playback.

Interface

The QMobile Noir Z14 runs on latest android version 6.0 (Marshmallow). The device has a beautiful display which is well-balanced with screen size and features.

The home button has two purposes; one, its home button and second its fingerprint reader. The fingerprint reader is quick and accurate, it recognizes a finger in seconds.

Few bloatwares like Chameleon, Game loft, Compass and Video Editor are pre-installed. The Chameleon is a magical camera application by which we can take pictures and select as our theme. It has also provided several themes.

OS: Android OS, v6.0 (Marshmallow)



Display: 5.5" FHD IPS



Battery: 3130 mAh, Non-removable Li-Ion



Dimensions: 153 x 75.3 x 7.6 mm



Camera: 13MP, autofocus, dual tone LED flash



Memory: 32 GB, 4GB



Processor: Octa-core 1.8 GHz

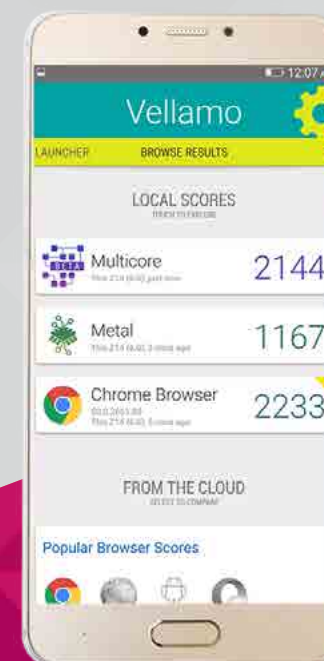


Price: 25,500/-



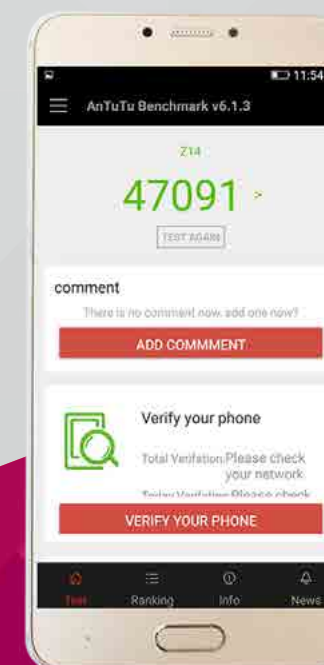
Velamo Benchmarking

We have tested the flagship device of QMobile by Vellamo benchmark. It is a series of test used to check device performance in the field of metal test, multi-core test and single core test. The device has scored good points. In Multicore it scored 2144, while in metal & browser test it scored 1167 & 2233 points respectively.



Antutu Benchmarking

The QMobile Noir Z14 is tested with Antutu Benchmarking to check its efficiency. The device has scored 47091 points which ranked it just below Samsung note 5 and Samsung A9 Pro but overall, score is satisfactory.



Good

- Android v6.0.1 (Marshmallow)
- Reasonable Price
- Advanced Processor
- Brilliant Camera lens

Bad

- No flash light for front camera
- Slight heating issue while using dual camera

Final Verdict

QMobile Noir Z14 is the flagship device of QMobile. It is ready to compete with the other heavy brands like Samsung but in a very affordable price range. It has 4GB RAM, 13MP back camera and 8MP front camera which can give tough time to other smartphones. For all those users who want a high spec device in minimum price range should surely go for QMobile Noir Z14.



The Need for Futuristic ICT Policy & Regulatory Frameworks

A well designed policy & regulatory framework is at the core of almost all sectors of human affairs, but has far more and ever increasing importance for ICT Development.

Generally, Policy is “a set of ideas or a plan of what to do in particular situations that has been agreed to officially by a group of people, a business organization, a government, or a political party.” Why we always need a policy? There are many significant answers to this important question but the most important answer is that policy not only helps in ongoing circumstances, it also guides any department (both private and public) in its future plans as well. Whereas, regulation is “intervention in the market in an attempt to implement policy and produce outcomes which might not otherwise occur, ranging from consumer protection to faster growth or technological advancement”.

Hence, the basic complexity arrives when policy & regulation has to be incorporated in future goals and that's where the great responsibility for decision makers lies. How the future situations can be hypothesized in a policy & regulatory framework? How and what

measures a government needs to take in order to tackle future challenges? Not only these, there are many other areas for which the decision makers are supposed to think well and then design a policy & regulatory framework.

The basic complexity arrives when policy & regulation is incorporated in future goals, that's where the great responsibility for decision makers lies

A big upcoming wave of change in the telecommunications sector will be the emergence of next generation mobile broadband networks i.e. the likes of advance LTE and 5G where mobile devices and related broadband connectivity will continue to be more and more embedded in the fabric of society. Importantly, they are the key in driving the momentum around some important trends such as Internet of Things (IoT), Over the Top services (OTTs), m-Services (m-Health, m-Education etc.), Smart Cities and Video Streaming & Content. The number of connected people and importantly things continue to grow as mobile and



By Saima Ibrahim

“Smart” device utilization and connectivity continues to expand—which will ultimately shape and define the space for things to come.

Phoneworld attempts to highlight what other telecom policy and regulatory organizations have achieved as far as policy and regulation developments for the future are concerned and how Pakistan can benefit from it. Phoneworld has selected USA's Federal Communications Commission (FCC), UK's Office of Communications (Ofcom), Singapore's Infocomm Development Authority of Singapore (IDA) and India's Telecom Regularity Authority of India (TRAI) for a snapshot comparison. We have analyzed Pakistan Telecommunications Authority's performance and standing as compared to these other four international regulatory authorities with reference to emerging technologies.

Internet of Things (IoT)/Smart Cities

The concept of “Internet of Things (IoT)” has evolved from the convergence of wireless technologies, micro-electromechanical systems (MEMS) and the internet. IoT is basically connecting any device with an on and off switch to the Internet (and/or to each other). And the list of these devices include everything from cellphones to coffee makers, washing machines, headphones, lamps, wearable devices and almost anything one can think of. This is why every government must think for its possible intervention into the system in order to benefit more consumers. As technology costs are going down and smartphone penetration has sky-rocketed in the last couple of years hence, these things are creating a perfect environment for the IoT.

According to IDC, there will be 50 billion connected devices by 2020 that will generate almost US\$900 billion revenues. The expected demand of course will be requiring a harmonized policy and regulatory framework but additionally in certain sectors, Governments will have to take a lead in making it more conducive for other eco-system players for wider adoption.

Among all these regulators, FCC and PTA to some extent, has a much clearer vision or well-developed thought process for development of IoT and smart cities. The FCC CEO anticipated that FCC along with industry and standard bodies will soon stimulate a security framework for 5G and IoT that will evolve to accommodate new functions and security threats.

A big upcoming wave of change for the telecommunications sector will be the emergence of next generation mobile broadband networks i.e. the likes of advance LTE and 5G

Also after going through all these regulators' policies, it becomes evident that clear regulations is still a job to be done and it will appear for IoTs in near future as the governments have realized well its potential and its projects are on almost on everyone's radar. In order to promote the smart city initiatives and ensure its products and services, the governments will further realize the need of well-established regulations where ever needed in near future, and the sooner it is the better.

A national strategy supported by strong and stable regulatory framework for the IoT/Smart Cities, if designed and implemented correctly, would maximize the opportunity for the Internet of Things to deliver substantial social and economic benefits.

Over-the-Top (OTT) & Voice Over Internet Protocol (VoIP) Services

The conventional mode of communication has been replaced by the new third-party applications etc. that includes Skype, Viber, WhatsApp, Snapchat, Facebook, Line and many other over-the-top services. There are mainly three types of disruptive OTT Services i.e. Communications, Application and Video Content.

Regulators	Internet of Things (IoT)
MoITT/PTA	PTA vision 2025 has mentioned IoT and smarter communities as a key element for future development. With 2.1 Bn connected devices by 2025 in Pakistan it sees this as an opportunity for the existing local operators and other ecosystem players towards creating smarter societies. The MoITT policy announced recently has also address a number of policy initiatives towards development of infrastructure to support IoT.
FCC	FCC has worked on IoT initiatives for last few years on its Smart Cities and Connected Communities Framework which is a short guide to coordinate federal agency investment and collaboration for smart city technology. FCC is in the process to acquire more spectrum to connect Internet of Things devices. For this reason FCC will look into the regulatory barriers for providing more licensed and unlicensed spectrum for IoT. The FCC would have to report back to Congress with recommendations within a year.
Ofcom	UK has no policy regime for IoTs but private companies like TechUK and IoTUK are presently connecting the citizens by introducing smart city projects for them. Ofcom has recently allocated 10 MHz of VHF spectrum which will enable IoT devices to connect wirelessly over long distances.
IDA	IDA has established GovTech agency to promote all IoT, smart cities Smart Nation Platform. GovTech will partner with public agencies, industry and citizens to transform public service delivery.
TRAI	IoT & smartisation are still in early stages in India which emphasizes the need for a wide range IoT policy. The Prime Minister of India has also given the idea of Digital India with talk of making 100 cities smarter and “IoT India Congress 2016” will discuss governance & policies to come up with a roadmap for the evolving IoT in India. It will submit consultation documents next year to the Government for approval.

OTTs	World Wide Users 2016
Line	215 million
Viber	249 million
Facebook Messenger	900 million
WhatsApp	1000 million
Skype	300 million

OTTs are portraying huge threat to the traditional telecom services while creating many regulatory imbalances for the operators. Other broad public policy issues regarding all types of OTTs include impact on economy and security issues due to reliance on third party. The following chart as outlined by the International Telecommunication Unit (ITU) includes just some of the regulatory imbalances created by OTTs these days:

Areas of regulation	Network Operators	OTT Players
Licensing	Must purchase licenses from the government to operate	Often exempted
Quality of service	Licenses include requirements for SLAs	<input type="checkbox"/> No QoS guarantee <input type="checkbox"/> QoS issues blamed on network provider
Price changes	Regulators' approval is needed in advance	<input type="checkbox"/> No need for authorization <input type="checkbox"/> Loose agreement is offered which is subject to change at any time
Operating Area	Only serve customers within the regulated jurisdiction	Serve any user globally

Source: ITU

Other than this, some fundamental policy issues presently faced by all mobile networks are the frequency spectrum, infrastructure obligations and regulatory levies for them whereas, OTTs do not come under these rules. This is why, it is the right time that the governments come up with an appropriate regulatory frameworks for OTTs in order to avoid these imbalances.

Regulators	OTT & VoIP
PTA	PTA has proposed for a collaborative framework in its vision 2025 Document and has proposed that all OTT and VoIP services to be offered through existing MNOs with a mutually accepted commercial understanding instead of being provided by unverified service providers. PTA will work with all stakeholders to create a balanced regulatory framework to manage such services. The framework desires the providers of such services to install their LI equipment in the country
FCC	FCC is working on developing privacy rules for ISPs which will ultimately effect the OTTs. The relevant stakeholders will come up with suggestions by end of 2016. New FCC draft internet rules to ensure reasonable network management were released on March 12, 2015. This might take some time to be finalized
Ofcom	Ofcom permits experimentation with new business models that rely on certain forms of traffic management. Consultation papers in process to develop policies for digital communications
IDA	The govt. while realizing the worth of VoIP has devised specific licenses for VoIP connecting to PSTN which are not peer-to-peer licensed and also made them subject to competition law
TRAI	TRAI had released a consultation paper on Over the top services in 'Regulatory Framework for Over-the-Top (OTT) services' seeking comments from the stakeholders

FCC, PTA, Ofcom, IDA and TRAI, all are in process to develop frameworks for OTTs as the major hindrance of OTT growth is the lack of regulation. GSMA and ITU have also outlined some key recommendations to regulatory authorities in order to incorporate OTT regulations and policies including:

(i) According to GSMA, the starting point for the development of suitable regulatory framework for OTTs is actually first to define the foundation for classification of OTTs either as Communications Service Providers or as Application Service Providers.

There will be 50 billion connected devices by 2020 that will generate almost US\$900 billion revenues & an expected demand of course will be requiring a harmonized policy and regulatory framework - IDC

(ii) Develop a balanced regulatory framework (dealing with taxes issue etc.) that can support both telcos and revolution of OTTs

(iii) Devise policy on net neutrality

(iv) Ratify laws specially for consumer privacy and data protection

Mostly, the regulators are in process to develop a comprehensive policy & regulatory policy for OTTs and presently are working on consultation papers for this purpose.

m-Services

Technology is transforming the way we conduct our daily life activities. Similarly, mobile phones have entered in to almost every sector of human life including commerce, health, agriculture, education and banking and last but not the least government sector as well.

With these latest innovations, human life has become much easier today. Let's discuss how our selected telecom regulators are taking advantage of it in their respective countries.

m-Commerce

PTA and State Bank of Pakistan have issued two sets of regulatory frameworks for branchless banking to facilitate mobile operators, Fintechs and other service providers. Pakistan is amongst the first few countries where m-Commerce was launched and is quite successful. Whereas in US, FTC as primary agency regulates the ecommerce activities & protect the consumer's right. This includes regulations for a number of e-commerce activities such as commercial email, online advertising & consumer privacy.

A national strategy supported by strong and stable regulatory framework for the IoT/Smart Cities would maximize the opportunity for the IoT to deliver substantial social and economic benefits

UK also has well-developed Regulations for e-Commerce called "Electronic Commerce Regulations 2002" that are actually the EU's laws. This Directive is introduced to harmonize & clarify the rules of e-business throughout Europe to boost up consumer confidence.

In Singapore, Monetary Authority of Singapore (MAS) formed a Financial Technology & Innovation Group (FTIG) to drive the Smart Financial Centre initiatives. FTIG is responsible for formulating regulatory policies & developing strategies to facilitate the use of technology and innovation to better manage risks, enhance efficiency, and strengthen competitiveness in the financial sector. So, there is proper legislation for e-Commerce that covers rules for all m-Commerce related activity.

India has recently formulated the FDI policy for e-commerce industry whereas, online payment legal regime is still missing in India. Presently, the Startup India initiative, launched by the Government of India in January 2016, has dedicated a US\$1.5 billion fund to support startups.

m-Governance

Mobile technology is also significantly expanding governments' capacity to produce benefits and deliver outcomes for government and its respective citizens and businesses alike. At the same time, it has made positive impact on overall national economic growth of the countries. It ensures that electronic services are available to people via mobile devices.

Pakistan is amongst the first few countries where m-Commerce was launched quite early and is now presented as a major success story

M-Governance initiatives in Pakistan mostly come under the domain Provincial IT Boards that are responsible

for regulation and development of such services. However, the task of technology development and how it interacts with government and other service sectors such as law enforcement, health, education etc., would still require MoITT & PTA to work with other eco-system partners. The PTA Vision document 2025 and the MoITT Policy Document lays a strategic focus on ICTs to promote innovation and creativity for governance. It would need to create an in-depth regulatory framework and work in collaboration with other entities such as PMDC, HEC, NEPRA & DGPI, and Provincial IT Boards etc.

In the US, USA.gov is established to create and organize timely needed government information and services and make them accessible anytime, anywhere via mobile or computer. USA.gov is legislatively mandated through Section 204 of the E-Government Act of 2002. Presently, US has the award winning digital approach in the world. UK has also a separate entity called, "Government Digital Service (GDS)" which is part of Cabinet Office and aims at digital transformation of government. UK has introduced several m-Governance initiatives for the public.

FCC, PTA, Ofcom, IDA and TRAI all are in process to develop frameworks for OTTs as the major hindrance of OTT growth is the lack of regulation

IDA developed its eGov2015 Masterplan which has ensured 100% digital govt. in Singapore whereas, the Government under its "Infocomm Media 2025" plan has further plans to connect each government department with its public via smartphone.

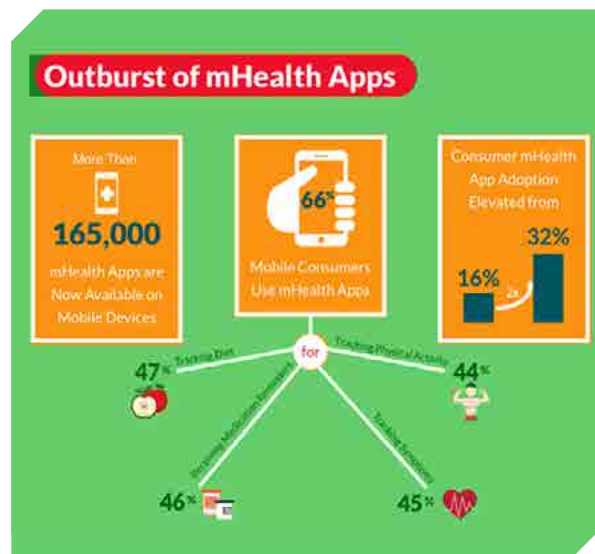
m-Health

With the growing use of mobile phones, the gadgets have also intervened into the medical sciences field. A global survey of 114 nations undertaken by the World Health Organization (WHO) found that many countries have established m-Health initiatives in last few years, realizing that mobile can play very effective role in health services.

Again, m-Health issues in Pakistan relate to state governments and provincial IT Boards are responsible for regulations and development of these services. However, the task of technology development and how it interacts with other services sectors such as health would still require PTA to work with other ECO-System partners. PTA & Provincial IT Boards would need to work with PMDC and the Pakistan Standards organization in addition to medical research and Teaching Institutes to create clearer regulatory frameworks for m-Health services to develop in more harmonized manner.

There is a need to create more in-depth regulatory frameworks and this will need close collaboration with all regulatory bodies, Industry and the Provincial Governments

In the USA, the Food & Drug Administration (FDA), Federal Trade Commission (FTC) and the FCC all together have shared jurisdiction over some parts of the federal regulation of mHealth. In 2012, FCC has approved Mobile Body Area Network (MBAN), which allocates an electromagnetic spectrum for personal medical devices. In addition to this, FTC simultaneously released its own business guidance that aims at helping health app developers fulfil with the FTC Act for building privacy and security. Whereas, in UK, there is still regulatory uncertainty around m-Health apps and wearables but it is still a very fast growing industry with Ofcom expectations to raise it to £2.9bn by 2018.



Singapore is no doubt a very technologically advanced country. It has recently introduced many m-health initiatives while mainly focusing on mobile apps that can help individuals but as far as a crystal clear framework is concerned, IDA lacks supporting policy for m-Health. The leading mobile operator Singtel is contributing to m-Health efforts by offering its 3G/GPRS network. While there are organizations like "Napier Healthcare" that are presently working in this field.

m-health is having a significant impact globally on the delivery of healthcare but most regulators around the world are still uncertain how to address this phenomenon.

Over 150 countries have yet to develop m-health regulatory frameworks or guidance.

m-Education

Like m-governance and m-Health, reach and quality education has also become a top area of concern for the Government of Pakistan with more than 48 million school children in the education system and the same number out of it. Various educational applications have been developed by public and private sector of Pakistan but no formal regulatory framework exists to regulate any of m-education service activities primarily because education is more a provincial subject and is non-standard for most parts. Some services have started to emerge such as school attendance system etc., but it would help if a more coordinated approach is taken between the educational managers that includes IT Boards, Education Regulators and PTA. India is also opting for m-Education to bridge the wide gap but is still in the early stages of introducing it in some of its provinces and lacks a proper regulatory framework.

m-health is having a significant impact globally on the delivery of healthcare but most regulators around the world are still uncertain how to address this phenomenon. Over 150 countries have yet to develop mhealth regulatory frameworks or guidance

In the USA, mobile learning technology has witnessed a huge growth, FCC has recently updated regulations initially instituted in the 1991 Telephone Consumer Protection Act (TCPA) & Communication Act to incorporate m-Education. Also there is a digital curriculum designed under the National Education Technology Plan 2010 that provides institutions with best smart syllabuses.

The issue of separate regulatory framework for media and telecom is quite a significant challenge for Pakistan

Singapore has a well-established policy framework for mEducation. FutureSchools@Singapore, is a government-led initiative that aims to enhance the range of educational offerings to help the learners with technology and integrate it into the delivery of materials. Apart from western countries, the most appreciable efforts in this regard are from the government of Singapore. Its Masterplan for ICT in Education (1997-2002) was first of its kind that was developed and now modified in 2014 while incorporating the use of mobile phones along with other technologies for betterment of education sector.

m-Content & Live Broadcasting

While, m-content and live broadcasting has gained

Mobile Services: m-Commerce, M-health, m-governance & m-Education	
PTA	<ul style="list-style-type: none"> Regulatory framework for branchless banking by PTA & SBP exists and is one of the few first ones For m-Services, MoITT has established NIRT organization which is still to make any substantial impact Provincial IT boards specially PITB has launched several health care initiatives in recent past such as Dengue Activity Tracking System, Disease Surveillance System, Medicine Inventory Management and Drug Inspection and Monitoring Some m-Education services have started such as school attendance system etc. by PITB and KP IT Board
FCC	<ul style="list-style-type: none"> FTC as primary agency regulates the e-commerce activities & protect the consumer's right. USA.gov is legislatively mandated through Section 204 of the E-Government Act of 2002. Then later a "Digital Government Strategy" is established under the FCC Digital Strategy. The Food & Drug Administration (FDA), Federal Trade Commission (FTC) and the FCC all together have shared jurisdiction over the federal regulation of m-Health. In US, FCC has recently updated regulations instituted in the 1991 Telephone Consumer Protection Act (TCPA) & Communication Act to incorporate all the scope of m-Education.
Ofcom	<ul style="list-style-type: none"> EU's laws "Electronic Commerce Regulations 2002" are the well-developed laws for e-commerce. Separate entity for m-Governance, "Government Digital Service (GDS)" is part of Cabinet Office. There is regulatory uncertainty around m-Health apps and wearables but it is still a very growing industry with Ofcom expectations to raise it to £2.9bn by 2018. Ofcom presently offers guidelines for mobile/distance education in UK.
IDA	<ul style="list-style-type: none"> Monetary Authority of Singapore (MAS) formed a Financial Technology & Innovation Group (FTIG) to drive the Smart Financial Centre initiatives. eGov2015 Masterplan that has ensured 100% digital govt. in Singapore whereas, the Government under its "Infocomm Media 2025" plans aims to further grow. National mobile operator, Singtel is contributing to m-Health efforts by offering its 3G/GPRS network along with "Napier Healthcare" that also works on m-Health. FutureSchools@Singapore, is a government-led initiative that aims to enhance the range of educational offerings to help the learners with technology.
TRAI	<ul style="list-style-type: none"> India has recently formulated the FDI policy for e-commerce industry whereas online payment legal regime is missing in India. The Startup India initiative, launched by the Government of India in January 2016. India is in initial stages of mobile usage for m-Governance, mHealth and m-Education and is working without a proper framework. With its 100 smart cities initiative started this year, it still lacks a proper regulatory framework.

popularity worldwide but in recent years it has also gained momentum in Pakistan. The fundamental challenges for live broadcasting include the lack of knowledge in the use and availability of content in local language, loose copyright enforcement, literacy and low broadband penetration (that is now seeing improvement especially after 3G/4G launch). The issue of having separate regulatory frameworks for media and telecom and a lack of clearly defined legal and regulatory framework for online content is quite a significant challenge for Pakistan. This phenomenon has further been intensified due to the blasphemous content that generally gets uploaded on social sites, making the task of creating on-line content regulations even more difficult. Recently, Pakistan has come up with its first ever Cyber Crime Law which is a step towards regulating the online content to some extent.

As per the Telecom Policy 2015, PTA now manages content over the internet through integrated licenses or ISPs as per its licensing conditions under the Act. MoITT has recommended to the Government to authorize PTA to determine the characteristics of content irrespective of the channel used for its supply. PTA will have to consider the characteristics of each channel in determining how to manage its content which it will do under a well-defined framework. The government has recently tasked PTA, PEMRA and other Government organizations to draft clearer direction for on-line content.

Whereas, in USA, FCC has amended its "Communication Act" and added all rules for relevant areas of live broadcasting including digital TV, broadcast

journalism, its licensing process etc. Similarly, in UK, the Ofcom Broadcasting Code outlines the rules for this area.

Interestingly, Singapore has a very efficient and forward looking entity that is in charge of on-line as well as broadcasting content under one roof. The broadcast sector of Singapore is regulated by the Infocomm Media Development Authority (IMDA) of Singapore. IMDA monitors local and global market trends, developments and regulatory measures. They believe in remaining technology-neutral, to ensure that policies and regulatory frameworks are effective and relevant. IMDA seeks to shape a market that benefits consumers through greater choices and the proliferation of innovative products, services and content.

Conclusion

While, Policies are basically a broad concept that embodies many dimensions, the actual challenge is how well the governments articulate the future regulatory frameworks in a comprehensible way to safeguard the future. The coming years are likely to see even greater momentum in the information and communication technologies and only well-prepared telecom regulatory authorities will get benefit from it and witness an economic boom. Pakistan can use these examples to learn and develop its own regulatory frameworks for ICTs on priority bases. The future is all about technologies and its usage for the betterment of consumers hence, only those nations will manage to take advantage of such opportunities that have effective regulatory frameworks for it.



Respondents' familiarity with VR:

39% "very familiar"
50% "somewhat familiar"

Respondents' familiarity with AR:

"very familiar" 38%
"somewhat familiar" 42%

77%

RESPONDENTS WITH HANDS-ON VR/AR EXPERIENCE

37% Respondents whose companies are currently using VR

Respondents whose companies are currently using AR 39%



OF RESPONDENTS NOT CURRENTLY USING VR/AR...

48% are considering adopting VR
23% within the next 3 years

67% are considering adopting AR
30% within the next 3 years

Top 3 areas of interest for using VR:



Top 3 areas of interest for using AR:



All data based on a survey of 205 professionals in organizations around the world. 49% said they work in the IT industry and 46% said they are in an executive or management position. A note about the results: 14% of respondents said their company makes VR technology and 19% of respondents said their company makes AR technology.

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Huawei Conducts the First Ever International Summit "Collaborate 2016"



Huawei Conducted the First Ever International Summit "Collaborate 2016" in which all Operators and Industry leaders participated. International partners of Huawei and some big companies from China and Middle East were also present at the event. The fundamental aim of "Collaborate 2016" was to explore the strengths of Digital Collaboration and sharing individual experiences and views on digital service development and the platform.

The Summit was conducted on 22nd September 2016 at Serena Hotel in Islamabad. Huawei organized a digital services collaboration platform of operators, service providers and content providers for triggering osmosis of ideas.



This is the first time that any one has taken a serious step to build a bond among different stake holders in telecom industry. All the operators of Pakistan had their representatives along with the two foremost CP's CEO of Pakistan Mr. Abrar Ali Khan from Rockville & Mr. Waqas Zahid Abbasi from IDEATION.



Both the individuals who were representing the third party companies discussed the challenges faced by the Industry for the Digitization & evolution of Conventional VAS into digital.



The Virtual Reality part of IDEATION has been the striking & conspicuous part of the conference as this is the first time someone conducted the live demonstration, making the audience believe that Pakistan isn't far from brining the latest & state of the art technology products to its people. Strong efforts were made by Huawei & its partner company IDEATION for brining-in the complete echo system of Virtual Reality into the region. This is considered as the next big thing in coming years by many tech organizations and Huawei's role for being the Market leader into the world was very much appreciated along with the stunning effort made by IDEATION's CEO Mr. Waqas Zahid. Mr. Zahid also shared his future endeavors with the audience and IDEATION's plans to present a complete ecosystem of VR in Pakistan & Middle East very soon, an initiative that it has taken up in collaboration with Huawei.



HOW CYBER CRIME BILL WILL PROTECT WOMEN ?

A progressive social legislation like Cyber-Crime Bill will make our society enlightened and liable to enforce laws to make internet safer for women

By Asma Balouch

After the launch of 3G/4G services in 2014, internet penetration in Pakistan has increased. Broadband users in Pakistan have amplified to a large extent, which include women as well. Women are now more aware and educated. They have started making their way in many fields and have also become major users of the internet.

Being safe is less about using specific security tools and more about altering behavior

As we all know that the Pakistani society is male dominated and deplorable situation of women's rights in Pakistan is no secret. Women face many problems not only in real life, but on the internet as well. They have to be extra careful while using the internet. But being safe is less about using specific security tools and more about altering behavior. Women need to be competent to handle the negatives of the internet so they can make the most of the great openings it delivers.

With the advent of technology, cybercrime has become a global phenomenon. Cybercrime and the cyber bullying are increasing day-by-day and women are often the main target. According to the FIA, there were 3,027 cases of cybercrime in the 2014-2015 period, and 45 per cent of these concerned the online harassment of women by men. Online harassment is one of the most common issues faced by the women. The offender uses different strategies to accomplish their entrusted interests. They use tactics of defamation, blackmailing, fake profiles with obscene content, dissemination of sexual material, unauthorized control and access over a computer system, lustful messages, and improper photographs.

In more serious situations, victims become so depressed because of online harassment and blackmailing that they commit suicide

Cybercriminals sometimes even send email's to victims in which there are pictures that have their faces superimposed on another woman. All of this done to blackmail women for money or other favors. Some even make fake videos to harass women. This makes it difficult for women to use the internet. Victims usually do not know how to seek help and where they can report the issue. In more serious situations, victims become so depressed because of online harassment and blackmailing that they commit suicide.

As we all know that the long awaited Cybercrime Bill has finally become a law after facing severe criticisms. It's a good step taken by the Government of Pakistan. Now that the bill is approved there is a ray of hope that this will protect women on the internet. The bill covers different aspects related to cybercrime. It includes a special endowment for the defense of women.

Cybercrime and the cyber bullying are increasing day-by-day and women are often the main target. It is believed that more than 80% of the victims in Pakistan are female and children

The bill article makes it illegal by law to threaten a woman with sexual ferocity or post images of a woman online without her "definite or implicit consent." If cyber activity impends injury to a woman's character, her prevailing state of privacy, or puts her in terror for her protection, the delinquent could face imprisonment for up to a year, a fine of one million rupees, or both. Now acts of cyber terrorism, fraud, hacking, and the distribution of pornographic material over the internet are punishable acts.

Currently FIA monitors cases related to cybercrime and online harassment through its National Response Centre for Cyber Crime (NR3C) department, which is a law implementation agency that is dedicated to fight against cyber-crimes. The Federal Investigation Authority (FIA) was facing problems to combat cybercrime as the related bill wasn't approved. The FIA bureau registered

several cases during the last year and arrested several people involved in cybercrime, most of the suspects got advantage due to absence of complete laws.

The reporting rate of online harassment cases is quite low in Pakistan. The reason is that people are quite afraid of consequences. They think if they involve any Law Enforcement Agency (LEA) in personally offensive matters it will harm their dignity. It should be made clear to them that LEAs such as FIA, etc. are there to safeguard their honor, sanctity along with preserving privacy, as a part of their job to guarantee maximum cyber-safety within the country.

Cybercrime Bill includes a special endowment for the defense of women. The bill article makes it illegal by law to threaten a woman with sexual ferocity or post images of a woman online without her "definite or implicit consent"

Moreover the victims prefer to resolve matters outside of court due to various reasons due to which most of the cases do not enter the judicial system and culprits are allowed to wander free without payback. There was a need of an effective mechanism to deal with this issue. But now with the approved cyber-crime bill, it is hoped that the victims will get justice and the accuser

will be punished. It will empower women to fight against online harassment and will give them confidence to pursue their cases in courts.

As internet is the engine of economic growth in the contemporary world and no country could afford to block it every time

In this post modernized world, women's rights cannot be disregarded. We should create awareness among the public about their rights. There was a dire need for such legislation to resolve the issue permanently. As internet is the engine of economic growth in the contemporary world and no country could afford to block it every time. A progressive social legislation like this will make our society enlightened and liable. We have to enforce these laws through certain planning and actions because "Actions speak louder than words."

The law will assist in better use of social media and other electronic platforms, so that the future generations safely use them. But only laws aren't enough, their proper implementation is equally important, otherwise it's going to be useless. In the past, bills for women protection have been passed and became laws, but due to weak implementation and lack of awareness they are of no use. There is a requisite of more laws, policies and tactics that not only secure women, but also to retain equilibrium in society. So let's hope that this law will be a good sign and will help in curbing cyber-crimes in the country. Hopefully it will guarantee that no one in the society ever think of digital deceit, blackmailing or any other offense.

The Bill will guarantee that no one in the society even think of digital deceit, blackmailing or any other offense



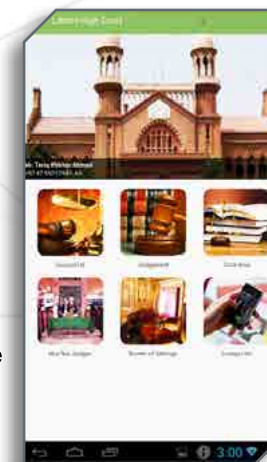
Smart Moves for smarter Nation

Keeping in view the worldwide 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 on e-Governance & m-governance by making use of latest ICT developments. The provision of technology 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.

• Lahore High Court Application by PITB

Lahore High Court (LHC) has become the first institution of its kind in Pakistan to launch an application that allows

the people to access important details about their pending cases while using mobile phones. The LHC App is developed by the Punjab Information Technology Board (PITB) and has been downloaded by around 5,000 people from Google Play Store so far. The App is available on both, Android and iOS. The application is formulated to facilitate lawyers and the people by providing information such as case details, judgment and names of judges among other details.



• Website for the Recovered Missing Children

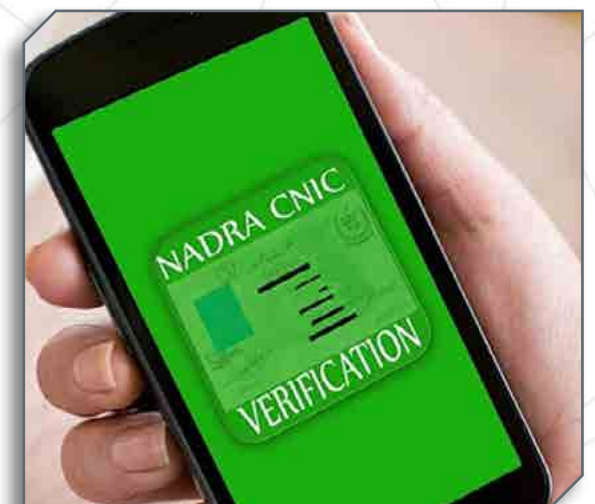
PITB in collaboration with Child Protection and Welfare Bureau (CPWB) and Punjab Police has launched a web portal that documents, pictures and other necessary details of children that had gone missing and have now been found or recovered by Edhi, CPWB, Punjab Police and other concern departments.



Access to the portal has been provided to all relevant departments so that the website can be updated on time while parents and guardians would easily be able to search their children through the website and reach out to the authorities through the 24/7 helpline 1121.

• Mobile App for Verification of Family Tree

In order to simplify the process of re-verification, a Pakistani software company AraeinApps has introduced an application called "NADRA Family Tree Verify Free." This interesting app allows users to verify their CNIC quite easily by just entering the CNIC number and hitting the "Send" button. The app sends CNIC number to 8008, which is the official number introduced by the NADRA for the verification of the CNIC, hence, making the process of verification of family tree easier.



hTC Desire 628:

With Solid Mid-Range Specs

HTC is one of the pioneer smartphone brands and has the honor to manufacture the world's first Android phone. Recently HTC has made a huge come back by launching some incredible smartphones. HTC Desire 628 4G LTE is one among that series. Here is the detailed review of the device for our esteemed readers.

Design

The HTC Desire 628 is entirely made of polycarbonate plastic body with uni-body structure. The phone comes with the contrast color combination that looks great though, glossy finishing makes it bit slippery.

The Desire 628 is 5 inch device that spreads on 146.9 x 70.9 x 8.1 mm with weight of just 142 grams, this makes it handier and compact smartphone and can be operated single handedly. The front is completely covered with glass though it is not the kind of Gorilla Glass. The top and bottom has two sound speakers and they are not boom sound speaker. The dual speakers at front disturbed the screen-to-body ratio, which is just 66.2% that shows the body is bigger than the screen size.

Display

The HTC Desire 628 is equipped with 5-inch HD IPS capacitive display having 720p resolution, the pixel density is 294 ppi. The HD IPS is a standard display for a given price range. It offers decent color saturation, while the display looks sharp and warm too. But one thing that I have personally noticed while testing the display of HTC Desire 628 is a kind of over saturation in color which lost the natural feels in colors.

Memory

The HTC Desire 628 comes with 3GB RAM and 32GB ROM (internal storage). It also has a micro-SD card support up to 256GB, which is the standing point for HTC Desire 628.

Camera

The HTC Desire 628 is using 13MP camera sensor and 5MP shooter on the back and front respectively. The aperture configuration for back camera is f/2.2, standard for given price bracket. The camera picks colors in a good way, the pictures are sharp enough in a good light situation, however; in low light photography needs



some improvement to handle noise in the picture. HTC Desire 628 is quite responsive to autofocus the objects. However, the shallow depth infield is of average quality.

The rear camera can make 1080p video so as front shooter. The front camera has 5MP lens, the camera is good enough and serviceable, though, we can't expect too much from the given price range.

Processor

The HTC desire 628 is equipped with the same processor used in QMobile Noir Z12 and Infinix Hot S. It has octa core Media tek MT6753 processor clocked at 1.3 GHZ moreover backed with 3GB of RAM.

Battery

The HTC Desire 628 comes with a 2200 mAh non-removable battery. There are a couple of power saving modes that are available but still it's difficult to get through the day with high-usage.

Interface

The HTC desire 628 is featured with Android version 5.1 (Lollipop) with the HTC sense 7 UI on top. HTC has sense 7 UI, which has a better and clear focus on design and it keeps things smooth. The desire 628 is featured with Blinkfeed that has powerful multi-tasking menu and quick toggles. Many bloatware applications are installed such as, Digital Life, Wild Tangle Games, Keeper, Key VPN, Lookout, Uber, Yellow Pages, and a whole collection of redundant HTC apps are pre-installed, including three separate email clients.

OS: Android v5.1 (Lollipop),

Display: 5 inches

Battery: Non-removable Li-Ion 2200 mAh

Weight: 142 g

Camera: 13 MP, autofocus, LED flash

Memory: 32 GB, 3 GB RAM

Processor: Octa-core 1.3 GHz

Price: 23,999 PKR



Benchmarking

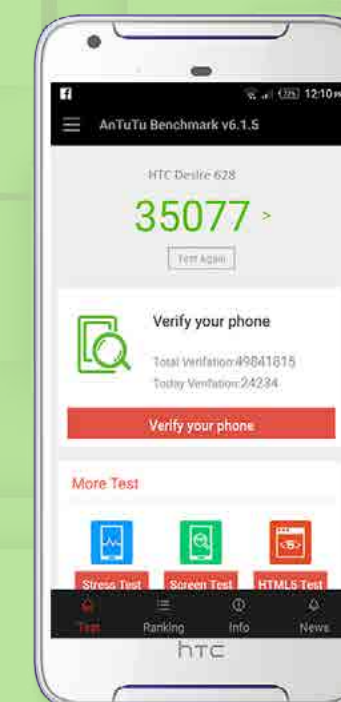
Vellamo

Vellamo benchmarking consists of three kinds of tests including Single core, Multicore and browser testing. HTC Desire 628 attained 918 points in single score test, 1274 points in multi core and 2680 in browser test.



Antutu

Antutu Benchmarking is used to check device performance; it includes memory performance, CPU and many more. HTC Desire 628 has gained score of 35077, impressive results.



Good

- Big, sharp screen
- Customizable interface
- Amazing design
- Affordable Price

Bad

- Battery drains out quickly

Final Verdict

If you want a fast and quick phone in range of 20K to 24K, keep HTC Desire 628 4G LTE in your wish list for high configuration. I would recommend the device for those who need more performance or for real gamers because it has great specs with 3GB and octa-core processor along with Mali-T720.



Zong 4G: A New Dream

Maham Dard, Director, Corporate Affairs - ZONG 4G

Zong, being the first international step of China Mobile, is presently the third largest telecom operator in Pakistan having 25 million cellular subscribers. Zong aims to empower the lives of Pakistanis with its innovative technology that keeps pace with latest evolving culture.

Over the years, we have invested more than USD 2 Billion in our nationwide setup in order to expand and improve the overall coverage and quality of user experience

A company cannot achieve its goals and secure its vision without a good leadership and when it comes to leadership skills, Zong has no doubt a well-competent hierarchy of officials. Dealing corporate affairs of any organization is in fact a huge responsibility as it manages and establishes the entire reputation of

a company in the market. Similarly, Maham Naeem Dard, the Director Corporate Affairs at China Mobiles, is devotedly fulfilling the corporate duties in Zong.

In this exclusive interview with PhoneWorld team (PW), Maham Dard (MD) shared his insight on the telecom strategies and environment of Pakistan mobile sector. Dard also explained the philosophy behind its recent re-branding strategy and how it effected its overall business. Here is what he had to say.

PW: Tell us a little about yourself?

MD: I attended high school from Aitchison college Lahore with my O' levels in 1995 and FSc in 1997, eventually moving to the US to complete my BS Electrical Engineering from the State University of New York in 2003. My early career was with C&S engineering in designing of hard core electrical circuits for big infrastructure projects. In 2005, I joined the United Nations (Syska Hennessey group) in New York City working on their \$1B capital infrastructure development program as a consultant, gaining more



By Saima Ibrahim

technical experience, being a part of a larger team. In 2006, I joined General Electric Company (GE) and worked in multiple divisions of GE including, quality, operations, field services, project management, integration management, warranty reserve and top issues management for 6 product lines of GE O&G. In 2014, I moved back to Pakistan and joined Zong as Director Corporate Affairs.

PW: Zong has emerged as the fastest growing mobile network in Pakistan, to what do you owe this success to?

MD: Excellent network in terms of speed, coverage and reliability, affordable packages and customer centricity has been the key. On the technological front, we leverage heavily from the research and experience of our parent company, China Mobile Communications Corporation, which is the largest Telecom service provider in the world. This has enabled us to provide cutting edge, state-of-the art services to our subscribers.

We leverage heavily from the research and experience of our parent company, China Mobile Communications Corporation

Our focus lies with the customer and on a daily basis, our engineers, field technicians, researchers, commercial and customer care teams are working hard to solve customer problems and develop the best solutions possible at affordable rates. For every business, the most difficult part is to maintain a balance in quality of product, timely service and affordable pricing. We have managed to balance all three of these aspects pretty well. Over the years, we have invested more than USD 2 Billion in our nationwide setup in order to expand and improve the overall coverage and quality of user experience which has yielded great results for us.

PW: Zong was the only mobile network in Pakistan to bid for 4G spectrum in 3G/4G auction 2014, do you think it gave Zong a competitive edge in the market?

MD: Absolutely! We are proud of leading the industry with 4G technology in Pakistan and have already ensured comprehensive coverage in over 100 cities across the country with plans to double our coverage in the coming months. This puts us in a very strong position in the data market. The dynamics of data traffic are very different from the voice and we have been able to capitalize on this base on our investment in the 4G spectrum. In the future, we will continue to upgrade our 2G to 3G and 3G to 4G sites, adding to our

wide network coverage throughout the country. We will leave no stone unturned to keep the # 1 position as the best network provider in the nation with our fastest speed, wide and deep coverage and the most affordable packages available for our customers. 4G also gives us the leverage to cater to our corporate customers with advanced solutions for specific industries to innovate, and we will continue to invest in the 4G technology in the future.

The new era of telecommunication will have the data aspect advantage which would be very clear and definitely a market differentiator for all operators

PW: How do you view the challenges for the telecommunications industry?

MD: Telecom sector is probably the most challenging sector in terms of business in Pakistan. Taxes are high, the regulations are tough and there are areas where market penetration and daily operations are difficult to manage due to the law and order situation. Effectively placing and selling our products to the customers and adapting to the fast changing market conditions is very effort intensive. I must also add that there are very capable competitors in the market, which adds to its volatility.

PW: Despite huge challenges, Pakistan is regarded as a country where telecom industry is greatly thriving. What are your perceptions on that?

MD: The market is "evolving" very quickly, sure, and is definitely on its way to reach new heights of innovation, the 3G/4G launch is definitely a key factor to support this evolution.

Zong has the leading edge in 4G with the highest number of sites, covering more than 100 cities

The new era of telecommunication will have the data aspect advantage which would be very clear and definitely a market differentiator for all operators. Zong has the leading edge in 4G with the highest number of sites, covering more than 100 cities and subsequently has the highest number of 4G subscribers. Through this, we are very happy to provide the best capability to our customers to connect with the rest of the world and with each other.

The combination of the best quality network, affordable products and the widest coverage in the nation with a strong brand keeps Zong at the top

Many of Pakistan's industries are now using the 4G technology to innovate new solutions for their customers, for example, security services, media industry, hospitals and the education sector, specifically are taking good advantage of this technology to provide faster and better solutions. We have a unique advantage to sell 4G because our speed is the best, it's the fastest and our capacity is unparalleled, so our customers can enjoy more benefit of the best quality network we have to offer.

MD: Our products are based on a very detailed process considering the exact requirements of our customers. We have our own experience in 4G technology from China Mobile international, we have our own mechanisms and our own models to develop the best products for all types of customers to cater to. Because of this differentiation, our experience and research, we are able to develop the best solutions for pre-paid and post-paid customers, which are very well received by the consumers.

The combination of the best quality network, affordable products and the widest coverage in the nation with a strong brand keeps us at the top as well. Our dedicated teams are continually working hard to maintain this position.

PW: It is seen that Zong is doing a lot to facilitate pre-paid subscribers, what steps are being taken

Particularly for this reason, our Mobile Broad Band (MBB) devices have been immensely popular in the Corporate Market plus we have specific 4G enabled solutions for many industries in Pakistan which are very successful.

Zong envisions to enable a fully connected environment for Pakistanis through internet inclusivity, whilst providing the most reliable and affordable products in the market

We are working closely to develop specific products for them. Education, law and order, health and media are some particular examples where we have strong partnerships with our corporate sector to capitalize on our 4G based products and solutions.

the coming months and continuously improve our network quality, even though we have been already rated the best amongst the competition. At the same time, we also have a newer and stronger brand which has been very well received. Our new brand reflects our new products with faster speed, more coverage, new and more affordable packages, enhanced coverage in more cities with more customized solutions for our corporate customers. We will continue to lead the market in 4G solutions, coverage and connectivity.

PW: What is Zong's vision for the future of Pakistani Telecommunications Market?

MD: Our objective with regard to the local market is to leverage our technological edge in 4G LTE to revolutionize the lifestyle of Pakistani people. This includes expanding both our Network Infrastructure and data based product portfolio.



PW: Do you think that increased competition between mobile companies in the post 3G/4G era has placed a positive effect on telecom sector?

MD: We believe in fair competition, in fact, we want the industry to grow together to be able to provide the ecosystem for all operators and sustain the 4G evolution in the country. 4G handset penetration is directly related to this phenomena. We want the 4G device penetration to increase and that would be only possible if more and more operators have 4G technology. The more handsets are available, the more connected people will be, and that's what supports a healthy platform for innovation, growth, evolution and transformation. Having said this, every operator has its own business model, its own strategy, which makes it different from its competition. So healthy competition and a strong market will in fact help all operators and we fully support a combined progression.

PW: Zong's 3G and 4G internet services are quite detailed and cater the needs of all types of customers. Can we consider this as the key to Zong's success in data market?

to facilitate post-paid customers that are mainly from corporate and business sectors?

MD: Corporate and Postpaid customers are a priority for us and we have dedicated teams to manage the end-to-end value chain of this particular business segment.

The new brand is our sentiment of providing better 4G services to a wider customer base with the best packages in the industry at the best commercial rates

We know from our experience that Postpaid and Corporate segment is more data savvy compared to the pre-paid segment and that is where we have a competitive advantage to leverage from. Our cutting edge 4G technology not only provides fast internet speed but it also enables a wide range of Enterprise Support Solutions based on Internet of Things (IoT) supporting a fully connected corporate environment.

PW: Tell us about Zong's recent re-branding initiative. What is the theme behind it?

MD: Our new brand identity is aimed to bring our brand promise of 'A New Dream' to life. Our new TVCs are a reflection of our commitment to provide the best quality data user experience and signifies our commitment to transform the digital lives of Pakistan's through our high speed data services. It also capitalizes on the growing attitudinal and technological confidence of consumers on Zong's super-fast 4G services. The new brand is our sentiment of providing better 4G services to a wider customer base with the best packages in the industry at the best commercial rates to be able to lead the market and maintain our leading position of our products, our network and our coverage, not to mention our fastest speed.

PW: What are Zong's future plans regarding its services?

MD: We believe in connectivity, speed, quality and affordability. We want to expand our 4G coverage to areas where we see an opportunity, we are already covering more than 100 cities of Pakistan through our 4G service and plan to double this coverage in

Currently, more than 5000 sites power over 100 cities of Pakistan with 4G services and this number is increasing day by day. We have the highest number of 4G sites in the highest number of cities and we intend to continue this trend, providing the best quality network to our subscribers. Zong envisions to enable a fully connected environment for Pakistanis through internet inclusivity, whilst providing the most reliable and affordable products in the market.

Our team is working extremely hard to bring innovative solutions for data and voice to make sure we lead the telecommunication market in Pakistan

In 2016-2017, we will be adding another 100-200 cities of our 4G connectivity. Our teams are working extremely hard to innovate new solutions, new products for data as well as voice to make sure we lead the telecommunication market in Pakistan.



By Rizwana Khan

THE COMPETITIVE MOBILE DISTRIBUTION INDUSTRY OF PAKISTAN

Tech Evolution in Pakistan

Pakistan is going through a historic phase of technological evolution where major milestones are achieved one after another. With 133 million and 31 million 3G/4G subscribers, numerous m-services have reached the country and smartphone apps are the way forward for almost any budding online business. Today, Pakistan is on its way to become a truly digital nation.

With such progressions in IT and Telecom sector another important business that has taken up a significant position is mobile distribution business. The demand of mobile phones has increased considerably over the years and to meet this demand, mobile distributors play an equally important role as mobile vendors.

Pakistan Smartphone Market Penetration

Mobile phones have become a necessary piece of gadget in our lives as they are the speediest source of correspondence in this age. This

inordinate utilization has empowered smartphone vendors to create overwhelming earnings from this industry. The ascent in mobile phone penetration on month to month bases is another indicator of how thoroughly this industry is developing.

Gone are the days when there was only a single versatile brand in Pakistan as now numerous global and national brands have sprung in the Pakistani market. Amazingly, Pakistan is the only country where a local brand "QMobile" is driving the business sector for recent couple of years.

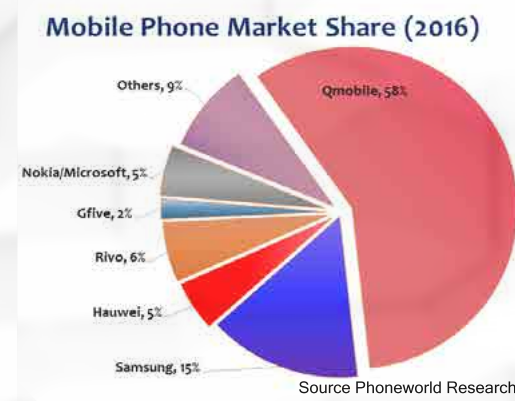
Over the last few years many new brands have entered the market and at the same time, some already existing brands failed to hold their grounds. Brands like SONY, Club Mobile, MMobile, VIGO Tel, GRIGHT and OPHONE have almost closed their distribution in Pakistan. GFive, which has recently started local assembling of mobiles, is still focused in Punjab alone. Two brands that powerfully hopped into the Pakistani cell phone market were "OPPO" and "iNEW" but didn't

succeed in keeping their places, reason being, they didn't engage wholesalers for distribution. Two other international brands, "Samsung" and "Huawei" are at intense competition with each other. "Huawei" is getting more section of the overall industry, mainly in 4G cell phones which is 1/4th of market share.

With extraordinary progressions in IT and Telecom sector, another important business that has taken up a significant position is mobile distribution business

Alcatel, Infinix, Microsoft and Lenovo are among the comparatively newer smartphone brands that have entered the Pakistani market. While mobile operators like Telenor and Mobilink have also captured a large section of device market.

According to Phoneworld's extensive research, QMobile is leading the overall mobile market with around 58% market share making it the largest mobile brand of Pakistan. While Samsung is on second spot with 15% market share.



Mobile Distribution Business in Pakistan

With so many brands entering the Pakistani market, mobile distribution business has also become tougher and many opportunities have also opened up. Today Pakistan's mobile telecommunication industry is among the fastest growing markets in the world. Over the last few years, arrival of 3G/4G, new local and international vendors, better coverage and availability of low cost devices have expanded

the mobile market, creating better grounds for mobile distributors.

Following are the major mobile distributors working in Pakistani market.

- 📍 Digicom
- 📍 M&P
- 📍 Airlink Communication
- 📍 Greentech
- 📍 Advance telecom
- 📍 i2
- 📍 Tech Sirat
- 📍 United Mobile

Initially there were only three mobile distributors, United Mobile, Advance Telecom and Digicom but later on, after the expansion of mobile market many new players entered the market.

Pakistan is the only country where a local brand "QMobile" is driving the business sector for recent couple of years





Among all mobile distributors United Mobile and Advance Telecom also launched their own mobile brands as well. United Mobile launched Voice brand whereas, Advance Telecom launched Rivo. Voice was the first mobile brand that launched Octa-core smartphones in Pakistan but due to weak marketing strategy and limited number of devices Voice Mobile couldn't keep up with the fast growing device market and eventually closed down. Rivo on the other hand, used some aggressive marketing strategy and managed to secure a good position in the market but later on its sales slowed down and now it is limited to feature phone market.

Mobile Distribution: The Formulae for Success

Over the last decade the mobile industry has witnessed a massive success coupled with the availability of low cost devices, reduction in tariffs, better network coverage and an affordable service helped the industry undergo a major process of transformation.

United Mobile and Advance Telecom also launched their own mobile brands i-e Voice and Rivo Mobile

In order to create a distinct market position, mobile distributors have to offer top class products and services to create a strong image among customers. Therefore, to run a successful business, there are certain ingredients that hold vital importance, especially in mobile distribution business.





-  Warranty
-  Fast stock availability
-  Incentives to retailers
-  Customer service

The above mentioned are some of the key features to run any successful distribution business. For some customers Warranty means everything while others evaluate distributor's customer service as the key factor. Therefore, we have gathered some market data to analyze the mobile distributors' performance and market image in each of the categories.

Initially there were only three mobile distributors i-e United Mobile, Advance Telecom and Digicom but later on, many new players entered the market

We have rated each mobile distributor based on customers' and retailers' feedback. Here are the results.





Warranty: Warranty is considered a very important factor by customers when they are getting a new mobile phone. Normally all distributors offer one year warranty in case of repair, or replacement.

Distributor	Rating (out of 5)
	4.8
Digicom	4.7
	4.5
	4.1
	4.0

According to our market research Airlink Communication offers best warranty service. Our





top listed mobile distributors have their own service centers in all the major cities of Pakistan that ensure timely and easy solution to customers' complaints and problems.

Fast Stock Availability: Fast stock availability means that a product is never out of stock in the shop. Digicom can be considered the best distributor in this regard since QMobile stock is never short in the market despite being the most favorite brand of the country.

Distributor	Rating (out of 5)
Digicom	4.9
	4.7
	4.6
	4.3
	4.1

The following distributors not only have regional warehouses in all main cities but also have strong retailers and wholesaler network that ensure fast stock availability.





Customer Service: Customer service quality is monumental for the success of any business. How customers are handled and how fast their queries are answered build a strong perception in the minds of customers. Digicom is the fortunate one to have the most satisfied customers.

Distributor	Rating (out of 5)
Digicom	4.8
	4.7
	4.6
	4.4
	4.3

Incentives to Retailers: Mobile phone users are not the only customers of mobile distributors, retailers are also the customers of mobile distributors. Therefore, satisfaction and motivation of retailers is equally important. Different distributors offer different incentives to their retailers.

There are special schemes started by distributors to directly connect them to retailers. They not only offer separate cash incentives for the sale of each handset but also arrange foreign trips for retailers who show outstanding performance. In this regards

Airlink Communication and M & P offer the best incentives and have most satisfied retailer base.

Distributor	Rating (out of 5)
	4.8
	4.8
Digicom	4.6
	4.4
	4.3

Challenges and Opportunities

Escalated smartphone penetration and better network services have created many opportunities for telecom and IT sector of Pakistan. Mobile distribution business has also boomed over the years. OEMs are dependent on mobile distributors to not only make their product available to bigger market but also for promotion and customer service. Customers have become more aware now and they now know the significance of legally distributed devices with official warranty. After the PTA's initiatives to curb grey trafficking by type approval process, the ground has even smoothened out for mobile distributors as sales of illegal phones put the biggest dent on distributors' revenues in the past.

3G/4G has also put a positive impact on distribution business since the uptake of mobile phone has increased profoundly over the last couple of years hence, expanding the market for mobile distributors, not only physically but also demographically. Many new brands have also entered the Pakistani market who partnered with mobile distributors to launch their products while the existing brands also partnered with various different distributors to increase their reach and product availability in the market.

With PTA's Type Approval initiative curb grey trafficking, the ground has even smoothened out for mobile distributors as sales of illegal phones put the biggest dent on distributors' revenues in the past

Mobile vendors and operators are also launching devices in collaboration where operators offer special data packages on buying specific devices. The recent tech developments not only have created

opportunities for mobile distribution business but they have also created some challenges as well. Due to increased 3G/4G penetration and social media explosion, many new mobile brands took up a different strategy to launch their smartphones, without involving third parties in the process. Infinix by Daraz.pk is an example of that which was launched in Pakistan through the online store that offered its own warranty. Now infinix has also collaborated with many other online stores including Yayvo.com. Xiaomi, world's second largest smart phone brand was also launched in Pakistan in collaboration with an online store Cheezmall. Another challenge that the Telecom sector in general is facing is the high taxation rate. Every year, the annual budget announces increased taxation rate on mobile phones which critically hampers the sales of new phones since these taxations greatly impact the prices of mobile phones. There are no special incentives given to mobile distributors unlike IT exports, startups or other related businesses.

OEMs are dependent on mobile distributors to not only make their product available to bigger market but also for promotion and customer service

Businesses have gone through a lot of change over the last few years. In today's competitive world, if one business fails to cater to the best interest of the clients, some other provider will take the opportunity. Initially there were only few mobile distributors in Pakistan, but now with increased mobile phone penetration, accelerated with 3G/4G and smartphone intervention, many players entered the distribution market. From customers' perspective, credible mobile distributor is as important as the mobile brand itself therefore, even if an outstanding phone with great specs is launched in the market but has no reliable distributor warranty, the chances of its success would be minimal. Therefore, an effective distribution channel can provide a source of strategic advantage for mobile vendors. The technology evolution is opening up many new doors to development that not only influence the businesses but also the overall economy of the country. That is why increased competition in all sectors of IT and telecom is indeed a good sign for everyone.

Infinix Hot 4

A Superior Battery Phone

Infinix is ready to provide you an innovative and diverse experience with its Hot series smart phones. This time the company has introduced another model "Infinix Hot 4". Let's have a detailed discussion on its performance and specifications.

Display

Infinix Hot 4 has 5.5 inch screen with HD IPS display and it supports the resolution of 1280 x 720 pixels. The device has a pixel density of 320 dpi moreover, it is featured with latest android version 6.0 (Marshmallow) and it is using XOS chameleon v2.0 interface.

Infinix has used XOS interface in the whole Hot series. The device has a very decent display, whereas cool colors are used and icons are in beautiful thin shape design. The Infinix hot 4 has good touch panel and it has scored 5 points in the multi-touch test.

Design:

The Infinix Hot 4 has 5.5 inch screen, whereas body dimensions measure of 155 x 75 x 8.1 mm. The weight of the device is 175 grams because it has a huge non removable battery of 4000 mAh.

The function keys are resided at the bottom side. The device doesn't have any notification LED light. A bezel with the same color of body is covered around the whole frame of device. All the edges are adorned with plastic material.

The back body has some horizontal designed pattern on its cover which gives a very attractive effect. The Fingerprint works as a reader/scanner as well as it can be used to take pictures. It is accurate and quick reader.

Memory

Infinix Hot 4 has 16GB ROM and 2GB RAM. The internal memory can be expanded up to 64GB with the help of memory card. Your normal usage can be easily managed without a memory card.

The infinix Hot 4 has 2GB RAM which is good enough for regular use. Few applications can work efficiently in multi-tasking whereas, multitasking with heavy apps affect the the performance of the phone.



Camera

The camera of Infinix Hot 4 is featured with 8MP rear camera and 5MP front camera. Both are accessible with flash light which will gain the attention of camera lovers. The infinix Hot 4 has an 8MP rear camera with accessible flash light and capable of making video up to 1080p while the front camera can only make 480p quality videos. The back camera has good results furthermore, the brightness and color schemes are very well controlled.

We have tested both cameras of infinix Hot 4 and the results are impressive and you can feel very good energy in pictures due to its powerful colors.

Processor

Infinix Hot 4 has 1.3 GHZ quad-core processor, which is based on the architecture of ARM Cortex-A7. Chipset of Mt6580 is used which can support up to 1080 p but infinix Hot 4 only supports 720 pixels.

Battery

Infinix hot 4 comes with a mega battery of 4000 mAh Li-ion. The device has a quad-core processor, so battery will perform adequately in videos section.

Network & Connectivity

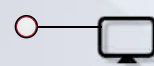
Infinix Hot 4 is a 3G enabled smartphone. Don't get confused with the "4" letter in device name, it's just a series name not any kind of interaction with 4G. It is a dual SIM device that supports all the bands of 3G over Pakistan.

The device also features other connectivity options like Wi-Fi, Bluetooth and FM Radio with Mt6580 processor, Wi-Fi works at 802.11 b/g/n and 4.0 Bluetooth.

OS: Android v6.0 (Marshmallow)



Display: 5.5 inches



Battery: Non-removable Li-ion 4000 mAh



Weight: 175 g



Camera: 8 MP, auto focus, flash light



Memory: 16 GB, 2GB



Processor: Quad-core 1.3 GHz



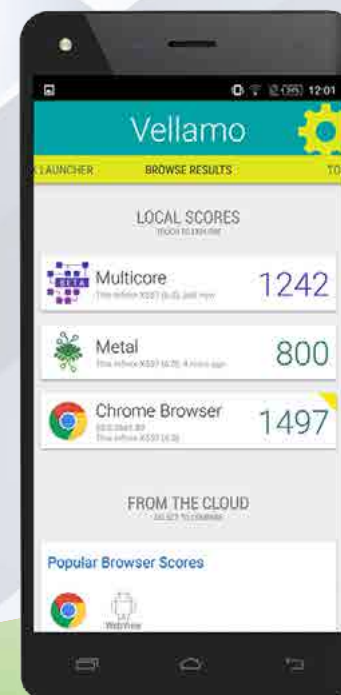
Price: 12,999 PKR



Benchmarking

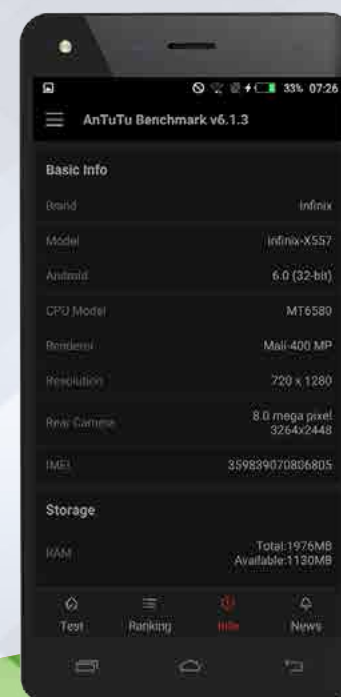
Vellamo

Vellamo benchmarking is used to check device performance. It is a scheme of tests that runs and check your device efficiency in the field of metal, multi core and chrome browser. We have tested infinix Hot 4 and it has scored 1242 points in multi core test, 800 points in metal test and 1497 points in the Chrome browser test.



Antutu

Antutu benchmarking is one of the finest application to check the device performance in all aspects. We have tested infinix Hot 4 and it has scored 24804 points. The total score has ranked it just below iPhone 5S, but overall it has a very satisfactory score.



Good

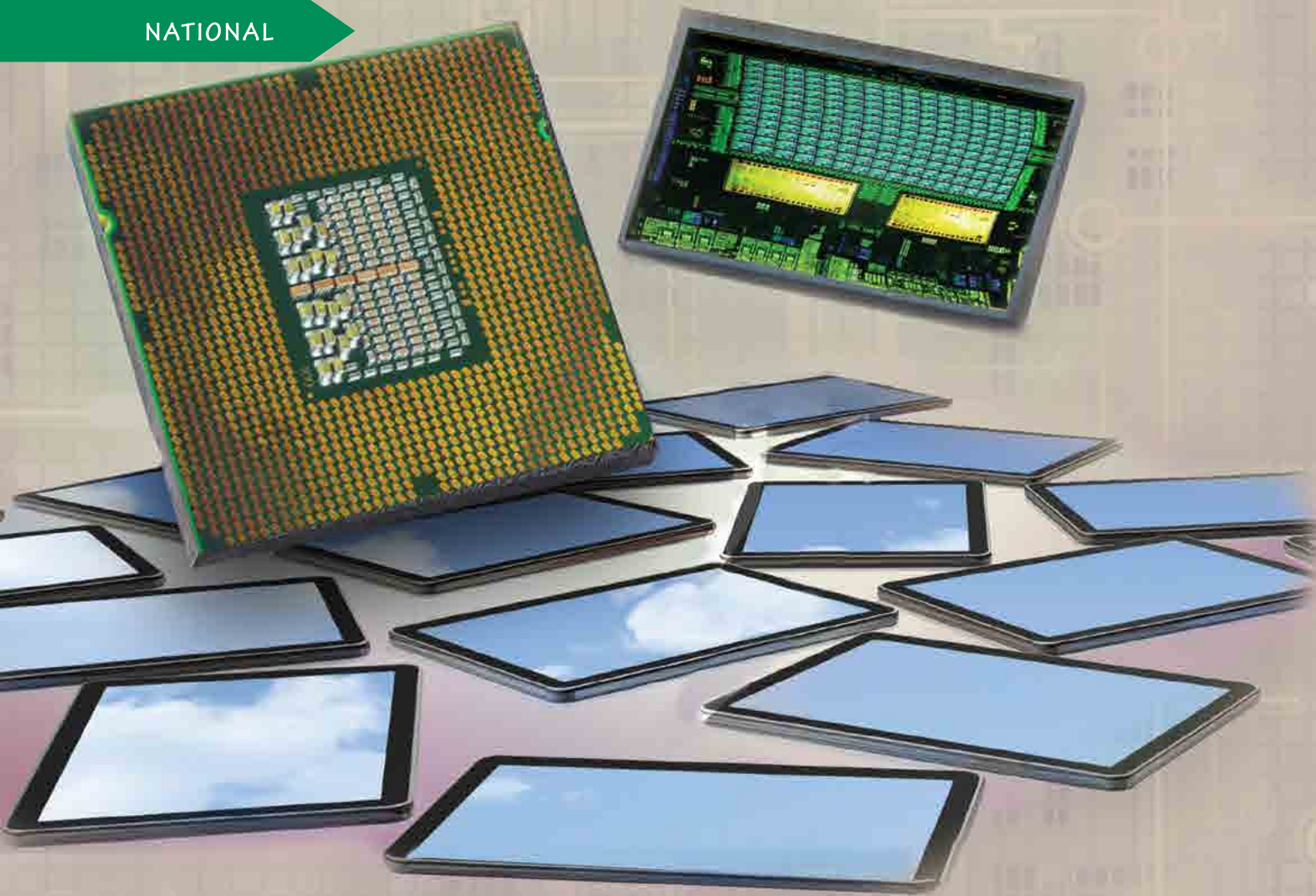
- Android 6.0 (Marshmallow)
- Efficient battery timing
- XOS interface
- Stylish Design

Bad

- No Secondary mic
- No LED notification light

Final Verdict

Infinix Hot 4 is a 3G enabled device with 8MP rear camera and 5MP front camera. It lacks 4G connectivity, but it has fulfilled the gap by providing the giant battery of 4000 mAh. The device is for those users who like to have an efficient battery timing device with stylish design in affordable price range.



Fight for Smartphone Chipset Domination Who's the Winner???

One are the days when a mobile phone was usually judged by its design as in old days no one cared much about the speed or interface of the mobile. The present race indicates that the mobile industry is actually in competition with the PC market. Obviously, the most important part of both a mobile phone and a PC is its "processor" while the other features like camera, screen resolution, apps and operating system can only improve if the CPU gets more powerful. The latest multi-tasking feature demands more from chipset manufacturers to come up with unchanged and fast performance support via their chipsets.

Keeping in view the significance of smartphone processor, one must understand that this area is growing with latest innovations in technology from 2G to 3G, 4G and the upcoming 5G.

SoC or chipset is an integrated circuit that essentially combines together all basic components in one chip

A chipset on a smartphone is usually termed as a "System on Chip" (SoC). A SoC or chipset is an

By Saima Ibrahim

integrated circuit that essentially combines together all basic components in one chip. This means that your processor (or CPU), graphics processing unit (GPU), memory controller and other controllers of a smartphone are built into this single chipset. Also there are two types of processors: 32-bit processors and 64-bit processors. In general, 64-bit processors are much more efficient and perform faster than 32-bit because they have more capacity to handle larger data units in a single process.

Smartphones have gone from single-core to dual-core, quad-core and now octa-core and the clock speed is rapidly further increasing. With companies throwing around terms like Snapdragon, Tegra 3, Mali-400, Cortex-A9, etc

This is why smartphones have gone from single-core to dual-core, quad-core and now octa-core and the clock speed is rapidly further increasing. With companies throwing around terms like Snapdragon, Tegra 3, Mali-400, Cortex-A9, etc., it is a very difficult task to keep up with the different chipsets in the market.

Main Players in Chipset Competition

Just like Intel manufactures motherboards and processors for PCs; presently Qualcomm (Snapdragon), MediaTek (Helio), Samsung (Exynos), Huawei (HiSilicon Kirin) and Intel (Atom) make chipsets for smartphones. All these mentioned names manufacture integrated chips that have their own processing units (CPU and GPU). Here is a general comparison of these mentioned chipsets:

QUALCOMM Snapdragon

- Presently most power efficient chipset in the market with least battery consumption ability.
- Lesser heating issue as compared to chipsets from other companies like Intel, MediaTek or Exynos.
- Adreno, a GPU manufactured by Qualcomm itself, is integrated within the chipset.
- Benchmarks show that Snapdragon processors are one of the best performers among all.

MediaTek Chipsets

- Less power efficient so higher battery consumption.
- Mali, a third party GPU, is integrated within the chipset.

- Generally, it has more cores for the processor as they have quad, hexa, octa, and deca core processors available.

- Cheaper than Qualcomm chipsets.

Exynos Chipsets

- Exynos chipsets are market-proven multiband and multimode modem solution for LTE technology.

- Heating and hanging issue in mid and low range smartphones.

- Integrated 4K video or LTE support not available on some models like Qualcomm processors.

HiSilicon Kirin by Huawei

- Normally has better CPU & GPU clock speeds than competitors.

- Uses big.LITTLE technology similar to Exynos for energy efficient utilization of cores.

The functionality of smartphone processor mainly depends on number of cores, Graphic Processing Unit (GPU) and fabrication technology. A processor with many cores will perform faster and drain less battery by utilizing lesser cores for normal tasks. As far as GPUs are concerned, presently there are three major designers of mobile GPUs: ARM, Qualcomm and Imagination.

When it comes to efficiency and consistency, Snapdragon by Qualcomm is considered the top chipset because of good battery life and effective heating solutions

The fabrication of "silicon chips" is not that easy. In fact, it is a quite complex process that actually involves a lot of expensive machinery. To make a chip from silicon wafer to chips ready to sell, it takes several weeks. The present examples of good fabrication technology chips include Helio X10, the Kirin 935 and the Snapdragon 801. They all are built using a 28nm (nanometer) process. The Snapdragon 810 uses a 20nm process, while the Exynos 7420 uses a 14nm process.

Generally, the processing capabilities of all mentioned CPU brands are good and high but the

actual competition originates in terms of efficiency and consistency. When it comes to efficiency and consistency, Snapdragon by Qualcomm is considered the top chipset because of good battery life and effective heating solutions.

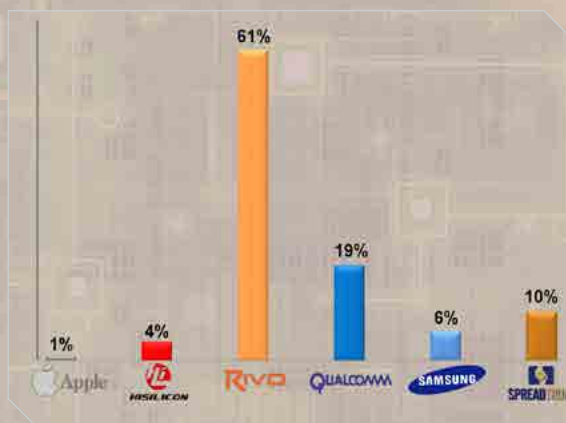
MediaTek is leading the Pakistan market with 91% market share due to its low cost chip-sets

However, the real difference between Snapdragon and MediaTek chipsets comes when we talk about the GPU performance. Snapdragon takes clear edge on the MediaTek due to its excellent graphics (GPU). The reason of this superiority is that Qualcomm manufactures its own GPUs which of course works better than the third-party GPU.

Pakistan's Chipset Market Updates

The smartphone market is becoming ever-more competitive, making it more and more difficult to choose which handset one should throw his money at and that could justify the expense as well. Similarly, the growing smartphone market in Pakistan has its own diverse characteristics mainly depending on the price of smartphone. The mid-range smartphones are more in demand in Pakistan as compared to high-end phones like iPhone by Apple hence we can say that Qualcomm, MediaTek, Exynos and Spreadtrum's market share is higher than other chipsets brands due to their series of mid-range smartphones.

The following chart elaborates each chipset brand percentage:



Source: Phonedworld Research

The clear winner here, as supported by the graph, is MediaTek. The reason why we see so much dominance from a relatively mediocre brand is the amount of smartphone manufacturers in the Pakistani market that choose MediaTek for their chipsets necessities. The primary reason for that is the cost. The average Pakistani buyer, when considering the chipset in his decision-making process, is easily engrossed by terms like "Octa-core" etc. Not realizing that the quality of a chipset means more than mere numbers. With low-priced, average performance chipsets, MediaTek gets the attention of low-end smartphone manufacturers merely on low price points.

As compared to last few years, number of chipset brands have increased in Pakistan due to the entry of multiple smartphone companies. Now the competition is tough with leading player MediaTek having 61% market share and is followed by 19% share of Qualcomm.

Other chipset brands include Spreadtrum, Samsung and HiSilicon Kirin having only 10%, 6% and 4% share respectively. Whereas, Apple being the expensive chipset maker has only 1% share in Pakistan. This indicates that in Pakistan, MediaTek, Qualcomm and Spreadtrum dominate the mobile chipset market.

Being the brain of the smartphone, chipset plays a fundamental role in performance of the smartphone, therefore, the processor model is the most important aspect that one needs to consider before choosing a smartphone

Being the brain of the smartphone, chipset plays a fundamental role in performance of smartphone. Therefore, the processor model is the most important aspect that one needs to consider before choosing a smartphone. The increasing number of vendors in this hot arena clearly tells the level of competition going on.

By Rizwana Khan

Jeff Bezos : The King of e-Commerce

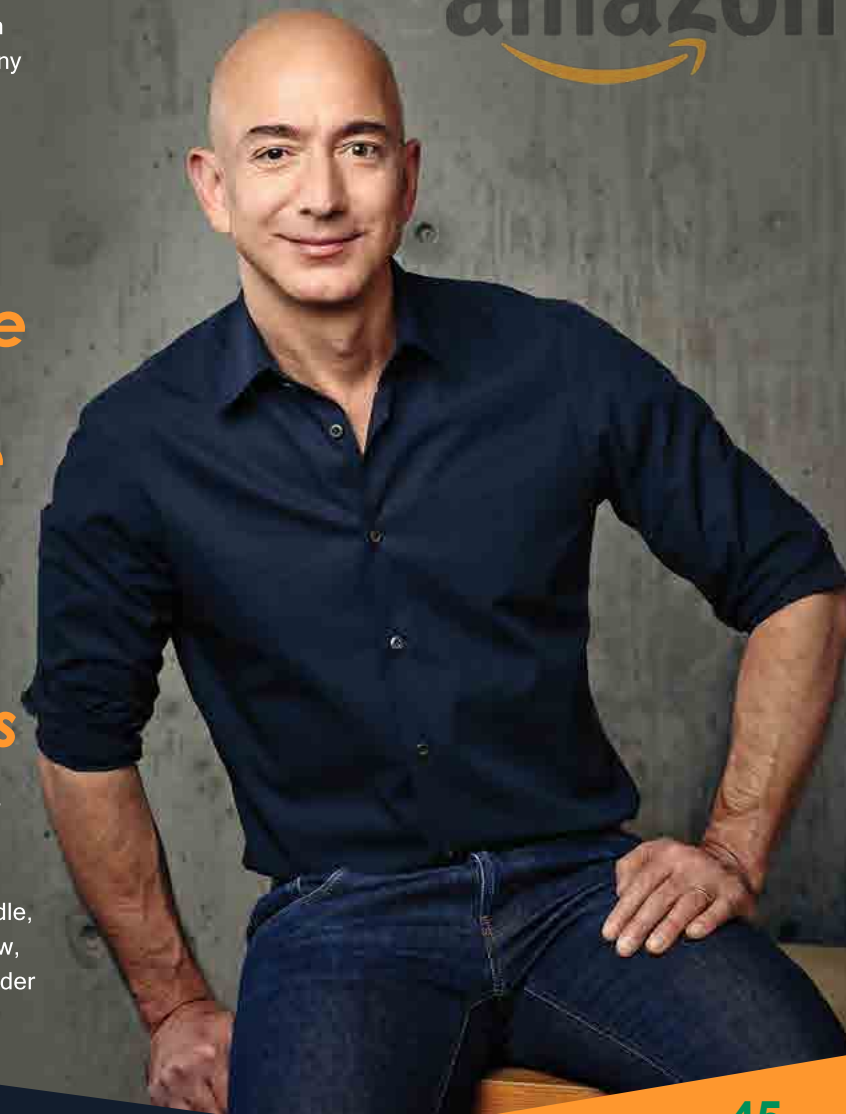
Entrepreneur and e-commerce pioneer Jeff Bezos was born on January 12, 1964, in Albuquerque, New Mexico. Bezos had an early love of computers and studied computer science and electrical engineering at Princeton University. After graduation he worked on Wall Street, and in 1990 he became the youngest senior vice president at the investment firm D.E. Shaw. Four years later, he quit his lucrative job to open Amazon.com, a virtual bookstore that became one of the internet's biggest success stories. He helped to revolutionize the way people buy books and proved that the World Wide Web was a valid arena for sales when he started up a "virtual" bookstore online in 1994. The enterprise Amazon.com was named after the world's largest river. From an affair launched in a garage, the company ballooned to become one of the largest retailers in the world as of 2015.

the radar to most consumers. Did you know that Amazon Web Services provides cloud computing services to big businesses, the US government, and even NASA? Becoming a viable player in such a variety of different arenas never came from Bezos sitting back, satisfied with the goods already reaped. To the contrary, he believes that there are no products and services Amazon couldn't sell. Soon, the company will have its own delivery fleet, become a publisher and media company, build smartphones, and perhaps even offer 3D printing services. For Bezos, the future is rife with possibility, opportunity, and inventiveness-and he's hungry for all that it brings.

amazon

Don't be afraid to make decisions that might be unpopular in the moment but will reap future rewards

Amazon began with books, but no sooner had they gained a foothold in that market than they conquered music, movies, electronics, and toys. Later came the Kindle, and with it, they won their niche. Even now, there are Amazon services completely under



 By Shaheer Riaz

SYMPHONY Xplorer H250

Symphony has recently launched another member of H-series, Symphony Xplorer H250 with Android lollipop 5.1. It carries 2GB RAM and 16GB ROM with external support up-to 32GB. The smart phone has rear camera with 13MP and the front facing camera with 5.0MP.

Symphony has used mobile anti-theft application in its smart phone which will help you to find your lost or stolen smart phone. Mobile anti-theft application is pre-installed in Symphony Xplorer H250, when phone is stolen or lost and SIM card is changed the app will send you current location through SMS or email to the alternative mobile number and provided email.

Display & Design

Symphony Xplorer H250 carries shiny and bright 5" HD IPS display at the front with 320 dpi. The display of phone has 720 x 1280 resolution. The screen has no visibility issue in sunlight, you can easily use the smart phone without facing the reflection problem. The virtual buttons are placed outside of the touch screen.

The design of Symphony Xplorer H250 is slim and sparkly, the smart phone we used for review has beautiful sapphire color on the four sides. The edges of the Symphony Xplorer H250 are not curved like other smartphones.

The back side of the smart phone is provided with fragile glass yet it enhances the look and design of the smartphone.

Processor

Symphony Xplorer H250 is powered with Media Tek MT6735, 1.3GHz Quad core processor, designed for mid-range smartphones. The processor supports 4G/ LTE network communication but it is not available for this smartphone; this may be due to price range of the phone. Symphony Xplorer H250 is designed with 13MP lens which is supported by MT6735 chipset and HD 1080p video recording.

Camera

There is nothing unique about the camera of Xplorer H250 interface. Videos can be recorded in full HD mode at 1080p (1920x1080) @30fps.



Symphony Xplorer H250 has 13.0 MP (4128x3096p) rear camera with good image quality. Different modes of the rear camera include HDR mode, PIP mode, live photo mode, motion tracker mode, panorama mode, multi angle view mode and face beauty mode. There is no flash light option for front camera but the image quality is quite good.

Memory:

The smart phone carries 16 GB ROM and 2 GB RAM with the combination of 1.3 GHz Quad core processor, making multitasking smooth. It also supports external micro SD card up-to 32 GB.

Battery

Symphony Xplorer H250 comes with 2350 mAh li-polymer battery. It gives good battery performance like stand-by time is 385 hours and talk time is 10 hours (depending on phone setting and network).

Interface

Interface of Symphony Xplorer H250 is user-friendly and easy to use. Some gadgets and icons by default placed on the home page. Symphony Xplorer H250 is pre-loaded with Office Suite 8 which help you to open files like PDF format, Excel files, and Word files, it can also help you to create Word, Excel and Power Point documents. Mobile anti-theft application which help you to find your lost/stolen android is also a distinctive feature of Symphony. SHAREit application is also already installed to share your content like photos, videos, music, contact, etc.

Network/ Connectivity

Symphony Xplorer H250 is a 3G supported smartphone with dual SIM option. Besides that, it has Wi-Fi, GPS and Bluetooth connectivity options.

OS: Android, v5.1 (Lollipop)



Display: 5 inches



Battery: Embedded 2350 mAh



Dimensions: 142 x 71 x 7 mm



Camera: 13MP AF with LED Flash



Memory: 2 GB RAM + 16 GB ROM



Processor: 1.3 GHz, 64-bit Octacore



Price: 18,999 PKR

Benchmarking

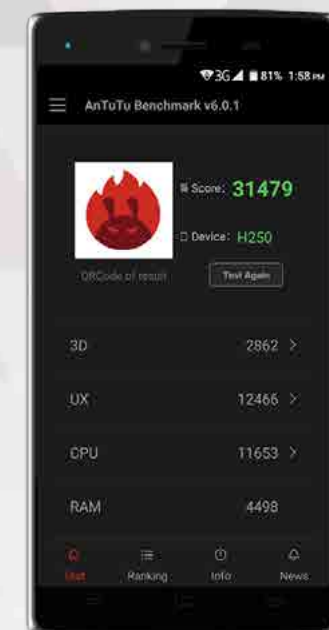
Vellamo

Vellamo Benchmarking test compares the performance of browser, metal and multicore with other devices and give scores accordingly. In Vellamo test, browser got 2,467 points, metal core got 932 points and multicore got 1,438 points, an outstanding scores for mid-range smartphone.



Antutu

Antutu benchmarking tests the different part of smartphones like, CPU, storage, sensors, and information about the operating system. Symphony Xplorer H250 got 31479 points which is a good score for a mid-range smartphone. The device supports up to five point touch.



Good

- Beautiful design with smooth touch
- Elegant 13MP camera with 1080p video recording
- Reasonable price
- Mobile anti-theft application

Bad

- No OTG
- Fragile Glass cover on the back, although it looks attractive

Final Verdict

Symphony Xplorer H250 has some great specifications and the price is also quite reasonable. It also performed well in our benchmarking testing so, we consider it as a good mid range smartphone.

QMobile Noir S6

OS: Android, v6.0 (Marshmallow)
Display: 4.95"
CPU: Quad-core 1.3 GHz
Camera: 13 MP, LED Flash, Autofocus
Memory: 16 GB ROM, 2 GB RAM

Infinix Note 3 Pro

OS: Android, v6.0 (Marshmallow)
Display: 6.0"
CPU: Octa-core 1.3 GHz
Camera: 16MP, Autofocus, LED flash
Memory: 16 GB ROM, 3 GB RAM

QMobile Noir Z14

OS: Android, v6.0 (Marshmallow)
Display: 5.5"
CPU: 1.8 GHZ Octa-core
Camera: 13 MP, Autofocus, LED Flash
Memory: 32 GB, 4 GB RAM

Huawei Y6II

OS: Android, v6.0 (Marshmallow)
Display: 5.5"
CPU: Octa-core 1.2 GHz
Camera: 13 MP, Auto Focus, LED flash
Memory: 16 GB ROM, 2 GB RAM

HTC Desire 830

OS: Android, v6.0 (Marshmallow)
Display: 5.5"
CPU: Octa-core 1.5 GHz
Camera: 13 MP, Autofocus, LED Flash
Memory: 32 GB, 3 GB RAM

Haier Esteem i95

OS: Android, v5.1 (Lollipop)
Display: 5.0"
CPU: Quad-core 1.3GHz
Camera: 13 MP, Autofocus
Memory: 32 GB ROM, 3 GB RAM

GFIVE G10 Honor

OS: Android 4.2 (Jelly Bean)
Display: 5.7"
CPU: Quad-core 1.5 GHz
Camera: 13 MP Autofocus, LED Flash
Memory: 32 GB ROM, 1 GB RAM

QMobile Noir Z12 Pro

OS: Android, v6.0 (Marshmallow)
Display: 5.5"
CPU: Quad-core 1.3 GHz
Camera: 13 MP, Autofocus, LED flash
Memory: 32 GB, 3 GB RAM

QMobile Noir S1

OS: Android, v5.1 (Lollipop)
Display: 5.0"
CPU: Quad-core, 1.3GHz
Camera: 5MP, LED Flash
Memory: 8 GB ROM, 1 GB RAM

Symphony Xplorer V85

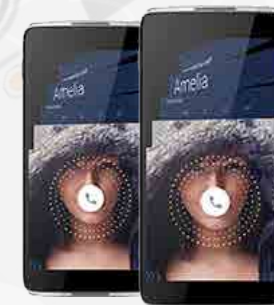
OS: Android, v5.1 (Lollipop)
Display: 4.7"
CPU: Quad-core, 1.3 GHz
Camera: 8 MP
Memory: 8 GB ROM, 1 GB RAM

QMobile Noir LT680

OS: Android v5.0 (Lollipop)
Display: 5.0"
CPU: Quad-core 1.0 GHz
Camera: 8 MP, LED flash
Memory: 16 GB, 2 GB RAM

Haier Volt P4 500

OS: Android, V5.1 (Lollipop)
Display: 5.0"
CPU: Quad-core, 1.3GHz
Camera: 8MP, LED Flash,
Memory: 16 GB ROM, 2 GB RAM

Alcatel Idol 4

OS: Android, v6.0.1 (Marshmallow)
Display: 5.2"
CPU: Octa-core (4x1.7 GHz & 4x1.2 GHz)
Camera: 13 MP, Autofocus, dual-LED (dual tone) flash
Memory: 16 GB, 2/3 GB RAM

HTC Desire 628

OS: Android, V5.1 (Lollipop)
Display: 5.0"
CPU: Octa-core 1.3 GHz
Camera: 13 MP, Autofocus, LED flash
Memory: 32 GB ROM, 3 GB RAM

Haier Esteem i90

OS: Android v5.1.1 (Lollipop)
Display: 5.1"
CPU: Quad-core, 1.3GHz
Camera: 13 MP with flash
Memory: 16 GB ROM, 3 GB RAM

Symphony Xplorer H250

OS: Android, v5.0 (Lollipop)
Display: 5.0"
CPU: Quad-core 1.3 GHz
Camera: 13 MP Camera
Memory: 16 GB ROM, 2 GB RAM

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TELECOM CAMPAIGNS

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.

5

Telenor Rawaan

Telenor's Rawan is a brilliant effort to present the beauty of Pakistan on its 70th Independence Day in a stunning musical journey. Dotted with the colors of patriotic sentiment and resolve to strengthen the motherland, the captivating Music Video has no doubt extraordinary environment, music and performance. The advert wonderfully takes the viewer on a journey of discovering Pakistan.

Verdict: The Goosebumps Campaign!!!



5

Ufone Stands with U

Ufone Stands with U TVC is based on a unique and creative idea that gives tribute to the unsung heroes of Pakistan. The theme surrounds across the talented Mohsin, Saqib, Sabiha and Shamim who work day and night to bring the change we all want to see in Pakistan. The series of adverts narrate the efforts of these Pakistanis in a brilliant way that successfully touches everyone's hearts. The entire idea & specially the message of this campaign is presented in a way that motivates others to fulfill their dreams too.

Verdict: Bravo Ufone !!!!



3.9

PTCL Smart Link App

Not an extraordinary attempt by PTCL but still Smart Link App TVC is better one as compared to that "Taar Taar advert". May be after few more attempts PTCL could finally come up with good ads. The Smart Link App campaign conveys the message to the audience by telling the use of Smart Link App. As always, there are no known models in the ad but still the performance, music and background are acceptable.

Verdict: A lot of room left for improvement....!!!

4.5

Zong 4G

Zong's new TVC tries to signify operator's data leadership in the industry and that is why the environment of campaign tells us all about internet connectivity. Zong tried to capitalize on the growing technological confidence of consumers on its 4G by leveraging music as a platform of mass appeal to the youth. The plot focuses on the dreams of discovering a symphony that can be shared with the world through the power of Zong's fastest 4G services. For this reason, the TVC is shot at night in a street set entirely under Neon lights. The plot entirely focuses on the 4G services with attractive theme and impressive music.

Verdict: Creative and Imressive..!!

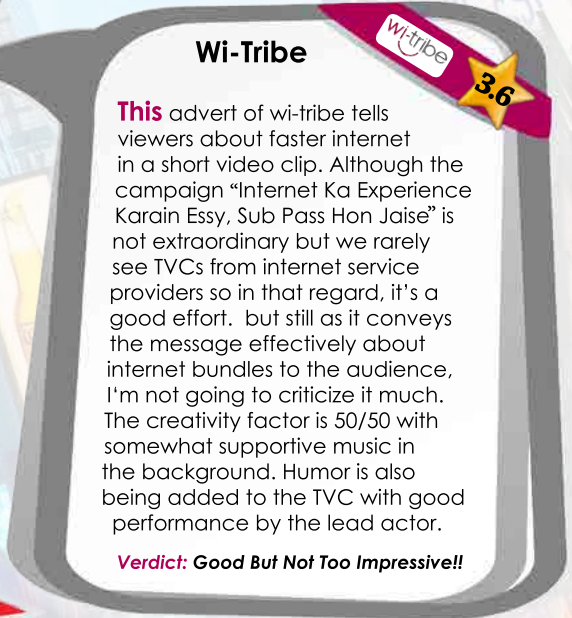


3.6

Wi-Tribe

This advert of wi-tribe tells viewers about faster internet in a short video clip. Although the campaign "Internet Ka Experience Karain Essy, Sub Pass Hon Jaise" is not extraordinary but we rarely see TVCs from internet service providers so in that regard, it's a good effort. but still as it conveys the message effectively about internet bundles to the audience, I'm not going to criticize it much. The creativity factor is 50/50 with somewhat supportive music in the background. Humor is also being added to the TVC with good performance by the lead actor.

Verdict: Good But Not Too Impressive!!



4.2

Huawei Y5 II

Huawei has been creating waves with its latest innovations and finest quality of products. The Huawei Y5 II TVC is a brilliant attempt to convey same vision of the brand by introducing Heartthrobs Mawra Hocane & Adeel Chaudry as the New Brand Faces. Mawra & Adeel did justice to the script and theme of campaign by telling the audience about the features of Y5 II and Y3 II smartphones in quite convincing and energetic way. Also the music and background is well-matched with the overall TVC idea.

Verdict: A Good Campaign !!!





TOP MUST HAVE APPLICATIONS & GAMES FOR YOUR SMARTPHONE

ChatGame - Beauty HD Video Call

Rating : 4.1 Price: Free



ChatGame - The Easiest Video Chat App Ever! Send your friends a video message and share it to various Social Media platforms!
ChatGame - A Better Way to Communicate with Clear and Smooth Video Chat Quality. Video chat on 3G/4G network connections takes 60% less data compared to some other video calling apps.

TPL Maps

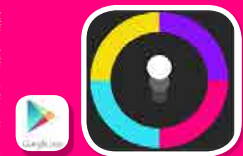
Rating : 4.4 Price: Free

TPL Maps, a product of TPL Trakker Ltd. is Pakistan's first indigenous digital mapping solution. TPL Maps has been created using state of the art technology that will not only provide real time intelligent routing but also give users access to turn-by-turn navigation, smart search options and even live traffic updates.



Color Switch

Rating : 4.5 Price: Free



Over 100,000,000 downloads worldwide! Play now the #1 addictive game of the year!
Tap the ball carefully through each obstacle and your ball will switch color with some powerups. You must follow the color pattern on each obstacle to cross it!

Brain It On! - Physics Puzzles

Rating : 4.5 Price: Free

Deceptively challenging physics puzzles for your brain! Everything in Brain It On! is free, you can choose to buy puzzle packs if you want to unlock them right away, or you can unlock them for free with stars that you collect. Brain It On! is like Crayon Physics meets Draw Something. But it's challenging though, if you find it too hard you might want to check out something easier like Brain Dots. This game is not supported on emulated platforms like BlueStacks.



Fast like a Fox

Rating : 4.2 Price: Free



One of the most fun and fastest platformers ever created with unique tap control! Play now for free!. Fast like a Fox uses your device's internal sensors to detect movement. Learn the tapping technique to have the best precision. The treasures of the Golden Fox tribe have been stolen by mysterious minions.

Guess Word - 4 pics 1 word

Rating : 4.2 Price: Free

Guess Word : 4 pics 1 word
Guess World - 4 pics, 1 word
What's the word? Can you guess the word? The game will show you some pictures and your goal is to figure out what they have in common. Look at the pics and find out what they have in common. You can open more pictures if you cannot guess out from the picture shown to you.



Ultimate Guitar Tabs & Chords

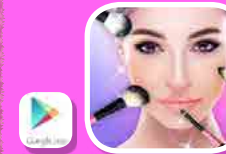
Rating : 4.5 Price: Rs 199

Ultimate Guitar Tabs & Chords is a mobile version of the world's largest catalog of guitar & ukulele chords, tabs and lyrics, available even offline. Learn how to play your favorite songs on acoustic, electric guitar or ukulele. Get over 1,000,000 tabs and free daily updates with recent hit songs! Learn how to play guitar from scratch or refresh your knowledge of the instrument with interactive lessons.



Selfie Editor - InstaBeauty

Rating : 4.2 Price: Free



InstaBeauty: Best Selfie photo Editor for Instagram, Snapchat, Twitter and Facebook. InstaBeauty contains more than 50 makeup styles and 100 filters. It is a professional selfie camera populated with more than 300 million users globally because of selfie filters, grid filters, stylish collage, emoji sticker, quick snap, special video and many other amazing features.

Roll the Ball™ - slide puzzle

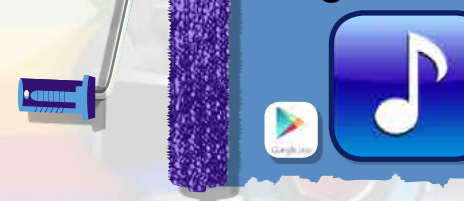
Rating : 4.3 Price: Free

More than 40 M downloads worldwide. New BRAIN TEASERS from the maker of Block!, Pipe Lines : Hexa & Words Crush: Hidden Word!. Roll The Ball: slide puzzle is a simple addictive unblock puzzle game, keep you playing it.



Ringtone Maker

Rating : 4.2 Price: Free



Ringtone Maker is free app creates ringtone, alarms, and notifications from MP3, FLAC, OGG, WAV, AAC(M4A)/MP4, 3GPP/AMR files. You can set the start and ending notes by sliding arrows along the timeline, by pressing Start and End to record the point, or by typing in time stamps.

Shoot The Zombirds

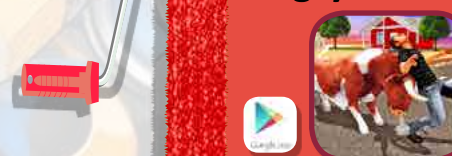
Rating : 4.5 Price: Free

Polished game with a unique flavor. Hugely playable, eminently enjoyable, undeniably addictive. Great controls and new great looking visuals. The whole zombie apocalypse thing is real! Cute and addictive shooting game.



Angry Bull Rampage

Rating : 3.9 Price: Free



In this ultimate angry bull games and bull game simulator your aim is to create rampage in 3d fantasy city with your ultimate bull simulator game with new bull fighting games. At the start of the game you will see a qurbani bull that has run away from butcher is ready to attack on the civilians and their animals. Create maximum destruction and damage everything to achieve the ultimate goal in this angry bull attack simulator with your ultimate angry bull.

Lifesum - The Health Movement

Rating : 4.3 Price: Free

Lifesum helps you make better food choices, improve your exercise, and reach your health goals. Build healthy habits in small, sustainable steps and make health a part of your lifestyle, not another thing on your to-do list.



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The Best Quality
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Decared a No. 1 Brand
in Bangladesh-2015-16



NOIR S6
STYLE THAT SPEAKS!



ROM / RAM
16GB / 2GB



Gpower 3
Rs.
7199

KEY FEATURES

Dimension	143.5*72.5*9.9mm
Weight	157g
Battery	4180mAh Ultra Long Lasting battery
Camera Back	Back 5MP Auto Focus with LED Flash
OS	Android 5.1 lollipop
Memory	1GB RAM , 8GB ROM SDCard Up to 32GB
Processor	1.3 GHZ Quad-Core
Display Size	5.0" FWVGA IPS Display
Display Color	Capacitive touch screen
Network	3G : HSDPA 850 / 900 / 1700 / 1900 / 2100
Color	Champagne Gold, Rose Gold
Connectivity	Bluetooth, USB, WLAN (Wi-Fi 802.11 b/g), GPRS, EDGE, 3G
Entertainment	FM radio, MP3/WAV/WMA/ player, MP4/3GP/WMV player, 3.5mm jack, YouTube, Google Talk, Gmail, Facebook, Games
Other Features	Dual Sim, Dual Stand-by, Navigation, Maps, Voice search, We Chat, skype, Calendar, Calculator, Tasks, Document organiser

KEY FEATURES

Dimension	143.5*72.5*9.9mm
Weight	189g
Battery	4180mAh Ultra Long Lasting battery
Camera Back	Back 5MP Auto Focus with LED Flash
OS	Android 5.1 lollipop
Memory	2GB RAM , 16GB ROM SDCard Up to 32GB
Processor	1.3 GHZ Quad-Core
Display Size	5.0" FWVGA IPS Display
Display Color	Capacitive touch screen
Network	3G : HSDPA 850 / 900 / 1700 / 1900 / 2100
Color	Champagne Gold, Rose Gold
Connectivity	Bluetooth, USB, WLAN (Wi-Fi 802.11 b/g), GPRS, EDGE, 3G
Entertainment	FM radio, MP3/WAV/WMA/ player, MP4/3GP/WMV player, 3.5mm jack, YouTube, Google Talk, Gmail, Facebook, Games
Other Features	Dual Sim, Dual Stand-by, Navigation, Maps, Voice search, We Chat, skype, Calendar, Calculator, Tasks, Document organiser



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4GB
RAM



4G
LTE
Dual SIM

