



Three 3G/4G Auctions yield Record PKR 205,884 Billion:
The three auctions of 3G/4G Next Generation spectrum Licenses since 2014 has resulted in total contribution of PKR 205.884 Billion (including tax) to treasury. It's to the credit of Minister IT & Telecom Ms Anusha Rahman Khan and team to execute the three auctions in a transparent and successful manner.

The last PPP government failed to conduct the 3G/4G Auction during its tenure. A clear and well laid out professional policy concluded by the Auction Supervisory Committee headed by Senator Mohammad Ishaq Dar, Minister for Finance, Revenue, Statistics & Privatization yielded PKR 119.796 billion (including tax) in an auction conducted in 2014. This yield was much greater than the budgetary estimates made for the auction. Later on the Auction Supervisory Committee was headed by Minister of State for Information Technology Ms. Anusha Rahman Khan for the two consecutive auctions held in 2016 & 2017. Due to growth of the market and the proactive professional policy management by all stakeholders ensured that the remaining frequency spectrum lots were further successfully auctioned at winning prices of PKR 48.095 billion and PKR 35.339 billion (including taxes) in the FY 2015-16 and FY 2016-17 respectively.

The Auction Supervisory Committees ensured to set right kind of base prices of USD 395 Million and USD 295 Million for 10 MHz blocks in 2016 and 2017 auctions respectively which led to optimal sale of the scarce asset of the State.

Broadband Users from less than 3 million in 2014 jump to over 42 Million:
Due to successful auction of 3G/4G licenses, Broadband penetration in Pakistan has increased from less than 3 million in 2014 to over 42 million now. This has allowed better connectivity, reception and introduction of Digital Applications. People in Pakistan now communicate, share video/audio, shop and bank and do business in the most modern way and comparable to any country in the world. Productivity has increased manifold due to faster upload and download speeds of 3G/4G networks. As announced by Minister of State for IT Ms. Anusha Rahman Khan, now Pakistan is preparing for the test of 5G services, which will further improve the quality, and range of broadband services in Pakistan.

Broadband for sustainable Development:
Every unconnected village with 100 population will be connected by 2018.

Under a massive Connectivity Program of connecting the unconnected, the Ministry of IT & Telecom has provided telecommunication services to over 10,000 Villages in the remotest parts of the country. Around 7000 kms of fiber optic is being laid to connect the remotest parts of the country under Broadband for Sustainable Development Programme, every 100 population unconnected village will be provided connectivity by 2018.

Four glorious years for IT & telecom sector



Minister of State for IT & Telecom Ms Anusha Rahman Khan receives "GSMA Government Leadership Award 2017" at the Global Mobile Awards in Barcelona

Control over Grey Traffic: Legal traffic increases from less than 400 million minutes to over 1.5 billion minutes.
The phenomenon of grey traffic was one of the key concerns in 2012 due to uncalled for consequences of ICH regime. The legal incoming minutes were reduced from some 2 billion minutes before ICH regime to less than 400 million minutes. The ICH regime also led to exponential increase in call rates for overseas Pakistanis and provided arbitrage for the grey traffickers resulting in serious concerns among overseas Pakistanis.

96% Growth in IT Exports in last 4 years & Strong Growth in Local IT Industry.
Pakistan's IT exports grew by 96%. Over the last four years IT & ITES are estimated to have crossed \$2.9 billion a year including exports generated by IT companies and freelancers. Total revenue of IT industry including exports and domestic revenue is estimated to be around \$3.4 billion this year. Pakistan Software Export Board is facilitating IT growth with Software Technology parks. A Software Technology Park is being setup in Islamabad with Korean Exim Bank financing.

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Latest applications trend after broadband growth in Pakistan

Information and Communication Technologies (ICTs) are the key enabler for the sustainable economic development and technological revolution in a country. Implementation of comprehensive and collaborative ICT policies and programs can be differentiating factors in achieving sustainable fiscal and social targets of national development agenda. A big step in this direction was introduction of mobile broadband services (3G and 4G) in Pakistan in 2014 and onwards, that are serving as bedrock for modernisation of ICTs in the country.

Latest ICTs are re-shaping the communication norms in every facet of human society. The traditional way of information flow has in-

creasingly changed with the digital networks that have huge impact on personal and business relationships. According to the World Economic Forum (WEF), this is now considered as the fourth industrial revolution which is evolving at an exponential pace and transforming the entire systems of production, management and governance.

In Pakistan, the major hurdle in ICT proliferation was the unavailability of sufficient bandwidth, which was addressed by spectrum auction in 2014. Both operators and broadband users in Pakistan responded overwhelmingly and resulted in an exponential growth of broadband subscription. Keeping in view the extra-ordinary demand for mobile broadband

and to facilitate further growth in broadband services, Ministry of IT & Telecom (MoIT) and Pakistan Telecommunication Authority (PTA) adopted a strategy to make the availability of required spectrum on continuous basis and thereby auctioned additional spectrum in 2016 and 2017. Now out of four mobile operators, three operators are providing the cutting edge 4G services. These policy decisions have increased broadband subscribers from 3.8 million, in June 2014, to 42.4 million in a short period of only three years, which is an exemplary policy-induced growth for other sectors in Pakistan.

The fast paced broadband adoption is transforming the landscape of business in Pakistan. The impact on e-commerce industry and mobile financial services has been fascinating. More and more products and services are now being made available online in Pakistan with e-commerce websites/portals being rolled out. It is estimated that the size of Pakistan e-commerce market is around USD 100 million and expected to increase to USD 1 billion by 2025. More than 90% of the e-commerce transactions are done by Cash on Delivery (C A D).



By Dr. Syed Ismail Shah Chairman PTA

system, which provides huge potential for mobile payments and e-payments solutions. Pakistan is also making good progress on the Business to Business front as the software industry aims to achieve the goal of USD 5 billion export mark by the year 2020. Approximately 10,000 new IT graduates are being produced every year. E-commerce can provide entrepreneurship and self-employment opportunities to the youth.

In recent years, SBP and PTA have taken regulatory initiatives with a more focused approach towards financial inclusion by capitalising on modern technologies that can be used to improve financial access in the country, in particular, through improved payment systems and branchless/ mobile banking networks. Since 2014, there has been a tremendous growth in the mobile banking accounts and transaction activities. Today, mobile banking sector has 20 million m-banking accounts with annual transaction volume of over Rs 2100 billion compared to only 4 million m-banking accounts with a transaction volume of Rs 1353 billion in 2014. The m-banking agents network has been expanded to every nook and corner of the country, in particular, serving a large population in the rural areas where traditional bank branches are not available. Keeping in view the demand of e/m payments, local experts are developing innovative payment solutions / apps whereby users can avail financial services of multiple services providers from a single platform.

Now, companies are coming forward with solutions to transform almost all manual and tedious jobs in the society to make them digital through apps and mobile services. Mobile companies, technology firms and police depart-

ments have now launched payment of traffic 'challans' through mobile money solutions. SBP and PTA have also provided necessary regulatory framework for Third Party Services Providers (TPSPs), Payment System Operators (PSOs) and Payment Service Providers (PSPs), which will play a catalyst role for the expansion of interoperable financial and payment solutions in the economy.

Some of the local portals have emerged as leading online businesses in Pakistan. The auto portal PakWheels has emerged as the leading online car classifieds in Pakistan. It has reached a listing of over 160,000 cars, over 24,000 motorcycles and is accessed by more than 100,000 unique visitors every day. Zameen.com is the leading online real estate database that connects real estate dealers, developers, estate agencies with general buyers, sellers and renters in Pakistan. Foodpanda, Pakistan's leading food delivery app, estimates that it has generated a staggering one billion rupees in additional sales for the restaurant industry during the last year. Rozee.pk enjoys an exalted standard as Pakistan's #1 job website with plenty of nationwide vacancies advertised each day. Daraz.pk is the largest online shopping mall, which provide platform to multiple vendors and one-stop shop to consumers. These portals are now also providing mobile and online solutions for payments.

Looking at the internet usage trends in Pakistan, the use of social media platforms and search engines are the favorite activities of internet users. Facebook is the most popular social platform/website which handles more than 3 billion connections per day. Google is the second most accessed website in the country with over 2.5 billion connections per day. Twitter and Instagram are also among the toppers in the list of most online hits per day.

Another big factor in the fast adoption of internet is the exponential use of Over the Top (OTT) services such as Skype, WhatsApp, Viber, Tango, Facetime, IMO etc. The traditional means of voice communication are in tough competition with the OTT services. Skype is one of the most popular OTT services in Pakistan in terms of connections per day.

The spread of high-speed internet connections within households in Pakistan and the success of broadband applications provide an easy means for businesses and individuals to publish music, audio, video or text/picture digitally. The entertainment industry is shifting its traditional way of production, packaging, delivery and marketing to the online environment. Other industries are entering the territory of content production, creating fierce competition.

Many students are now adopting online education in Pakistan.

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Four glorious years for IT & telecom sector

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The present government after taking office in June 2013 handled the issue on priority. Ministry of IT & Telecom under the leadership of Minister of State for IT Ms. Anusha Rahman Khan reinvigorated the essence of de-regulation in the LDI sector and hence discontinued the ICH regime in June 2014 and most aggressively fought all cases and got the revised policy directive implemented in letter and spirit. A key ingredient of the revised directive was to put APC on zero for



Minister of State for IT & Telecom Ms. Anusha Rehman Khan receiving Global achievement GEM TECK award by UN Women and ITU in New York

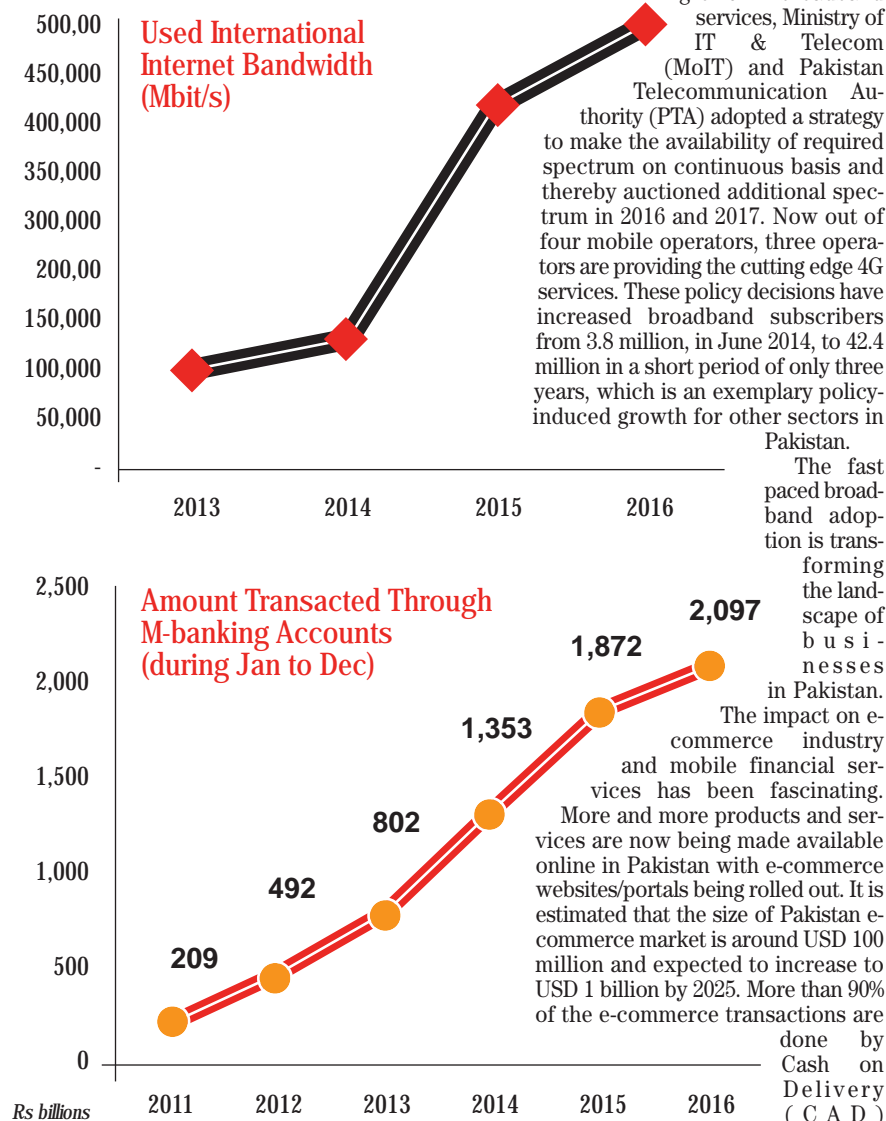
the time being in order to ensure complete deregulated environment around international incoming telephony. The implementation of the Revised Policy Directive, the LDI segment is fully deregulated resulting in increase of legal/white international incoming traffic from less than 400 million to around 1.5 billion minutes/month now. The increase in legal traffic means significant improvement both in terms of quality of service as well as revenues of the industry with proportionate increase in tax collection. International incoming call rates have decreased significantly to benefit of expatriate Pakistanis and quality of incoming calls has improved as well.

IT Incubators for Startups:

MoIT has already setup a National Incubation Center (NIC) at Islamabad, which is to host 40 incubatees every year for the next five years. Likewise, NICs are being setup, one each in Karachi, Lahore, Peshawar and Quetta.

ICT for Girls:

226 Girls Schools in Islamabad are being equipped with computer labs and Microsoft 4C training. In addition 150 Women Empowerment Centers across Pakistan are being equipped with Computer Labs and Microsoft 4C training.



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Telenor Pakistan's contribution to the society & digital leadership

With an estimated population of over 200 million, over 50 million of which is youth in the age group of 18-29 years, Pakistan is an amazing place that is full of great potential and opportunities. Having an average annual GDP growth of 4.91 percent, the country is on the road for further economic stability and boost with increased foreign investment. Some recent developments, such as inclusion of the Pakistan bourse in the MSCI's 'Emerging-Market Index, foreign acquisition of PSX shares¹, and the enormous CPEC project, hint to the fact that the only way Pakistan's economy is going in the future is up.

Pakistan is presently undergoing a digital transformation and, with increased public-private sector collaboration, is determined to do away with the hurdles holding it back from achieving its full growth potential. As the country aims to bring itself at par with the developed world in terms of advancement and opportunities, it has made digital and financial inclusion two of the key constituents of its Vision 2025. Realising the opportunities of financial inclusion in the country, Pakistan has also developed a National Financial Inclusion Strategy aimed at 'building a dynamic and inclusive financial sector to support Pakistan's growth in the 21st century.'

Financial inclusion

The current digital and financial inclusion figures suggest that there's still much left to achieve. International Telecommunication Union's (ITU) ICT Development Index 2016 has placed Pakistan 146th out of 175 countries. Despite being among the top 10 countries of the world in terms of number of mobile users, share of broadband and mobile users in Pakistan is still low with only 16.7 million people having access to broadband services as compared to the 130 million people who actually need them. As for financial inclusion, less than 15% Pakistani adults have a formal bank account with less than 5% women included in the formal financial sector. This shows large untapped potential in both digital and financial services spheres.

Operating in Pakistan for 12 years now, Telenor Pakistan knows the ins and outs of these dynamics. Having emerged as the country's second largest cellular operator and its primary digital lifestyle partner, Telenor Pakistan has become the frontrunner of the ICT-powered digital and financial revolution that the country is witnessing today. With a vision of empowering the Pakistani society and the mission of digitising Pakistan, Telenor has been contributing its best



towards the socioeconomic development of the country while lending its complete and incessant support to the Government of Pakistan for reaching the shared goals of inclusion and empowerment faster.

To bridge the gaping financial inclusion divide, Telenor has pioneered branchless banking in Pakistan with Easypaisa that today enjoys the largest financial footprint in the country with over 75,000 Easypaisa shops in more than 800 cities across the country, and over 650,000 transactions conducted every day by 20 million active customers. To boost the e-commerce industry in Pakistan, Telenor also introduced the country's first complete online payment solution with 'Easypay'. The company also keeps partnering with the country's leading e-commerce players to build and improve customer trust in online shopping.

Digital transformation

Talking about the contributions to the country's digital transformation, Telenor has many other industry-first initiatives to its credit. Foreseeing how connected homes and devices can make lives easier, safer, and more productive, Telenor became the first mover of IOT (Internet of Things) in Pakistan organising large-scale IOT exhibitions in key metropolises. Having launched such useful IOT devices as companion watch for keeping location track of your kids and automate for tracking your vehicle's live performance, Telenor has established a strong foothold in the IOT arena.

With 'Internet for all' being its ambition, Telenor has done more for digital inclusion of the masses than any other operator. The company's successful two-pronged strategy for 3G/4G penetration has been to flourish and diversify in urban centres, while at the same time expand its network and broad-

band outreach to the unserved areas. As it continues to boost its broadband services with measures like recent acquisition of the 850MHz spectrum and launch of the best-in-class 4G services, Telenor also maintains an in-house portfolio of affordable small and large screen 3G/4G devices to ensure that the benefits of digitisation are extended to all budget segments. The company also frequently holds Digital Festivals to exhibit its devices portfolio in an attempt to build and promote the digital ecosystem in Pakistan.

Youth empowerment

Another way for Telenor to boost the country's digital ecosystem is through youth engagement. Telenor achieves it through widely popular annual programs like Opportunity, Telenor Youth Forum (TYF), and Telenor Velocity. Opportunity is one of the most sought-after platforms for the emerging app developers to showcase their creativity and talent in the mobile application market. Telenor Youth Forum inspires courageous young minds from Telenor's 13 global markets to tackle social challenges through technology and innovation. Velocity is an accelerator program that focus on making available the full width and breadth of Telenor's solutions and experiences to help startups reach mass market.

Mobile agriculture

Using its digital competencies for the so-

cial good, Telenor has introduced mobile agriculture and digital birth registrations in the country for the very first time. The company's mAgri initiative 'Khushaal Zamindar' is a mobile agriculture service for small scale farmers that provides location-specific weather forecast along with contextual agronomic advisory for every farmer's relevant crop mix and tips for livestock management. Telenor has also launched women-exclusive mAgri services to cater to the 20 percent of the 2.5 million Khushaal Zamindar users who are females.

Digital birth registration

Telenor Pakistan collaborated with UNICEF Pakistan to launch a pilot in 2014 to mediate child's right to identity through mobile birth registrations. The disparity of statistics before and after the project was launched in Sindh in 2014, stand testament to its success. Sindh Multi Indicator Cluster Survey, conducted by the Sindh government and UNICEF in 2014, showed that the rate of registered births of children under five was mere 29%. Once the pilot project was rolled out, 94% of births were being registered.

Social and economic contribution

When it comes to the socioeconomic contributions to Pakistan, Telenor also takes the lead there. Telenor Group's 'Global Impact Report 2016' reveals that in 2015 alone, Telenor Pakistan generated over \$1,793 million of GVA (Gross Value Added) for the Pakistani economy, created close to 180,000 direct and indirect employments, made \$170 million capital investment and a fiscal contribution of \$339 million to the Government of Pakistan through taxes and other regulatory payments, and ensured sustainability in the supply chain.

Through many other programs such as UNDP's 'Youth & Social Cohesion' project, Telenor Open Mind, Naya Aghaz, and iChamp, Telenor arranges constructive engagement for vulnerable youth, enhances PWDs' employability thorough with capacity building measures, prepares women to get back to work after a career break, and fulfils its responsibility as a digital leader to educate children about using internet safely for constructive purposes. Telenor has a long-term commitment in Pakistan and has now transformed into the country's local company with customers and Pakistani people being at the heart of all its operations, products and services.



Latest applications trend in Pakistan

Continued from page II

These young students tend to enroll in local/international education institutes that offer online training programs as well as on-line certification courses, where students can learn new skills and equip themselves with the necessary knowledge to compete with others in their professional careers. The trend of online education is increasing rapidly in Pakistan, and many online education institutes are operating in Pakistan, e.g. eCoursesPK (an education start-up) offers online education programs via distance learning.

The unprecedented uptake of mobile broadband has opened doors for new and innovative business ventures in Pakistan. Uber, world's largest cab service, has started its services in major cities of Pakistan including Karachi, Hyderabad, Lahore and Islamabad. Similarly, Careem is another car hiring service, which has huge success in Pakistan. Travly is another very innovative service that allow users to book rickshaw, car, and bus online through app. Mobilink has also launched its mLife services to connect drivers and riders initially in Islamabad and Rawalpindi, and is planned to launch its app to expand its services.

Even long distance travel services at government and private level are now using online systems for booking and other services. Pakistan Railways and Pakistan International Airline Ticket reservation portals are getting popular; similarly the consumers are enjoying online services of Daewoo Pakistan and many such services in the private sector, and are availing the payment through mobile and online solutions. Currently, consumers who have credit cards are enjoying these services.

Apart from attracting over USD 2 billion investment in the auction of spectrum since 2014, broadband growth has also opened up Pakistan for foreign investment in the digital world. Daraz.pk recently managed to secure an investment of USD 55 million for its operations in Pakistan, Bangladesh and Myanmar from Asia Pacific Internet Group (APACIG) and Commonwealth Development Corporation Group, UK. Zameen raised USD 29 million in two rounds of international funding from Catch

Group and Frontier Digital Ventures. Careem has raised an investment of USD 60 million from Abraaj Group (Abraaj) as lead investor for its operations in Pakistan and MENA region. Rozee.pk raised USD 6.5 million in a Series C funding round with Vostok Nafta and Piton Capital Lead Investment as the main investors. World's largest e-commerce company, Alibaba, has shown its interest in Pakistani market and has signed a MoU with the Trade Development Authority of Pakistan to bring the small and medium enterprise in the realm of e-commerce platform. Engagements with Alibaba can transform the reach of Pakistani products to international markets and help promote e-commerce and financial services in Pakistan.

Pakistan is at the crossroads of ICT revolution where ample regulatory space is provided to the innovators and entrepreneurs. Pakistan is going to become a start-up factory for new and innovative ideas which will positively impact the life experience of Pakistanis. Payload is the local startup, which have introduced the Bitcoin technology to Pakistani users. Bitcoin is a type of digital currency used to verify and transfer funds. With USD 121 million worth of transactions taking place through Bitcoin every day, the technology is fast becoming a reliable method of transactions for individuals and businesses worldwide. Smart Devices is another start-up working on Internet of Things (IoT); the company is recently acquired by Orient Pakistan. Similarly, there are number of startups like Mizaj (connecting fashion designer to the consumer), ShaadiBox (online market connect you with marriage bureaus/vendors), Chimera (for online 3D-modeling) and a lot more.

The demand side of ICTs is ever expanding and the operators, developers and service providers are rapidly catching up. However, there are challenges also. PTA is exerting all possible efforts, permissible within its regulatory ambit to highlight the importance of ICTs in the economy, and continuously engaging stakeholders for collaborations and new initiatives to maximise the benefits of ICT and broadband technologies in every sector of the economy.

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Working towards Digital Pakistan

Digital Pakistan, which means a more prosperous and an economically stable Pakistan where citizens have accessible, affordable and reliable Information & Communication Technology (ICT) services and solutions. Jazz, as the largest ICT provided in the country, is committed to a progressive Pakistan. Jazz's own transformation to a digital company will deliver huge benefits, not just for our consumers but to Pakistan's future as well.

Around us the world is changing at a rapid pace and we, as a nation, need to keep up with the same pace. Supercomputing; Artificial intelligence; Self-driving cars; Genetic modifications - there is enough evidence of the coming of the 'Fourth Industrial Revolution' and that too at an exponential pace, for us to try and future proof our progress.

For this reason, the merger of two large telecom operators in a single digital company, backed by a global tech company in VEON, we are now working tirelessly to achieve the government's vision of a 'Digital Pakistan'.

We understand that the technological revolution will fundamentally alter the way we live, work and relate to one another. In its scale, scope and complexity we believe the transformation from a telecom to a digital company allows us to play an integral and leading role in this technological revolution that will help Pakistan to convert the 'digital divide' in to a 'digital dividend'.

Digital technologies have boosted growth, expanded opportunities, and improved service delivery. But it is by way of digital inclusion, efficiency and innovation that we can create digital dividends for the entire economy.

For this to happen, it is important to provide an environment supporting young people to find solutions to the challenge of achieving sustainable development. These include access to basic education and inspiring social entrepreneurship, particularly in the digital arena. As part of our group wide initiative, 'Make Your Mark,' we look to contribute to a more sustainable community which will provide a solid foundation for a more con-



Aamir Ibrahim
CEO Jazz

Around us the world is changing at a rapid pace and we, as a nation, need to keep up with the same pace. Supercomputing; Artificial intelligence; Self-driving cars; Genetic modifications - there is enough evidence of the coming of the 'Fourth Industrial Revolution' and that too at an exponential pace, for us to try and future proof our progress.

nected society. Only by creating such environment, where public-private partnerships ensure support to the youth of Pakistan, the country will become a player in the digital revolution.

One example of this initiative is the successfully executed National Incubation Center (NIC), where startups from around the country are creating experiences that enable learning, networking and business growth under the Jazz XLR8 program. An excellent example of public-private collaboration, Jazz has partnered with the Ministry of Information Technology & Telecoms, and the National ICT R&D Fund, to create a space that will drive innovation and entrepreneurialism.

To be a part of something as important and game changing as the National Incubation Center was our vision. Now that we have realised this vision by opening doors to young entrepreneurs, the goal now is to ensure their long term success and sustenance.

All of this is just the start. This is but one small piece of the larger jigsaw that Jazz is endeavouring to be a part of. A key enabler for this environment will be played by policy makers and the government.

These include enhanced cooperation, among other states and stakeholders, in building consensus around a set of agreed international protocols to strengthen the stability, trust and security in the cyberspace.

It is also imperative to find a way for protection of offline rights of the citizens in an online world and to enable an environment which is conducive to universal access to the internet for all segments and businesses.

Also, there are needs to be strengthening of regulations that ensure competition among businesses, adapting workers' skills to the demands of the new digital economy, and ensuring that institutions are prepared to take the digital leap - something Jazz is already supporting the government with.

Jazz's understanding of what gaps we need to fill, our programs that solidify public-private partnerships, and our efforts to empower the nation at large through digital sustainability, are some of the ways Pakistan is forging forward towards a digital Pakistan-an exciting connected journey more than a destination.

A few words from our Jazz XLR8 superstars

Rizwan Asif

Co-Founder and Lead Developer Mad Hunt

Being in a startup is like building your own ship. While at sea, you could either drown or get upgraded onto a bigger ship. The National Incubation Center (NIC) and it's Jazz xlr8 program are the bigger ship for our startup. We have been equipped with some of the essential tools here which would have been really difficult to acquire at the initial stage of our initiative. A work-space where we can work under one roof, build inter and intra team skills and collaborate with others. One important skill we, the young entrepreneurs require, is the instruction manual for building a ship. The mentor-ship program at the NIC allows us to interact with experienced sailors, enabling us to shape our dreams into reality. Our startup also had the privilege to participate in 4YFN this year, held in Barcelona (under the umbrella of Jazz XLR8 program). Me and my team are grateful to the team behind NIC and Jazz. We intend on making the most through this journey.

Ershian

Co-founder Anzen

Anzen designs Surveillance solutions based on Artificial Intelligence and Deep Learning on the platform of IoT. We got the opportunity to represent Pakistan at 4YFN under the flag of VEON, the parent organization of JAZZ. It was an interesting experience for us as it gave us the exposure needed for young startups to experience the global market. We utilized this opportunity to interact with major global brands and players like Samsung, Intel, Microsoft and Adobe. Similarly, we got the opportunity to interact with investors who look for the entrepreneurial spirit and next billion dollar ventures. These investors and brands, both were amazed at the level of work and type of entrepreneurial ventures coming out of Pakistan. We got a chance to exthelocal hospitality, cuisine and interact with the locals. While doing that, it came to our observation that while the region and culture might be different than that of Pakistan, their problems are quite similar. This meant that any venture based in Pakistan has a really great chance to expand into the global market provided it can adapt to local culture. Overall it was a great experience interacting with investors, global players, incubators and other startups like us.

Abdullah

Co founder Mapalytics

VEON (formerly VimpelCom), parent company of JAZZ, selected 5 teams/startups from Pakistan to represent NIC at 4YFN (4 Years From Now)-Mobile World Congress 2017, Barcelona. Mapalytics was one of those five startups. Mapalytics has expertise in 3D scanning and Virtual Reality. We make aesthetically pleasing interactive scaled 3D models and Virtual Tours of objects and sites. We are focused on preserving historical sites digitally, so in case of any damage to the site we can accurately recreate the sites using our scaled 3D models. These models are very important for Heritage preservation and Tourism promotion. Our content has huge potential for e-learning and interactive historical learnings.

It was the first opportunity for us to showcase our product in the international market. The scale of the event was massive with hundreds of potential clients, partners, investors and media personnel visiting the stall. At 4YFN we got the opportunity to showcase our work and learned from what other companies are doing. We were interviewed by multiple online and print media firms including Wall Street Journal. We are working in the domain of digital mapping and virtual reality. The greatest achievement and confidence booster was when the companies working in the same domains were amazed by the level of detail our models have and they wanted to use our product.

Our Experience at National Incubation Centre by team Lets Innovate

Its been an amazing start here at NIC Islamabad, We as a team, over the past few months have gone through a clear positive transformation. From mentorship to facilities, NIC was the missing piece of our growth puzzle. After joining NIC, we have had valuable feedback about our product HELLI, mentors and their ability to critically evaluate our processes has helped us improve and create value from within our start-up. We were recently awarded a grant by the US embassy as part of the First Global Initiative, it goes without saying that team at NIC was the catalyst in making this happen. Over the past few months we have participated in countless mentorship sessions, we were runner ups at the Start Up Cup and have been interviewed by multiple local and global news firms and potential investors. NIC was central to all of this and so far, its been a phenomenal experience.



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Leading the 4G revolution

By Mr. Liu Dianfeng
Chairman of the board &
Chief Executive Officer of
China Mobile Pakistan



The Pakistani Telecommunications market is evolving very quickly. With the advent of 3G and 4G and tech start-ups accelerating the pace of advancement, we are closer to furthering the cause of a "Digital Pakistan" than ever before. The important and critical milestones that we aim to achieve during this period will go a long way in developing a sustainable ecosystem for the Pakistani telecommunications market to thrive in the new digitized age.

From its launch in 2008, Zong 4G has committed itself to acceler-

cell sites.

It is important to understand what 4G is. 4G is the connection to life, connection to a better future, a new and improved lifestyle for every Pakistani. It is a step into a

ket at record speed, helping Pakistan's commerce industry directly. For our doctors, 4G is about how to treat our patients with most advanced technology and the latest healthcare solutions. For the media, 4G is about keeping our nation up to date on the latest happenings live from around the world. 4G helps everyone, to get information quicker, to be able to compete faster, to improve and progress more efficiently, provide new solutions and learn new ways of a better and prosperous lifestyle for every Pakistani.

Under the Belt and Road initiative and with the help of China Mobile Communications Corporation, for areas in Pakistan where access to fixed line broadband connections is limited, our 4G services will bring super-high-speed con-

nectivity for the first time and help them compete on a global scale.

So far, we have invested over PKR 250 Billion in the Pakistani Telecommunications market which has served to bolster multiple aspects of the Pakistani businesses, household and governmental functioning. We have chosen to invest in Pakistan for a very simple reason: we realize that technology is an engine for economic growth, one that will help existing businesses to grow while encouraging investment from overseas.

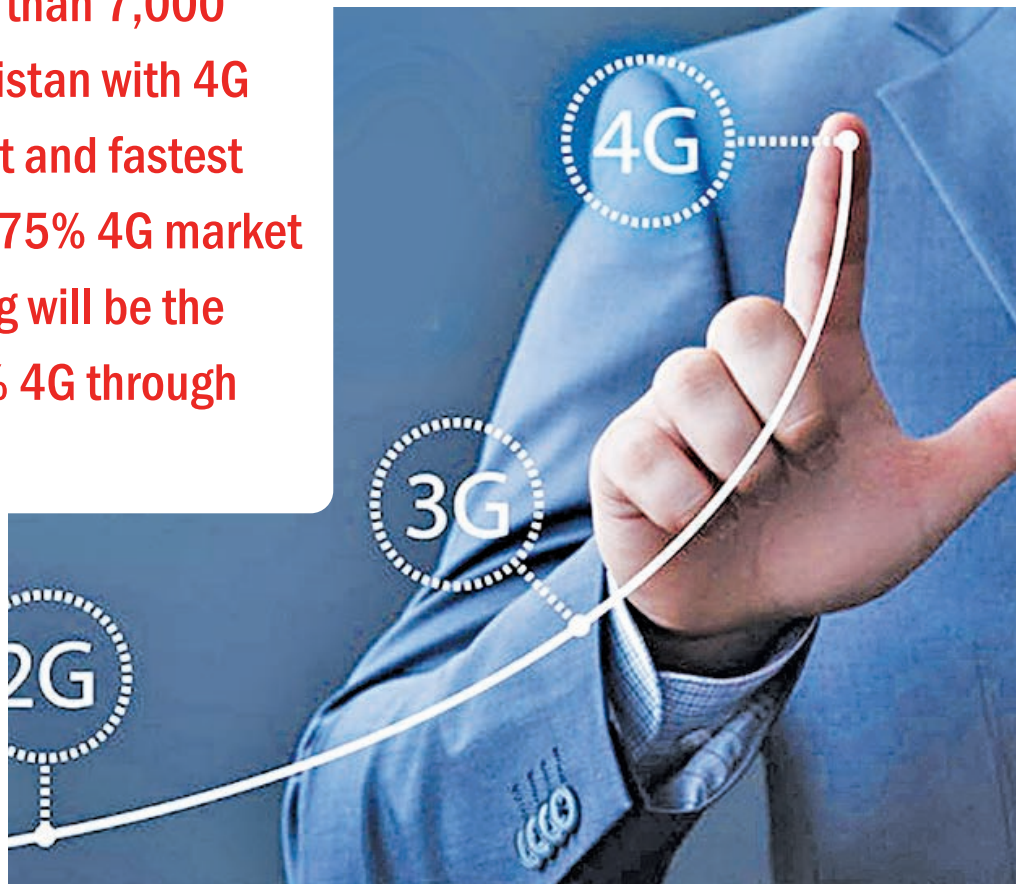
We are happy and excited to have announced our future plans for 2017 in upgrading all our 2G and 3G sites to 4G within 2017 and have more and more innovative and intelligent solutions for our subscribers here in Pakistan, and continue to invest in our network to expand our 4G coverage throughout the country and connect Pakistan with the rest of the world from the most remote areas possible. This will enhance our Pakistani

people's ability to lead a better, quicker, faster and more connected "4G life", which will be the most innovative way of education, healthcare, social reform and creativity. We will leverage China Mobile Communications Corporation's 4G knowledge and research and implement this vision in Pakistan.

Other than connectivity, we have also announced our corporate social responsibility program for Pakistan with a strong commitment to use our 4G technology to make the life of our Pakistani people easier, faster and better with the best quality network. As our commitment to the future of Pakistani people, Zong and Lahore University of Management Sciences (LUMS) have come together to enter into a strategic partnership by striking a Memorandum of Understanding (MoU) for the development of a state-of-the-art 4G research lab at the university. At a school in Islamabad for street children, we have setup a 4G internet

We are happy and excited that we have announced our future plans of 2017 for upgrading all our 2G and 3G sites to 4G within 2017 and have more and more innovative and intelligent solutions for our subscribers here in Pakistan and continue to invest in our network to expand our 4G coverage throughout the country and connect Pakistan with the rest of the world, starting from the most remote areas possible.

This will enhance our Pakistani people's ability to lead a better, quicker, faster and more connected "4G life" which will be the most innovative way of education, healthcare, social reform and creativity. We will leverage China Mobile Communications Corporation's 4G knowledge and research and implement in Pakistan.



ating the pace of development in the country through technological innovation. This is substantiated by the fact that Zong 4G was the first 4G cellular mobile operator of the country and currently, more than 7,000 sites power over 300 cities of Pakistan with 4G services. Today, Zong is the largest and fastest 4G Network of the country, with a 75% 4G market share. By the end of this year, Zong will be the first and only operator to be 100% 4G through an upgrade of all our

faster, more advanced, more innovative horizon for our country. For our youth, it is a bright future with unlimited knowledge instantly, connected with 4G, reshaping the country's future. For our professionals, 4G is innovation beyond limits to advance their capability and learn new and modern ways of efficiency to be more productive in their work. For our businessmen, it is a faster way of doing their business and make their products available in the international mar-

Zong 4G was the first 4G cellular mobile operator of the country and currently, more than 7,000 sites power over 300 cities of Pakistan with 4G services. Today, Zong is the largest and fastest 4G Network of the country, with a 75% 4G market share. By the end of this year, Zong will be the first and only operator to be 100% 4G through an upgrade of all our cell sites

Achievement during past four years by NTC

-the only Telecom and ICT service provider of Public Sector

National Telecommunication Corporation (NTC) created under the Act of Parliament on Jan 1, 1996 with the mandate to operate, build and maintain telecom systems and provide services to the Federal Government, Provincial governments, defence projects, governmental organizations and institutions. The Corporation faced critical challenges to sustain itself but with the sincere dedications of its staff and management, made it a success story in the Public Sector.

NTC was vested with analogue systems including Microwave and Co-axial Cable network and few (five) analogue and digital exchanges in 1996-97. Manpower vested from PTC was also not properly trained to plan and develop infrastructure with the emerging technologies of that time. The Analog Microwave system deployed in 1974 had become obsolete when handed over to NTC in 1996-7. The new transmission systems based on Fiber Optic was deployed by PTC in 1992-94 along the main and alternate routes was given to PTCL along with the Submarines Cable network terminated at Karachi. The Analogue Transmission systems were not capable to meet NTC requirement so Government on the request of NTC issued instructions to PTCL Management for allocation of one Fiber pair on National Backbone of the 9 pairs Optical Fiber Cable. Hence on acquisition pair in the long haul OF cable from Peshawar to Karachi was equipped with 622 Mbps SDH systems in the year 2001-2. This STM-4 system, initially, was sufficient to provide connectivity of its digital exchanges and establishment of data communication network, however, with the passage of time; it was saturated in almost 5-7 years. As such this STM-4 was upgraded with 10 G (STM-64) on DWDM based system in 2010.

With the advent of NGN Technology, NTC initiated replacement and migration of the TDM based EWSD switches with Next Generation Network (NGN). As by the time, it became mandatory to replace these exchanges with NGN based IP switches being flexible in provision of customized and triple play services. Accordingly, NTC initiated the project TDM to IP migration in 2013-14 with deployment of Soft switches and Multi Services Access Gateways (MSAGs) on a very fast track. The project plan and design chalked out with Geographical redundancy to avoid any untoward situation. As per international practice NTC prepared plan for TDM to IP (NGN) migration in a phased manner and during the past 2013-17, more than 70 % of network has been migrated. The migration in a phased manner is implemented to utilize the available resources to its maximum/optimum level and keep the com-



Engr. Miraj Gul
Director General (Technical) NTC

munication intact in a redundant mode during migration.

It is also to add that during the period 2013-17, past four years, the Annual Development Plan implementation progress remained more than 85 % and in recent FY it will be 100%, which is a record compared to the period 1996-2013. In the past the progress recorded per year is not more than 30 %.

NTC was not vested with any Data Network systems; however, a Multi Services Data Network (MSDN) was deployed in 2003. This small scale MSDN platform made it possible to provide Intranet, e-mail, Co-location, virtual private networking, video conferencing, Radio/Networking solution, DSL and other customized data services to its valued subscribers. This platform was required to be upgraded and updated with time but no practical steps were taken till 2013. From FY 2013-14, continuous process of up gradation with introduction of new computing machines, storages enhancement and latest security tools and gadgets deployment was initiated. A plan for new Tier-III cloud Data Centre was prepared in 2014-15 for meeting growing demand of data services specifically for government and public sector. This was required to help implementation of the goal of "Digital Pakistan".

NTC prepared and implemented this plan of National Data Centre through own resources in a record time of 4-5 months which was inaugurated in August 2016 by the honourable Minister of State for IT. This Data Centre is cloud based Tier-III compliant capable to provide resources in a secure environment. The cloud computing allows organizations to avoid up-front infrastructure costs (e.g., purchasing servers). As well, it enables organizations to focus on their core businesses instead of spending time and money on computer infrastructure. Cloud computing allows enterprises to

get their applications up and running faster, with improved manageability and less maintenance, and enables information technology (IT) teams to more rapidly adjust resources to meet fluctuating and unpredictable business demand. Cloud providers typically use a "pay as you go" model. Regarding Service models of Cloud Data Centre, NIST has defined three models of services including Infrastructure as a Service (IaaS), Platform as a Service (PaaS) and Software as a Service (SaaS).

Access to the Data Center requires network deployment; NTC has expanded its network to cover more districts and tehsils. Over a period of twenty years, NTC is able to reach to 87 locations, including 35 increases in 2013-2017 and this count shall cross hundred in the coming two to three years.

The present Government helped in opening new avenues for the Telecom Sector as per Telecom Policy. NTC signed agreements with other mobile operators on Public Private Partnership for provision of 3G/4G to NTC customers. NTC is also first in the country to introduce new technologies such as Point to Point (P2P), Machine to Machine (M2M) for provision of services in remote areas where NTC infrastructure is not available.

In addition NTC has also signed a Service Provider Licensing Agreement (SPLA), with Microsoft where under Microsoft products/applications would be hosted at NTC's cloud National Data Center and users would purchase it on line as per their requirement.

Another highly important and strategic achievement on the part of NTC is the establishment of Registry in 2016 for Country Code Top Level Domain (ccTLD) for Urdu and other local languages with the support of Ministry of IT. This will help promotion of National Language and other local languages through internet.

Regarding future plans, NTC has planned to establish Optical Fiber based National Backbone along CPEC Motorways/Highways and Submarines Cable network landing Station at Gwadar for meeting Public Sector national and international connectivity in a secure environment. This will also help facilitate all operators with Broadband at cheaper rates on NTC's system spare capacity for having a level playing field required for the ICT sector growth.

All these initiatives and achievements during 2013-2017 has helped NTC to sustain its existence, loss converted into profit, and became able to further enhance its network and strengthen its muscle in this challenging environment of technological evolution and demand of security.

NATIONAL TELECOMMUNICATION CORPORATION
Official ICT Service Provider

In step with the Government
Leading the Nation to 'Digital Pakistan'

Committed to Contributing towards the implementation of the Prime Minister's vision of "Digital Pakistan", the National Telecommunication Corporation (NTC) has made remarkable growth in ICT while facilitating the Government and Public Sector Organizations during 2013-17.

NTC's Performance at a Glance:

- 70 % Deployment of (NGN)
- Establishment of Tier-III Cloud based National Data Center in a record time of only five months
- Establishment of Country Code Top Level Domain/IDN (ccTLD)

حکومت. پاکستان تعلیم. پاکستان ادارہ. پاکستان

- Record Expansion of new NGN based exchanges with an overall growth of 114 % during 2013-17
- Overall increase of exchanges in main cities ---59 % in past four years
- Broadband growth during 2013-17---- 64 %
- Completion of Annual Development Plan ---87 % in FY 2015-16 and 100 % in 2016-17
- NTC is the first to introduce "NTC Go Smart", Machine 2 Machine (M 2 M), and Point 2 Point (P2P) in the country
- NTC Signed agreements with Mobile Operators for provision of 3G/4G under Public Private Partnership (PPP)
- Due to record technical growth in ICT sector, NTC converted its financial loss into profit which is a record in Public Sector.**

PID0052716

www.ntc.org.pk



Pakistan Telecommunication Authority



Mobile

WE ARE PAKISTAN

Q MOBILE IS PROUD TO SAY THAT IT BELONGS TO A CULTURALLY RICH COUNTRY, PAKISTAN. WE WERE ONE OF THE FIRST TO BELIEVE THAT WE CAN PRODUCE A LOCAL TECHNOLOGY BRAND THAT CAN STAND TALL WITH THE INFAMOUS INTERNATIONAL GIANTS. WE TOOK THAT RISK BECAUSE WE BELIEVED IN YOU. THANKS TO THE ENTIRE NATION FOR MAKING US THE NO.1 SMARTPHONE BRAND IN PAKISTAN. WE ARE PAKISTAN'S PREMIER QUALITY BRAND THAT OFFERS AFFORDABILITY AND RELIABILITY. TODAY, WE NOT ONLY FACILITATE OUR AUDIENCE BUT PROVIDE NUMEROUS EMPLOYMENT OPPORTUNITIES. WE ARE ONE OF THE HIGHEST TAX PAYING COMPANIES IN TECHNOLOGY SECTOR. MORE THAN A DECADE WE HAVE BEEN TRYING RELENTLESSLY TO MAKE OUR COUNTRY MORE AND MORE TECHNOLOGICALLY ADVANCED. WE BELIEVE, TOGETHER WE CAN GO LEAPS AND BOUNDS.

OPPO is winning hearts of consumers through its revolutionary Selfie technology and stunning designs

OPPO, founded in 2004, is a leading global technology brand, dedicated to providing pioneer products to consumers across Asia, Africa, Europe and Oceania, with a presence in 28 global markets. According to a leading market research company GFK, OPPO is the No.1 Smartphone in China and ranks in the top 2 in India in terms of market share. OPPO has also been ranked the No.4 Smartphone brand for the past two years in terms of shipment volume, as per an IDC report.



OPPO, since its inception, has been devoted to young consumers and has focused on launching the best Camera Phones. For the past 10 years, OPPO has led through technological breakthroughs in terms of mobile photography; it started an era of selfie beautification, creatively brought out the world's first motorized rotating camera and Ultra HD feature, was the first to launch "Selfie Expert" with 16MP

front camera in F series, which initiated a selfie trend in the industry. OPPO now provides excellent photography experience to over 100 million youngsters around the world.

OPPO entered the Pakistani market in June 2014 with the launch of its flagship device called OPPO Find 7. OPPO aims to utilize its globally renowned technological superiority and innovation to bring a diverse product portfolio for Pakistani buyers; and has launched more than 20 models in the local market in the past 3 years. The product portfolio

includes OPPO Find 7, OPPO N3, OPPO R7 Series, and now the focus is on its camera phone, especially Selfie Expert F series.

In order to better connect with the consumers in Pakistan, OPPO is the official global partner of International Cricket Council (ICC) since 2016 and as a sign of its commitment to support Cricket in Pakistan, OPPO by having an established long-term affiliation with the International Cricket Council will bring more values and create a platform to communicate with the youth and provide them with a source of complete entertainment.

OPPO also joined hands with

Pakistan's leading fashion designer HSY by appointing him as the Brand partner of OPPO to launch its Classic Black F1s Selfie Expert in November 2016 and creating a new trend in the fashion industry of Pakistan.

"At OPPO, our customers have always been our top priority and through our innovative products with groundbreaking technology we have made a promise to deliver and meet their requirements. With the help of our customers' support and feedback we are given the opportunity to deliver that promise by offering the ultimate smartphone that allows you to create memories from your

dual selfie camera that are worth capturing" shares George Long, CEO of OPPO Pakistan.

OPPO's alliances with the leading international partners ensure that OPPO has the latest and best hardware available. With a unique independent R&D capacity, the company designs, develops, manufactures, markets and sells its products itself with full control over the entire supply chain from factories to the hands of customers. OPPO is dedicated to providing excellent services to consumers.

Committed to Pakistani market, OPPO has sales offices and networks in all major cities

across Pakistan and employs more than 3,000 staff. OPPO has quickly proved itself in the market with its intense attention to details and sales volume in the local market has increased 20 times, compared to February 2016.

Each OPPO product encompasses a carefully selected array of attributes to specifically cater for users, combining impressive features with elegant

cent 'Selfie Experts' F-series. Our brand has been growing rapidly across Pakistan and around the world. The dual selfie camera F3 Plus will mark a new 'Group Selfie' trend and reinforce our position as the Selfie Expert," said George Long, CEO of OPPO Pakistan.

OPPO kick started the 'Group Selfie' trend in 2017 by launching the new Selfie Expert F3 Plus. The F3 Plus features the brand's first dual front selfie camera including a first-ever 120-degree wide-angle Group Selfie Camera. Following the F3 Plus, the Selfie Expert F3 was launched targeting the mid-range market. The F3 also features a dual selfie camera - a 16-megapixel Selfie camera for individual selfies and an ultra wide-angle 8MP camera for group selfie.

OPPO, with its passion for design and commitment to new technologies, envisions enabling the youth of Pakistan and provide them with avenues for growth and progress. OPPO will continue to facilitate Pakistanis in staying connected, and to pursue opportunities for social and developmental advances.



designs. The 'Selfie Experts' F-series models are high-end smartphones that are efficient, long-lasting, secure and beautiful, addressing today's highly-demanding mobile-first world.

"OPPO is an industry leader in the Selfie Revolution with the re-

oppo Camera Phone

F3 | F3 Plus Selfie Expert

Cheer For Cricket With Selfie Expert



ICC
CHAMPIONS
TROPHY
ENGLAND & WALES 2017



Starting From

Rs. 34,899

Pakistan Software Export Board Unleashing Pakistan's IT potential globally

Pakistan Software Export Board (PSEB) is a body under Ministry of IT with the mandate to promote and to grow Pakistan's IT exports. For this purpose, PSEB has different initiatives for international marketing, infrastructure development, and capacity building of IT companies and graduates. The government realizes that it has an important role in terms of providing a conducive environment to IT industry through infrastructure and HR development. Government's incentives for IT industry include zero income tax on IT exports till June 2019, 100% equity ownership allowed to foreign investors, 100% repatriation of capital and dividends allowed, and 7-year tax holiday for venture capital funds. PSEB's core functions are summarized below:

- * Undertake research and study regarding the state of Pakistan's IT sector, and propose strategies for sustainable development of IT industry.
- * Analyze and take measures which have the potential of enhancing exports of software and IT services from Pakistan.
- * Register IT companies

space cost for them.

* Provide protocol, hosting and matchmaking facilities for foreign delegates and investors.

* Establish a web portal for customers, investors and companies, and prepare and disseminate marketing collateral.

* Build capacity of IT companies by subsidizing costs of quality, security and other international certifications.

* Build capacity of IT graduates by sponsoring their internship and training in different IT companies.

Quick facts about Pakistan's IT industry

Pakistan's IT sector is one of the few segments in Pakistan's economy that has demonstrated positive and consistent year on year growth in exports. Pakistan has a vibrant and growing IT industry with more than 2500 IT companies and more than 200,000 IT professionals with education and experience in latest IT tools and technologies. Pakistani IT companies are providing services to many large multinationals as their clients. Many international IT firms have established offices in Pakistan including IBM(r), Cisco(r), Microsoft(r), Oracle(r), SAP(r), Teradata(r), Mentor Graphics(r), Bent-



lenor(r), and many others. Pakistani IT companies have received recognition and awards at International events such as Asia Pacific Information and Communication Technology Awards (APICTA). Since 2010, Pakistan has won over 39 gold and silver awards at APICTA in different categories including e-learning, e-health,

have grown by 96% over the last four years and are estimated to have crossed \$2.9 billion a year at present including exports generated by IT companies and freelancers. Total revenue of IT industry including exports and domestic revenue is estimated to be around \$3.4 billion a year at present. Every possible step is being

key international markets.

Around \$400 million was invested in different Pakistani technology startups in 2015-16 including Daraz.pk, Careem, Zameen.com, etc. demonstrating the confidence of investors in Pakistan's tech startups. At the World Economic Forum in Davos, Switzerland in January 2017, Devin Wenig,

istan to build an e-commerce platform to further promote online business ventures. In May 2017, Alibaba signed an MoU with Government of Pakistan for establishing its e-commerce operations in Pakistan.

International marketing

Pakistan Software Export Board actively facilitates new business development for Pakistani IT companies. Significant subsidies are provided to IT companies to enable them to exhibit in key International IT exhibitions. Participation in PSEB subsidized international events has enabled Pakistani IT companies to generate valuable leads and revenue in addition to improving Pakistan's perception as a viable and feasible destination for outsourcing.

Since 2008, nearly 300 IT companies have been facilitated by PSEB through subsidies to exhibit in local and international IT exhibitions. Many companies have generated good leads from these international exhibitions which convert to outsourcing, partnership, or investment opportunities later. During 2016-17, PSEB participated in five interna-

tional exhibitions with IT companies which generated more than thousand leads. Many MoUs have been signed by IT companies through participation in international exhibitions as Pakistani IT companies seek not only customers but also look for opportunities for collaboration and partnership. Many contracts ranging from hundred thousand dollars to half a million dollars have been generated by IT companies through participation in subsidized international exhibitions.

PSEB supports and encourages outbound delegations comprising of local IT industry representatives to create linkages with foreign IT companies. These delegations have represented Pakistan's IT industry in many important markets such as the USA, UK, Canada, China and Malaysia over the past decade. In

PSEB has organized IT delegations to United Kingdom and Canada.

PSEB actively supports all local initiatives intended to bolster IT industry and in this regard facilitates participation of local IT companies in local trade fairs and events. Local exhibitions provide an ideal platform for Software and Information Technology firms to showcase their respective expertise, interact with prospective customers and other stakeholders. In 2016-17, PSEB and member companies participated in seven local IT exhibitions which included ITCN Karachi, BYTES Islamabad, IDEAS Expo and RCCI Awards. PSEB also sponsored different industry events including PASHA ICT

Future plans

During 2016-17, IT remittances as reported by State Bank of Pakistan have grown by 16.4% over previous year.

This growth rate is higher than many other exports sectors of Pakistan making IT one of the fastest growing export sectors of Pakistan. For 2017-18, PSEB's goal is to grow IT remittances by 20-25%. For this purpose, PSEB will hold seminars in different cities to educate companies and freelancers to report IT remittances correctly. PSEB will also participate in different international exhibitions and delegations with IT companies in relevant countries to generate new leads and business for these companies. Based on interest from foreign customers, PSEB might also organize an international IT conference in Pakistan. PSEB will also recognize the top IT exporters of Pakistan through its annual awards ceremony. PSEB will certify more IT companies in CMMI, ISO 27001, and ISO 20000. PSEB will also place 1,500 IT graduates as interns at different companies. For new IT park in Islamabad, design consultancy will be completed followed by selection of contractor and ground breaking. The work will also start on feasibility study for a second IT park on PSEB's land in Karachi.

Awards, Lahore and Telecom 2016, Islamabad. PSEB also organized the "PSEB IT Awards 2016" to recognize the top IT exporters of Pakistan.



Infrastructure development

In the short term, PSEB has established 13 Software Technology Parks (STPs) in Islamabad, Rawalpindi, Lahore and Karachi by signing MoUs with owners of these buildings to provide office space to IT companies. At present, 96 IT companies are operating in these STPs. In the long term, PSEB has leased lands in Islamabad, Karachi and Lahore to build new IT parks. In Islamabad, PSEB will be building a new IT park on 14.9 acres under financing from Korea Eximbank through the Economic Development Cooperation Fund (EDCF). The IT park would accommodate between 100-120 companies and is expected to be completed by 2020. PSEB is also planning financing for more IT parks on its land in Karachi and Lahore.

in Pakistan and extend maximum facilitation to them.

* Renovate buildings with sufficient space for IT companies to Software Technology Parks (STPs) after signing agreements with their landlords.

* Provide internet service at affordable rates to IT companies inside STPs.

* Plan, finance and build new state of the art Software Technology Parks (STPs) in Pakistan.

* Arrange for Pakistan's IT companies to exhibit at domestic and international IT events to generate new leads and new opportunities for business by subsidizing

ley(r), S&P Global(r), Cikkum(r) and many others indicating strong confidence of the international players in the competence of Pakistan's IT workforce and encouraging investment policies of the government.

Pakistani IT companies have world's largest companies amongst their clients including Halliburton(r), Motorola(r), GE(r), BMW(r), Toyota(r), Daimler Chrysler(r), AT&T(r), Vodafone(r), e-Bay(r), Pepsi(r), Deutsche Telecom(r), DHL(r), KPMG(r), ABN Amro(r), NYSE(r), British Petroleum(r), Petronas(r), Caltex(r), Sears(r), Te-

e-government, security, supply chain management, startup, media, and financial applications. This is a testament to the immense IT potential of Pakistan.

Pakistan's IT exports - A stellar growth

Pakistan's IT exports

extended to enhance Pakistan's IT exports which includes enhanced participation in international exhibitions, outbound and inbound delegations, conferences and seminars. Enhanced focus is also being placed on social media and other media channels to enhance Pakistan's IT image in

CEO of eBay said, "It's (Pakistan) the fastest growing (e-commerce) market we have around the world. Anywhere where wealth is growing and technology is being adopted, e-commerce is being adopted like crazy." Likewise, Jack Ma, Chairman Alibaba Group expressed keen interest in investing in Pak-



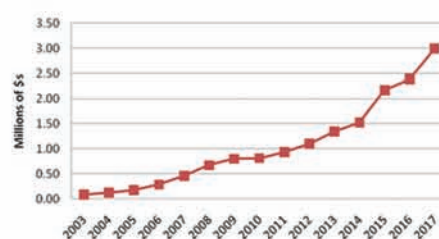
Ministry of Information Technology
Government of Pakistan



PAKISTAN SOFTWARE EXPORT BOARD

Enabling the IT sector for a prosperous Pakistan under the visionary leadership of
Prime Minister Muhammad Nawaz Sharif and IT Minister Madam Anusha Rahman

Pakistan's IT Exports



EXPORTS GROWTH

- 96% growth in IT remittances during last 4 years as reported by SBP
- Fastest growing exports sector of Pakistan
- IT exports estimates of \$3 billion a year
- PSEB Awards 2016 to recognize top IT exporters and startups
- 91% growth in IT company registrations since 2013

INDUSTRY ADVOCACY

- Industry meet ups with federal and provincial authorities to resolve taxation matters
- Addition of industry experts to National Curriculum Review Committee on IT

INFRASTRUCTURE DEVELOPMENT

- Loan agreement signed with Korea Eximbank for a new state-of-the-art IT park in Islamabad
- Feasibility studies being planned for new IT parks in Karachi and Lahore
- Data node operations for providing bandwidth to IT companies inside software parks



Web: www.pseb.org.pk

INTERNATIONAL MARKETING

- Documentary on Pakistan's IT industry to project Pakistan as an IT powerhouse
- Participation in 16 international exhibitions and delegations with IT companies
- More than thousand leads generated with some converting to deals

CAPACITY BUILDING OF IT INDUSTRY

- Certification of 80 IT companies in CMMI, ISO 27001, and ISO 20000 over five years
- Placement of 2300 IT graduates as interns in IT companies and IT departments. 60% got jobs after completion of internship

Register with PSEB today to join
"The Rising Tide"
at www.pseb.org.pk/registration
Email: info@pseb.org.pk

Around \$400 million was invested in different Pakistani technology startups in 2015-16 including Daraz.pk, Careem, Zameen.com, etc. demonstrating the confidence of investors in Pakistan's tech startups. At the World Economic Forum in Davos, Switzerland in January 2017, Devin Wenig, CEO of eBay said, "It's (Pakistan) the fastest growing (e-commerce) market we have around the world. Anywhere where wealth is growing and technology is being adopted, e-commerce is being adopted like crazy." Likewise, Jack Ma, Chairman Alibaba Group expressed keen interest in investing in Pakistan to build an e-commerce platform to further promote online business ventures. In May 2017, Alibaba signed an MoU with Government of Pakistan for establishing its e-commerce operations in Pakistan.

Megaplus - Master IT solution providers in a competitive market

Megaplus is one of the largest IT solution providers in Pakistan with extremely diversified business model, operating since 1994. With geographic presence in Pakistan, Afghanistan, UAE, Kenya, Malaysia and Singapore, Megaplus is well positioned

to look after and cater to various kinds of customer requirements and solutions. There are primarily four Business Units (BU) in Megaplus with professional and capable teams, looking after the needs of our esteemed and valuable customers. First BU is our core business, where we work as a System Integrator (SI) and

manage requirements of end customers. In this BU we have executed lot of IT projects successfully including the most recent 'Shahbaz Sharif 115,000 Laptop Scheme' of 2017, which is executed and completed in a record period of 90 days. We are able to close high value projects in time for our customers from multiple verti-

cals. Our passion of delivering results for you as a client is the key where we put our expertise to exceed your expectations. Megaplus is the largest and oldest partner of Dell EMC and has been given the highest status of 'titanium' partner for Dell EMC. We are also tier one partner of Lenovo, Microsoft CSP (Cloud Solution Provider)



Asim Bukhari
CEO Megaplus Pakistan

and HP MPS (Managed Print Services) where we cater printing needs and requirements of our customers and provide customised printing solutions at a fraction of a cost compared to traditional photocopiers through recently introduced HP A3 & A4 size printers/copiers based on HP's latest PageWide technology. We also work closely on Cisco networking products and solutions, Polycom audio and video conferencing solutions, HP enterprise products, VMware virtualisation solutions, Huawei networking & data center solutions and Kaspersky & Sonicwall security solutions.

In second business unit we are the distributors for Dell Consumer & Commercial PC products, HP PC's/Notebooks, Inkjet & Laser Printers & their supplies, LENOVO PC's/Notebooks, tablets, Microsoft OEM & Volume License (VL) software & EnGenius wireless network products, where we stock and sell these products to various

resellers all over Pakistan through a team of professional Channel Account Managers.

Third business unit in Megaplus is called 'Power Control & Communication' (PCC) where we are the distributors for Schneider Electric low throughout voltage products including circuit breakers, contactors, ACB, MCB, connectors, MCCB etc., Honeywell for fire alarm & fire detection systems, security & surveillance, and home automation & VIRDI - a leading Korean brand in Biometric (finger print & face recognition) & Access Control systems.

Our fourth BU deals in application development where we specialise in healthcare. Megaplus has its own in-house developed software - HACIMS (Hospital & Clinical Information Management System) in

which we automate end to end operations of hospitals. HACIMS incorporates HL7 that provides standard for the exchange of data among worldwide healthcare computing applications. Several other standards are also used in conjunction with HL7 such as ICD-10 disease codes, ICD-10 procedure codes, LOINC, DICOM. HACIMS is offered on-premise as well as cloud hosted solution. We have over 30 modules and they are deployed in various hospitals throughout Pakistan running successfully.

Our vision and mission in Megaplus is to be the first choice as the technology solutions provider for its clients in different territories where Megaplus is operating. Our exceptional team will make this happen by delivering above par solutions backed by innovative, consistent and

extraordinary quality services. We deliver innovative, efficient and state-of-the-art IT services to businesses. Our team meets and exceeds customer's expectations by keeping customers interest first and foremost.

Our expertise surpasses the norm of enterprise world, where our experts have in-depth knowledge and experience of delivering complex solutions, which have helped different organisations adapt to rapidly evolving industry trends and technology integration.

Megaplus understands the pressures that today's management faces to increase customer service levels while effectively controlling costs and keeping up with the latest technology trends - and we are here to help every step of the way.

RELIABLE -- Y
CONNECTIVE -- Y
SECURE -- Y
PROSPER -- Y

NOTHING IS COMPLETE WITHOUT IT

PROGRESS IN TODAY'S FAST MOVING BUSINESS WORLD IS UNTHINKABLE WITHOUT INFORMATION TECHNOLOGY. MEGAPLUS, PAKISTAN'S LEADING INFORMATION TECHNOLOGY PROVIDER OFFERS YOU A BOUQUET OF SPECIALIZED IT PRODUCTS AND SERVICES TO DESIGN, IMPLEMENT AND SUPPORT YOUR IT INFRASTRUCTURE IN ORDER FOR YOU TO CHOOSE THE MOST SUITABLE SOLUTIONS FOR YOUR COMPANY AND MAXIMIZE THE OVERALL BUSINESS EFFICIENCY AND PRODUCTIVITY. SO, NO NEED TO WORRY ANYMORE, JUST GO FOR IT.

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Kwick High Tech Solutions for smart living

IoT (Internet of Things) is the future technology. Exquisiteness of this expertise is that machine shall interact or communicate with another machine to perform certain works. Likewise, now the country's administration is switching themselves towards smart and safe cities. With this conception and hypothesis, we can track each and every movement which can also be reordered for future reference. Under this development, the purpose is to assimilate transmission equipment and Internet of Things (IoT) knowledge in a reliable manner to accomplish a city's resources.

We have made a successful deployment for the issuance and SIM re-verification project Biometric Verification System (BVS) (initiated on the directives of PTA) in Pakistan. We have clinched a maximum of market share. We have provided front, mid & end tier solutions and a complete package to the telecom sector. Besides the project of issuance and re-verification of SIMs; we have also provided different menus & options for their Value Added Services



Mohammad Waseem Rafi
Chief Executive Officer
Kwick High Tech & Solutions (Pvt) Ltd.

(VAS) which have proved to be a great success in this project.

Besides SIM manufacturing, we are also dedicated professionals in biometric & IT solutions. We have our own luminous software development team, a group of dedicated hardware engineers, database administrators & network administrators for the server end. We have a knack and superiority for providing solutions to our customers according to their needs and requirements. We have a committed customer service staff

team, who are dedicated to provide the best services to their customers. We have an exclusive division for the Smart Card production. Our constituent is well-equipped to manufacture ATM Cards, Debit Cards, & Loyalty Cards etc.

Kwick High Tech & Solutions (Pvt) Limited is undoubtedly a ground-breaking organisation of Pakistan where they are providing comprehensive consultancy to their customers and tailor-made solution according to their needs and requirements. They are the pioneers in SIM and Plastic Card manufacturing in Pakistan.

They have developed solutions for banking & financial sector too. For banking and financial sector, they have developed branchless banking solutions and mobile wallet. Furthermore, they have developed biometric account opening modules which have been deployed in various banks in Pakistan. In order to counter AML & CFT, they have developed complete counter transactions module. A mobile wallet is a way to carry your credit card or debit card information in a digital form on your mobile device. Instead of using your physical plastic card to make purchases, you can pay with your smart phone or tablet. Here's an overview of the benefits of mobile wallets and how mobile wallet services generally work to make in-store purchases. Just hold your device to pay and make quick purchases in mobile apps. No need to enter your card info. An ideal solution for e-commerce and online shopping. They have further developed many desktop applications for banking sector in which biometric involvement played a key role for opening an account. The biometric helps to authenticate the record of the customer from the national database. They have used their solutions successfully for the disbursement of social payments too.

Now they are developing Enterprise Resource Planning (ERP) which shall be catering both small and medium enterprises along with corporate enterprises. This ERP shall be catering to finance, human resource, sales & distribution, inventory, commercial in which customer profiling and their record retention along with Participated Tender updation. Enterprise Resource Planning expounds the deliberation that it should have a large-scale query and data handling competency and capacity. Normally ERPs are cogitated to gratify large entities only but their ERP is designed for modern businesses, both large and small along with medium enterprises.

They, along with their wide range of biometric product line, have developed a handheld solution which is integrated with biometric scanner

(Finger, iris, face detection), and Payment Secure Access Module (PSAM), connectivity with wifi, bluetooth, 2G/3G. This solution is developed specially to those entities which have the aim to provide 'one step ahead' service to their customers. This artefact is very widespread in different industries as it is a handy device and easy to carry by the field staff. Its supplementary countenance of a battery pack installed in it, substantiate its effectiveness further. The machine is a perfect solution for countering terrorism and for board security management. All incoming immigrant's data shall be stored and verified through this solution. Its earlier version was already being depleted for the registration of Internally Displaced Persons. This solution is fully proficient and accomplished for the disbursement of social payments in a very translucent manner.

This device can be utilised as a high quality time and attendance management system. This solution is copiously accomplished to process substance testimonies. This solution is rugged & water & dust resistant. They have implemented their own developed security algorithms. Now in terms of smart & safe cities, we have come up with different solutions. In connection with wide multiplicity of smart and safe cities which are amalgamated with their IoT products, these artefacts are now not the extravagance but have become inevitability of the advent e.on. The smart city challenge will address how emergent and evolving transportation data, technologies, and applications can be integrated with prevailing systems in a city to address transportation challenges. This shall exhibit how advanced data and Intelligent Transportation Systems (ITS) technologies and applications can be used to reduce congestion, keep travelers safe, protect the environment, respond to climate change, connect underserved communities, and support economic vitality.

They are providing a wide range of products along with their solutions. These include:

- * SIM, Smart, Banking and Plastic Cards Manufacturing solutions
- * Biometrics (in Iris, Finger Print etc.) solutions
- * Handheld
- * Desktop
- * Bluetooth
- * Middleware solutions.
- * Branchless banking & mobile wallet
- * ERP
- * Fleet management
- * Asset tracking
- * Smart building
- * Supply chain management
- * Smart energy
- * Healthcare
- * Smart agriculture (Improvisation of crop yield)
- * Industrial automation
- * Fuel monitoring
- * Smart transportation

Kwick
HIGH TECH & SOLUTIONS (PVT) LTD.

YOUR TRUSTED PARTNER IN SMART & EMBEDDED TECHNOLOGIES

SERVICES

- * SIM Manufacturing
- * Banking Card Manufacturing
- * Biometric Solutions
- * Software Solutions
- * Digital Payment Solution
- * Branchless Banking Solution
- * ERP Solution
- * Middleware & CRM Solution
- * Transportation Engineering
- * Smart Cities Solution
- * Internet of Things (IoT) Platform

IOT & SMART CITIES

EXCLUSIVE DISTRIBUTOR **PTV GROUP** the mind of movement
FOR SMART CITIES AND TRANSPORTATION ENGINEERING

Kwick High Tech & Solutions Private Limited is Pakistan leading IT solutions providing company. We have provided solutions to Telecommunication, Banking & Government sectors. The company holds its pride for being a pioneer in SIM & Smart and Banking Cards in Pakistan and legacy continues being the first company to be the GSM Association member in Pakistan, where a complete solution for SIM manufacturing is provided to their customers.

Kwick S4Q Biometric Rugged Device

Kwick High Tech & Solutions (Pvt) Ltd has been providing diversified range of products for the biometrics & solutions. We are providing SDK, Front end, Backend & Middleware solutions. Our products are the state of the art solutions. We have provided these solutions to different, public & government sectors.

Designed for field staff, the S4Q proves its effectiveness and efficiency as a portable biometric scanner. It enables banks and other businesses to make their business mobile and allow them to carry out their services wherever they need to go to meet their customers. Equipped with Payment Secure Access Module (PSAM), Quad Core, 4G LTE and IRIS it can be used for POS (Point of Sale) as a digital payment solution. The device can be connected through GSM data SIM or Wi-Fi.

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www.kwikhightech.com.pk

Universal Service Fund:

A journey towards sustainable development through ICTs

“If we want to make this great State of Pakistan happy and prosperous we should wholly and solely concentrate on the well-being of the people, and especially of the masses and the poor.” - Quaid-i-Azam Muhammad Ali Jinnah

For bridging the access gap, around a decade ago, many countries in South Asia, Latin America and Africa were running schemes for providing subsidy to private operators and bidding the subsidy on competitive basis to keep the cost as low as possible for proliferation of telecom services. There was a great need in Pakistan to take the same initiative for bridging the digital divide and enabling the people of less privileged areas. So after a lot of groundwork, Ministry of Information Technology in 2006 came up with the idea of establishing Universal Service Fund (USF) to spread the benefits of the telecom revolution to all corners of the country. This fund consists of contributions (1.5% of adjusted revenues) by the Telecom Operators with no Government funding involved.

There was also a general belief that initiatives taken by public sector in Pakistan used to be either too short-sighted or did not sustain for long due to lack of funds and weak implementation procedure. The establishment and management of



USF's another major programme aims to extend the reach of optic fiber connectivity to un-served Tehsils, so that modern day information highways reach up to Tehsil level. USF is proud of the fact that more than 6,785 kms of optic fiber cable is being laid to connect un-served tehsils.

USF in Pakistan proved this perception completely wrong. In a very short period of time, USF put in its best efforts to ensure that its innovative structure and efficient execution process becomes a role-model for many other countries to follow. Specially in the past 04

years, due to the constant efforts of Minister for IT, Anusha Rahman, USF has been able to create a drastic and unprecedented digital revolution in the country. The Minister of IT has been the torchbearer of translating Prime Minister's vision for a "Digital Pakistan" and has en-



abled USF to transform the lives of people of the country.

For those who might not be aware, the structure of USF Co (a Public Private Partnership) is one of a kind. USF has an independent Board of Directors which is equally

balanced between four members from the government and four from the private sector. CEO is the ninth director of the Board. The most interesting aspect of the composition of USF Board is its diversification. Representation of the political lead-

USF Project "ICTs for Girls" is playing a colossal role for knowledge enhancement and ultimately the financial independence of women in Pakistan. Microsoft has collaborated in this project to provide training to young girls which will empower and accredit them to participate in socio-economic development of the country and will bridge the gender digital-divide. Through this program, thousands of girls at Pakistan Baitulmal are being trained at the state-of-the-art computer labs under the coaching and training program. This specialised program includes training on coding, computing and communication skills coupled with coaching from industry experts. The 2nd wave of this program is covering girl's schools in Islamabad to provide digital learning to thousands of students in one cycle. Through this programme, computer labs will be established in 226 schools and approximately 110,000 students and 200 teachers will be provided training by Microsoft. The aim of this program is to increase the employability potential of girls, so that they are financially empowered to take care of their families in future

ership, bureaucrats, technocrats, private sector and consumer groups in the board has enabled the company to implement an overall effective, well-balanced and transparent system.

The very fact that USF has made a remarkable difference during the past few years in the lives of people across the country is very satisfying. Through the broadband for Sustainable Development Programme, USF has been aggressively working to provide telecom

services to the unserved Mauzas across the country. After the issuance of 3G/4G licenses by the Federal Government, this programme was redesigned to include the broadband equivalent data (internet) services as a compulsory component. For new projects, powering of telecommunication site through solar energy was also made a part of each project. Since 2013, services are being provided in Kalat, Sibi, Zhob, Shangla,

Continued on page XIV



MINISTRY OF
INFORMATION TECHNOLOGY
GOVERNMENT OF PAKISTAN

UNIVERSAL SERVICE FUND

Bridging the Digital Divide

Successful realization of Prime Minister Muhammad Nawaz Sharif and IT Minister Madam Anusha Rahman's Vision for spurring the Socio-economic Growth



www.usf.org.pk

BROADBAND FOR SUSTAINABLE DEVELOPMENT

Providing 3G Mobile Broadband Services in remote areas of Pakistan

OPTIC FIBER PROGRAMME

More than 6,785 kms of optic fiber cable is being laid to connect un-served tehsils.

ICTS FOR GIRLS

Establishment of computer labs in Pakistan Baitulmal and educational institutions in Islamabad in collaboration with Microsoft for providing 4Cs training

ESTABLISHMENT OF TELECENTRES

Centres to provide public access to ICT services primarily for people in un-served and under-served areas of Pakistan.

Falling in love with Scandinavian Design - the story behind the new Nokia smartphones

Raun Forsyth and Alasdair Mcphail, design directors at HMD Global, led the team behind the new Nokia smartphones - the Nokia 3, Nokia 5 and Nokia 6. Here they take us behind the scenes for an intimate look into the design process from start to finish, the principles of pure Scandinavian simplicity and functionality, staying true to the Nokia design heritage, and what it means to add purpose to beautiful design.

How does the creative process begin?

It all started with a strong team vision, we got together with one goal - to create something mind-blowing. As a newly established product team, we began by drawing on our intimate understanding of Nokia's brand heritage and defining a solid common vision for what we are heading towards.

The goal was to deliver fantastically durable and smart devices that are at the same time so beautiful that you fall in love with them. However, we believe that love develops over time. Whilst others try to trap your attention with shiny, over-the-top designs, we take a more understated approach. Our smartphones will not blind you, they will just keep delighting you as you use them until you end up in love, the gradual and undemanding process it should be.

What are your main design principles?

Get the bones right first - a thorough understanding of the fundamentals of what you want to achieve. The design and engineering departments

work separately in a lot of organisations but we work together. Phones have such intricate internals that you cannot design the exterior without understanding the

functionality of each part. Otherwise, you will affect the performance. Take the antenna, for example. We have seen in the past how disappointing the user experience can be when design is the only driver behind repositioning it. So we worked with our experienced engineers to create a beautifully plain back panel by hiding the antenna lines on the edge of the phone without negatively impacting the performance.

Scandinavian simplicity and purity as opposed to complexity - reducing the unnecessary: If you take away what's not essential from a device, the features that remain are naturally better quality as there is more attention and space for them. Think about Formula One racing cars - the engine is now part of the chassis, it is all in one piece, reduced and simplified. And they have never been more powerful. Also, let's be honest, the more superfluous parts you can remove, the less chance there is for quality issues. And by focussing on essential features, you can reduce the overall size of the smartphone too.

Design with purpose: When deciding which materials to use for the chassis, we started by determining what qualities are most important to us and the Nokia users. We wanted phones which are solid, durable and feel good in the hand. Metal provides durability but



How do you discover those irrational desires?

We conduct a lot of research. It is not about asking people to tell us what smartphone designs they want. We want to find out more about the other brands and products they like. Then we use our knowledge of consumer behaviour to draw our own conclusions on the common factors behind those affections and the emotive triggers they provide.

Talking about other brands and products, what did you draw your inspiration from?

Coming from our roots, we draw inspiration from the minimalism and simplicity of Scandinavian design and architecture. The most iconic object for us is the wavy glass vase by Scandinavian architect and designer Alvar Aalto. His pieces are simple but also memorable and confident in their uniqueness.

We also look at popular fashion. We noticed that copper, for example, is making a subtle comeback into houseware as part of the trend for natural metal colours to be incorporated into everyday fashion. The metal colours we are using are honest and natural, avoiding the bright cheap metals which could be perceived as Christmas decorations. Another colour we used was the colour of tempered steel - when heated to 600 degrees, steel turns a very deep, rich, silky blue. This colour also triggers pleasant familiarity from its resemblance to the dark denim and deep blue leather goods Italian fashion houses featured in their recent collections.

Concluding remarks

Things we are fighting for as designers are not logical, some of our choices may, to the untrained eye, look the same and cost more. However, those are the features which give a smartphone its emotional appeal. And we've learned when to break the rules. Even when phones sell, the design team often doesn't get the kudos as people often assign the success to technical specifications. But it is easy to get bored by the spec race so it is time to give people real choice, and the only way to do that is through design.

Xiaomi brings Redmi 4X to Pakistan in partnership with Smartlink Technologies

With the launch of Redmi 4X, Xiaomi demonstrates its commitment to the market. The world's leading technology company Xiaomi will launch Redmi 4X in Pakistan on May 20th 2017 through distribution partner SmartLink Technologies.

Xiaomi have disrupted the Pakistani smartphone market when it unveiled

Care Centers within the leading cities of Pakistan.

Redmi 4X

Redmi 4X features a full metal body, is incredibly slim at just 8.65mm thick and weighs a mere 150g. Equipped with a 4100mAh battery, Redmi 4X has an impressive standby time of up to 18 days. It will be available with 3GB RAM and 32GB storage, so users can multi-task more efficiently, while also having more space for apps and images. Redmi 4X will be available

to different accounts, removing the inconvenience of having to log in and out on the same app. With MIUI 8, users can also split their smartphones into two accounts. This means that a different password or fingerprint can allow users to access a different home screen entirely, with different apps and data that are completely independent. According to their needs, users can choose to merge certain data such as the address book and call history.

Marketing Director of

- Qualcomm Snapdragon 435 with (Octa-core 1.4GHz)
- 4100mAh battery
- 13MP camera with PDAF; 5MP front camera
- 5-inch HD display
- Dual SIM (3-choose-2 hybrid SIM tray)
- LTE support
- 3GB RAM + 32GB Flash
- Up to 128GB microSD expandable storage
- Rear fingerprint sensor
- Available in Black

About Xiaomi

Xiaomi was founded in 2010 by serial entrepreneur Lei Jun based on the vision "innovation for everyone". We believe that high-quality products built with cutting edge technology should be made accessible to everyone. We create remarkable hardware, software, and internet services for and with the help of our Mi fans. We incorporate their feedback into our product range, which currently includes Mi and Redmi smartphones, Mi TVs and set-top boxes, Mi routers, and Mi Ecosystem products including smart home products, wearables and other accessories. With more than 70 million handsets sold in 2015, Xiaomi is expanding its footprint across the world to become a global brand.

About Smartlink Technologies

Established in 2016, Smartlink Technologies is a brainchild of a pool of professionals whose strong vision and even stronger conviction paved the way for an exclusive partnership with Xiaomi. We believe in reaching out to both the low-end and the high-end consumers and still give out state-of-the-art and warranted products at the best possible prices. We live in an age where the digital world meanders from smartphones to smart everything - we see it all around us. Smartlink Technologies strives to connect latest technology with modern and innovative sales techniques to change not only how brands are marketed but also how they define themselves.



three smartphones, Mi Max, Redmi 4A and Redmi Note 4 in February. It also brought its amazing ecosystem products such as Mi Band 2 and Mi Power Banks ranging from 5,000 mAh to 20,000 mAh.

With a considerable fan growth in the country and with the help of Smartlink Technologies, Xiaomi was able to grab a strong foothold within the country. As promised, extending their partners 'consumer comes first' philosophy, Smartlink Technologies will fulfill the requirement of Mi Customer

starting May 20th in black at 18,900 PKR.

The smartphones will be available offline across the country and online at official mistore.pk and at authorized online sales agents online shops at Daraz.pk and Yayvo.com.

Every Redmi 4X will ship with MIUI 8 which builds in several technology breakthroughs such as being able to clone apps and manage multiple accounts on the same phone. This means that users can have two instances of a messaging app on the same phone that correspond

Smartlink Technologies, Ahmed Butt says, "Majority of the Pakistani consumers prefer to purchase smartphones remaining in this price bracket and thus this bracket has always remained a key market for all brands. We have confidence that Redmi 4X will be a hit within its own price bracket, as the smartphone surely outperforms its competition in the market."

The device will also be available on SmartLink Technology's online platform starting May 1st 2017.

Key features of Redmi 4X:

Redmi 4X
BIG ON BATTERY

5" Display
4100 mAh Battery
Snapdragon 435 octa-core processor
13 MP Camera
Fingerprint Scanner
4G LTE
3GB - 32GB

Rs. 18,900

Available nationwide and also at
mistore.pk daraz.pk yayvo

National ICT R&D Fund: Towards an innovation and commercialisation ecosystem



National ICT R&D Fund is the premier national institution which is dedicated towards promoting an innovation and research commercialisation ecosystem across the country. The company is inspired by the magic that information and communication technologies have brought about in all our lives. It is focused towards making Pakistan a player in the knowledge economy by trans-

A comprehensive national level technical training program for freelancers is also being launched this year which will train approximately 1 million freelancers within the span of 2 years. A nation-wide "ICT for Women Entrepreneurship Development Program" has already been launched to tap the entrepreneurial potential of Pakistani women. The program will train a total of 500 women from across the country.



forming the company into a Venture Capital (VC) fund focused on fourth industrial wave technologies and by addressing gaps in the entrepreneurial ecosystem. It believes that a critical driver of the knowledge economy is a robust startup ecosystem which sets the pace for a holistic national transformation.

An innovation and commercialisation centric ecosystem is pivotal to the formation of a knowledge economy. Emerging technologies such as the ones highlighted in "The Fourth Industrial Revolution" by Klaus Schwab are disrupting and transforming human life in many facets. Tech startups are the building blocks of this innovation and research commercialisation ecosystem, and the resultant knowledge economy. The company has aligned itself with these changing dynamics. Going forward, the company will focus on commercialisation and impact of funded projects and function more like a Venture Capital (VC) Fund, which will continue to provide grants, but with an emphasis on impact of funded projects.

The company was established in 2006 by the Federal government, under Section 42 of the Companies Ordinance,

1984. Over the last decade, it has funded 130 high quality technical projects worth more than Rs 2 billion. The company has also funded and administered the country's largest undergraduate scholarship program worth about Rs 3.8 billion through which more than 4000 students were awarded 4-year undergraduate degree scholarships in ICT related disciplines in some of the top universities of the country. It has, over the years, funded a series of programs and activities where emphasis was given to achieve technical excellence, innovation, and its diffusion and positive impact on the economic growth of the country and for the benefit of the society at large.

The company is now setting up a series of incubation centres across the country to stir an entrepreneurial drive amongst the young graduates. It has already setup a 21000 sq ft National Incubation Center (NIC) at Islamabad, which will host 40 incubatees every year for the next five years. Likewise, NICs are being setup, one each in Karachi, Lahore, Peshawar and Quetta and would be inducting their first cohorts within the next few months. The company is also looking to set up centres of excellence in Fintech, Robotics & Internet of Things

(IoT).

A comprehensive national level technical training program for freelancers is also being launched this year which will train approximately 1 million freelancers within the span of 2 years. A nation-wide "ICT for Women

Entrepreneurship Development Program" has already been launched to tap the entrepreneurial potential of Pakistani women. The program will train a total of 500 women from across the country.

Taking cognisance of the remarkable pace at which technology is transforming our lives, the company has identified specific horizontal areas that will be the focus of its efforts. This however does not inhibit its ability to fund proposals/projects from any other ICT centric domains. The priority thematic areas are listed below:

Artificial Intelligence/Big Data
Internet of things
Cloud/Cyber security
Block chain
Shared economy
Virtual/Augmented reality
Wearables, Implantables
3D/4D Printing
Robotics
Neurotech

National ICT R&D Fund is committed to play its part in building a progressive and vibrant future for Pakistan.

National Incubation Center Islamabad

Strategically placed in the heart of Pakistan's capital, Islamabad, the National Incubation Center (NIC) is at the pinnacle of developing a strong entrepreneurial ecosystem, helping technology entrepreneurs to build sustainable products and companies.

Launched officially by Minister Anusha Rehman, on February 07, 2017, NIC is Pakistan's first of its kind innovation hub launched under the public-private partnership of Ministry of Information Technology & Telecom, National ICT R&D Fund, Teamup & Jazz. With currently 21 startups incubated, NIC offers free of cost workspace, incubation, acceleration (the JAZZ XLR8 program), seed funding and access to 50M mobile customers.

This innovation hub also offers tech entrepreneurs access to industry leaders and world-class mentors, who help in startups to realize their full potential. It also provides Pakistani startups with the resources required to build sustainable companies, which will boost the economic growth of Pakistan.

International and local partners including FbStart, Google, Hult Prize, Invest2Innovate and Acumen Fund will be working with NIC, to drive economic growth in Pakistan through innovation in Information and Communication Technology (ICT).

Headed by Aamir Ibrahim, CEO, Jazz is laying the foundation of a sustainable tech ecosystem, and using the NIC, to provide resources and expertise to enable young entrepreneurs to fulfill their potential and assist them in bringing sustainable economic growth to their communities.

This initiative is aligned with VimpelCom's groupwide 'Make Your Mark' (MYM) program which aims to help shape the future of the young generation. The campaign, which aims to build technology skills among the students and tech-literate young people,



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National Incubation Center in Islamabad that provides business support and access to mentors and investment. Since 2014, Teamup has accelerated multiple startups in Pakistan, which have gone on to raise over multi million in capital, scaled their businesses, created over numerous jobs and deepened their social and economic impact in the country. Teamup also has 75+ mentors and several opportunities in its network, who are all local and successful Pakistani entrepreneurs dedicated to support innovative startups in Pakistan.

In February, 5 startups namely; Madhunt, Anzen, Mapalytics, Getpayd, Helli, from the NIC, also a part of the Jazz xlr8 program, got an amazing opportunity to participate and showcase their products at the 4 Years From Now (4YFN) 2017 at the Mobile World Congress in Barcelona. All teams had their respective booths from where they were able to promote themselves, exhibit their products, attract investors and network with other startups & corporates. The startups managed to connect with a lot of possible investors and potential partners at the event for future synergies. Minister Anusha Rahman, Veon Chairman Augie Fabela, PTA Chairman Dr. Syed Ismail Shah, and CDFSO Anika Afzal were also present at the event.

The National Incubation Center mission statement directs us not only to "advance knowledge" but also to train them to be the economic contributors of our country's ecosystem. We feel proud to have several international and local partners who will be working with NIC to drive the economic growth in Pakistan through innovation in information and communication technology.

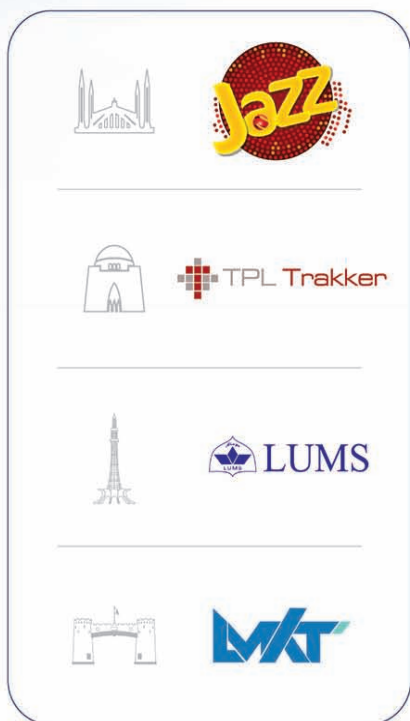
TPL Trakker & NIC

"The focus of TPL Trakker with NIC will be to provide selected start-ups physical infrastructure; business, technological, and commercialization support; cutting-edge research; networking and mentorship opportunities; and enabling their successful graduation for investment matchmaking. Our vision places science and technology at the centre of developing a fast-growing, internationally competitive, and export-driven industrial tech sector. TPL will identify key issues and challenges, set out strategic objectives and targets, spread that knowledge amongst the wider entrepreneurial community at the pre-incubation phase and spell out a detailed action plan to realize the vision by handpicking start-ups along the key verticals identified and helping them grow through capacity building, access to finance and access to markets, both local & international.

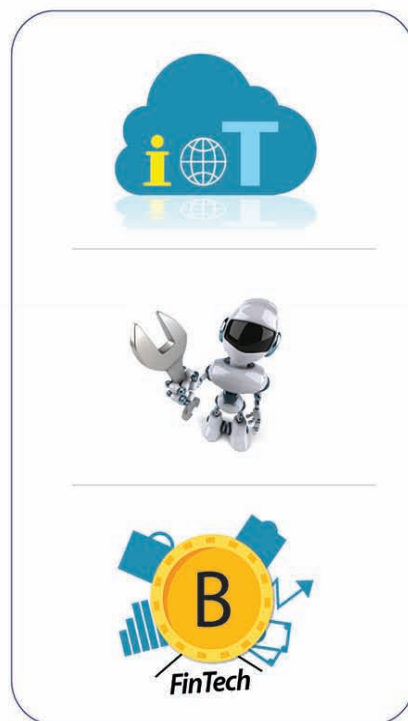


Prime Minister Muhammad Nawaz Sharif's & IT Minister Madam Anusha Rahman's Vision for Nurturing Innovation and Entrepreneurship

National Incubation Centers by National ICT R&D Fund



Specialty Incubation Centers by National ICT R&D Fund



Digital Skills Training Program by National ICT R&D Fund



The priority thematic areas are listed below:

Artificial Intelligence/Big Data
Internet of things
Cloud/Cyber security
Block chain
Shared economy
Virtual/Augmented reality
Wearables, Implantables
3D/4D Printing
Robotics
Neurotech

1 Million Youth
to get trained in
Freelancing

Digital Pakistan Policy

Ministry of IT & Telecom first formulated National IT Policy on August 18, 2000. However, given the augmented demand and growth for IT, it has become imperative to reformulate the National IT Policy. One that takes into account its increasingly transformed role across all sectors of socio-economic development, their accelerated digitisation and transformational modernisation into integrated components of a holistic knowledge based economy. With this in mind, Ministry of IT & Telecom has endeavored to draft an updated Digital Pakistan Policy document based on multi-stakeholder model to rapidly transform the IT and other sectors of economy and to enhance economic growth. In this regard, Ministry has engaged in consultations with all stakeholders (including various divisions, public and private organisations, P@SHA, civil society, Academia, provincial governments, IT & Telecom industries and associations related to persons with disabilities etc) were given foremost importance in the process. The consultations were carried-out in the form of meetings, workshops and seminars. Furthermore, working groups, having representation from relevant stakeholders, were formulated for each key pillar of the draft policy and different sessions of these working groups were also held to attain their valuable input to draft the policy document. Presently, this Ministry is in the process of submission of said policy document to ECC for its approval.

This Digital Policy document will serve as the foundation pillars for the construction of a holistic Digital Ecosystem with advanced concepts and components for the rapid delivery of next generation digital services, applications and content. It will serve as an aggregator of demand for innovative digital services and as a supplier of data for value added services and applications. It provides an opportunity for local entrepreneurs and firms to acquire core competencies, experience and credibility and become better positioned to compete on the international stage. The draft Digital Pakistan Policy 2017 is available on Ministry's website for public views and comments.



Presently MoIT, in-consultation with relevant stakeholders, is in the process of formulation of e-commerce regulatory framework for the proliferation of e-commerce eco-system to safeguard the users and merchants' trust and will resolve longstanding barrier to growth of Pakistani e-commerce.

By launching ccTLD Dot Pakistan, internet accessibility for Urdu language users will be revolutionised as IDNs in native language will facilitate internet navigation much easier. It will help local citizens to access web addresses using Urdu language.

Establishment of Dot Pakistan

Internet Corporation for Assigned Names and Numbers (ICANN) Board has passed resolution on Internet Registry Dot Pakistan, through which local community of Pakistan will now be able to register and use internet domains in Pakistan's native languages and scripts.

It is an important milestone

achieved by the Ministry of IT to proliferate the digitalisation and bridging the digital divide in Pakistan through promoting local content. IT Minister, on various occasions, has lauded the efforts of team MoIT, multi-stakeholder technical committee members on internet registry Dot Pakistan, and team NTC on achieving this major internet governance initiative.

In December 2016, Ministry of IT and Telecom had processed del-

egation request for the internet registry Dot Pakistan, in-consultation with stakeholders committee members from Academia, Civil Society, Internet Community, ISPAK, National Language Authorities, PASHA, PTA, Governments etc.

Pakistan has already successfully completed the preparation and evolution stages of ICANN Fast track for IDN ccTLDs.

ICANN, the Internet Corporation for Assigned Names and Numbers, is responsible for managing and coordinating the Domain Name System (DNS) to ensure that

new, it is fast gaining traction. The growth of e-commerce in Pakistan can have substantial results, as it allows for business to be generated, the economy to flourish and more competitive practices to be established. Since the auction of 3G and 4G/LTE licenses, the e-commerce industry has had the opportunity to boost its extent and businesses.

E-commerce is a major tool towards positive development of the country and Ministry of IT, being an enabler towards IT & Telecommunication sector has taken the initiative to formulate an Inter-Ministerial Committee for a fast-track implementation of this critical initiative. In this regard, MoIT, as an enabler, through relevant stakeholders such as SBP has approved regulations regarding System Operators (PSO) and Payment System Providers (PSP). Another measure proposed by the IMC related to efforts on part of the Ministry of Finance (MoF) to improve Pakistan's ranking on the Financial Action Task Force (FATF) list from Grey to White to enable entry to credible international players like PayPal.

Presently MoIT, in-consultation with relevant stakeholders, is in the process of formulation of e-commerce regulatory framework for the proliferation of e-commerce eco-system to safeguard the users and merchants' trust and will resolve longstanding barrier to growth of Pakistani e-commerce. The initial draft is finalised and shared with relevant stakeholders for their input. Once finalised, the same will be incorporated in National E-Commerce Policy by the Ministry of Commerce.

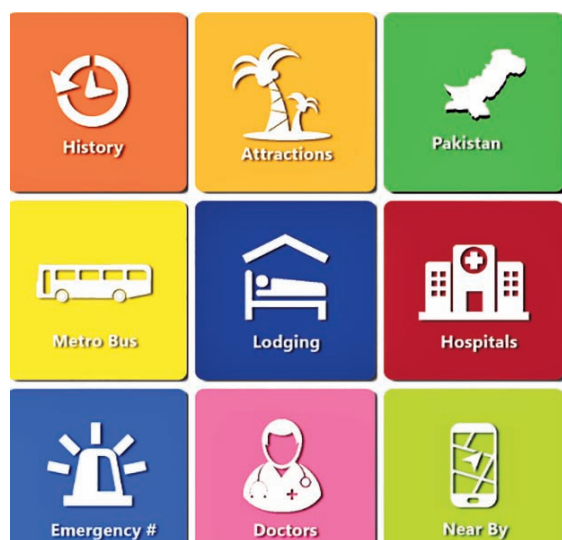
A Memorandum of Understanding (MoU) between Alibaba Group, China and Trade Development Authority of Pakistan (TDAP) is signed on May 13-14, 2017 during Prime Minister Nawaz Sharif's visit to the Alibaba Headquarters in Hangzhou, China. With the support of the Alibaba Group and Ant Financial we hope to elevate our local businesses to new heights and bring them into the realm of the e-commerce platform.

E-commerce:

Even though the e-commerce industry in Pakistan is relatively

Islamabad City App

Given the prefoliation and expansion of 4G/LTE/3G network in the country, National Information Technology Board attached department of Ministry of Information Technology and Telecommunication and Capital Development Administration (CDA) joint efforts to empower the citizens of Islamabad with indigenously developed mobile application that not only can help them to explore city life but also equip each citizen with the direct access to law enforcement agencies' and most critical emergency contact numbers based on user's GIS location.



This mobile based application will facilitate the citizens and visitors to have direct access to the following information based on their locations:

- History of Islamabad
- About Pakistan
- Metro Bus Stations
- Emergency Numbers
- Draw Route to destinations
- Virtual Tours
- Attractions
- Treasures
- CDA Complaint Management System
- Report a Crime
- Report Cyber Crime
- Gas stations
- Hospitals
- Police
- Doctor
- Art Gallery
- ATM
- Library
- Bakery
- Banks
- Lodging
- Mosques
- Museums
- Car rental
- Amusement Parks
- Laundry
- Pharmacy
- Restaurants
- Embassy
- Schools
- Shopping Malls
- Bus Stations
- University
- Train Stations
- Lawyers
- Local Government Offices
- Veterinary Care
- Travel Agency
- and may more to come

The first version of the application is launched for android based mobile phones and ready for download at Google app store by searching "Islamabad City App". It is also available for download from NITB and CDA's website as well.

Such initiatives will lay down a foundation and a step towards Smart City vision of Ministry of IT and National IT Board. In near future, National IT Board is planning to connect different citizen centric services to this app as well.



Universal Service Fund

Continued from page XI

Chitral, Chagai, Khuzdar, Awaran-Lasbela, Kohistan, Dera Bugti and Kharan-Washuk. Although, the field teams faced immense hurdles in laying infrastructure in some areas but these projects started bearing fruits very soon and telecom services are currently being provided in more than 10,000 villages.

Second major landmark of USF is the successful execution of broadband programme which aims to deliver the social and economic benefits of ICTs to the masses through affordable broadband, thus helping to achieve Government's objective of breaking the poverty cycle and eliminating the social divide. It is pertinent to mention here that broadband is also a key element of the United Nations Millennium Development Goals (MDGs) on poverty reduction and is globally bringing a paradigm shift to the way people run their lives. What makes usage of broadband all the more important is that it is transforming every facet of communications, from entertainment and telephone services to delivery of vital services like health care. More importantly, according to 'The Lisbon Consensus', adopted at the 4th International Telecommunication Union, World Telecommunication Policy Forum on April 24, 2009, the intervention of government for broadband penetration was also endorsed. With broadband creating such a huge impact on people's lives globally, USF launched USF broadband programme in 2nd/3rd tier un-served urban areas. Special emphasis in this programme has been on educational institutions, where the subsidy winners are required to set-up computer labs (Educational Broadband Centres), with broadband connectivity in all the higher secondary schools and colleges in their respective areas and Community Broadband Centres for those who cannot afford to have their own computers. The success of this programme is evident from the fact



that around 741,229 broadband connections have been provided in 552 cities and towns.

USF's another major programme aims to extend the reach of optic fiber connectivity to un-served Tehsils, so that modern day information highways reach up to Tehsil level. USF is proud of the fact that more than 6,785 kms of optic fiber cable is being laid to connect un-served tehsils.

In order to not limit the utilisation of fund on broadband and optic fiber services, USF adopted a novel approach by taking Information and Communication Technologies (ICTs) to grass root level in the country.

To execute all these projects, USF came across various challenges to achieve the real objectives. Problems such as security, accessibility of civic amenities, power shortage, increase in cost (inflation, rupee exchange rate), high operational expenses and low revenue generation were faced in implementation of USF programmes.

In order to form a future course of action, USF has designed an innovative plan so that people can seek maximum socio-economic benefits through ICTs. This objective will be achieved through the project 'Establishment of Telecentres'. In present scenario, telecentres are becoming a valued and recognised part of the development landscape all over the

world. According to USF model, these centres will provide public access to ICT services primarily for people in un-served and under-served areas of Pakistan. This project has immense potential to open avenues



in the fields of education, small businesses, and health-care and gender empowerment. Also, global studies and practices have demonstrated that telecentres have a strong link with achievement of Millennium Development Goals (MDGs) and open various business opportunities for

entrepreneurs, students, females etc. Moreover, with the use of ICTs, telecentres provide opportunities to facilitate knowledge creation and sharing and can also strengthen or replace the traditional system which was being used to acquire knowledge. Services that have been planned to be provided at these centres are Civil Registration Services (Birth, Death, Marriage, Divorce, etc) in collaboration with NADRA, SIM Verification and E-Services (E-Health, E-Agriculture, E-Banking, E-Education, E-Commerce and E-Tourism).

In short, all these initiatives along with innovative and futuristic approach of USF have enabled the citizens of Pakistan to reap maximum benefits from ICTs. It is important to mention here that what USF has achieved so far would not have been

possible without the assistance of the Minister of IT, Anusha Rahman, who has left no stone un-turned to trigger sustainable development in the country through the use of ICTs. With all these inventive future plans, USF intends to reach even greater heights in years to come.

REVAMPING of TIP Haripur

On special directions and vision of MOS IT & Telecom, the following financial and administrative steps are taken

- In compliance with BOD decision, all delegation of financial powers were withdrawn. MD signatory to TIP bank accounts.
- Strict financial monitoring and supervision of TIP accounts and payments
- Streamlining of financial system and HR system
- Conversion of all on road TIP vehicles to PSO fleet cards (savings).
- Condemnation of vehicles - Auction of 24 vehicles - Rs.17.72 million (income)



Syed Khalid Gardezi
Managing Director TIP

- Rationalization and Reduction of temporary staff from 135 (as on 30.6.2016) to 55 (April 2017) (savings)
- Administrative action against agitators/theft including blacklisting them.
- Change of ownership of bulk meters in T&T colony Haripur to PTCL (resulted in saving of Rs. 10 million per month since September 2016).
- Took over management of TIP Housing Scheme. Freeze on activities there
- NAB arrest of six TIP employees who carried out un-authorized ballooning of plots in TIP housing scheme.

- Introduction of e office in TIP (both at Haripur and Islamabad offices).
- Introduction of bio-metric attendance system in TIP Factory Haripur
- Fighting 64 court cases at various judicial forums, including Supreme Court.
- Re-designed and launched new Website of TIP.
- After a break of five years, started work on production of telephone sets.
- Court Cases
- Total 64 Court Cases
- (TIP is taking proactive approach in courts for pending disputes lying there for long periods of time and were not contested)

NITB: Focused on E-Governance

Digital Pakistan, a step towards Smart Governance through e-Governance. Pakistan is heading towards automation on a lightning speed by developing and deploying multiple solutions that are enabling automation of processes and promoting transparency & efficiency of the system through Information and Communication Technology (ICT) environment for government organisations. E-Governance is automating and delivering government services through integration of various stand-alone systems between Government-to-Citizens (G2C), Government-to-Business (G2B), and Government-to-Government (G2G) services. This integrated system will lead towards better delivery of government services to citizens, improved interactions with business and industry, citizen empowerment through access to information, and more effi-

hospital, email services, citizen-facing applications and websites for quick citizen-to-government interaction and dissemination of information, SAP Financial System (used by AGPR), capacity building programs for federal employees through e-learning, and revamping & strengthening core ICT infrastructure and resources for public sector organizations; these are central to the establishment of e-Governance.

In alignment with the e-Governance objectives of Digital Pakistan, NITB had established a model of Smart Governance which will clearly list out the verticals where intervention of ICT will play a vital role in uplifting the country towards digital environment.

Ministry of Information Technology and Telecom is taking different initiatives directly or through its attached departments that will lead towards:

- * Better efficiency in mass processing tasks and public administration operations, web-based (internet or intranet) applications can generate savings on data collection and transmission, provision of information and communication with citizens

process of filling (internal communication module), inventory & procurement, human resource management, project management, and finance planning & budgeting. This application is replacing the traditional manual filing system by empowering the government offices with digital environment for efficient, transparent, and effective disposal of work. E-office application is fully operational and deployed in nine (9) ministries/divisions and nine (9) departments whereas, sixteen (16) ministries/divisions and fourteen (14) departments are in the process of implementation.

In the health sector, various initiatives under implementation are aligned with the Vision 2025. In this regard, automating hospital management workflows for public sector hospitals is one of the key initiatives for a better and more efficient public service delivery. Under this initiative, Hospital Management Information System (HMIS) project has been deployed in Children Hospital at Pakistan Institute of Medical Sciences (PIMS) in Islamabad and Sheikh Zayed Hospital in Lahore. This pilot project that pro-

cesses government offices and faster communication among different government departments. On average around 6.5 million visitors visit the GoP portal every year, which makes this the most effective vehicles for citizen-government interaction.

Given the pre-foliation and expansion of 4G/LTE/3G network in the country, National Information Technology Board and Capital Development Administration (CDA) joint efforts to empower the citizens of Islamabad with indigenously developed mobile application (Islamabad City App) that not only can help them to explore city life but also equip each citizen with the direct access to law enforcement agencies' and most critical emergency contact numbers based on user's GIS location. This mobile based application will facilitate the citizens and visitors to have direct access to the following information based on their location

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- Report Cyber Crime
- Gas stations
- Hospitals
- Police
- Doctor
- Art Gallery
- ATM
- Library
- Banks
- Lodging
- Mosques
- Museums
- Car rental
- Amusement Parks
- Pharmacy
- Restaurants
- Embassy
- Schools
- Shopping Malls
- Bus Stations
- University
- Train Stations
- Lawyers
- Local Government Offices
- Veterinary Care
- Travel Agency
- and may more to come

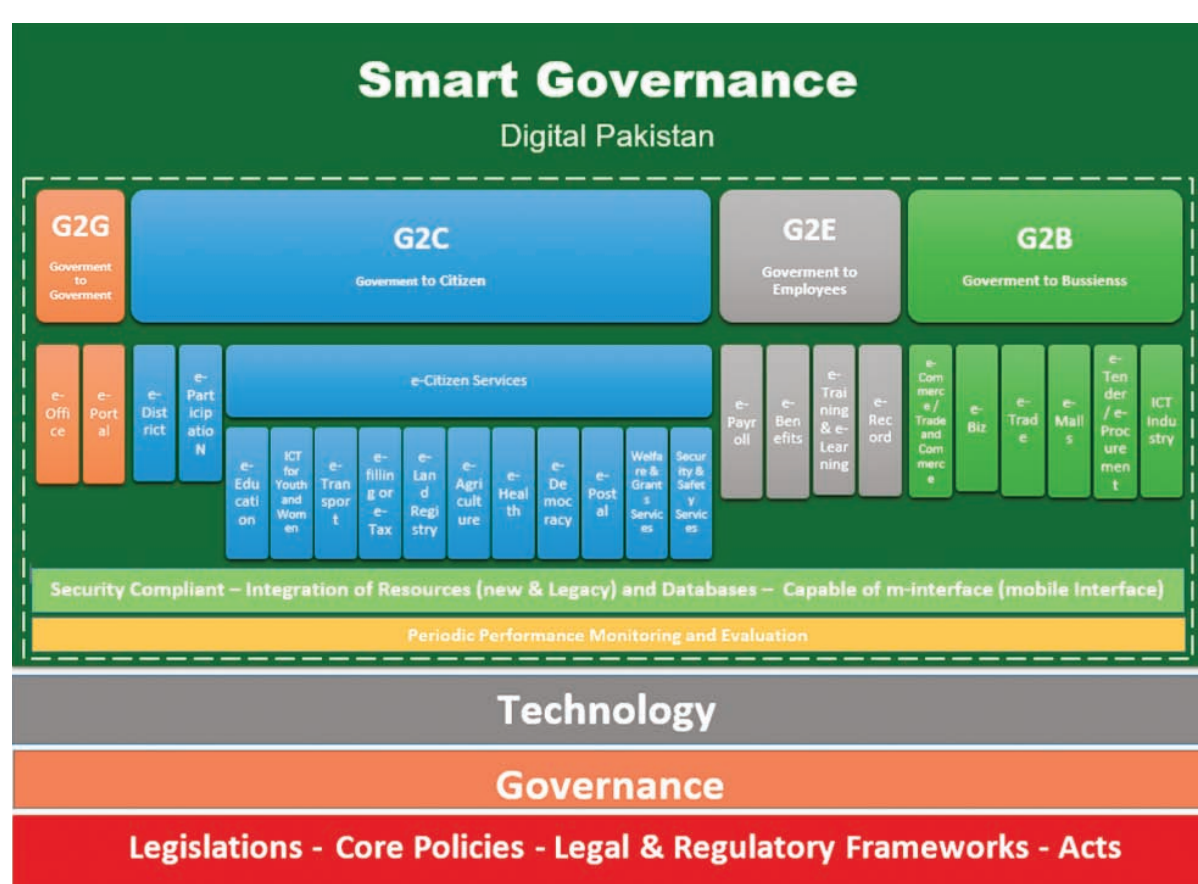
The first version of the application is launched for android based mobile phones and ready for download at Google store by searching "Islamabad City App". It is also available for download from NITB and CDA's website as well. Such Initiatives will lay down a foundation and a step towards Smart City vision of Ministry of IT and CDA. MoITT, NITB, and CDA are planning to connect different citizen centric services to this app in the future.

NITB team, being a subject matter expert on ICT is providing technical consultancy services to different federal government organizations in their process of revamping and strengthening core ICT infrastructure and capacity building for e-readiness. These services include but are not limited to requirement analysis, tendering for ICT services and equipment, and technical assistance in preparing PC-I's. By providing dedicated customer driven ICT based support and services, number of Federal Government Ministries/Divisions/Organizations have improved their ICT infrastructure to meet the e-readiness requirement for e-governance initiatives.

In pursuance of Vision 2025, a comprehensive plan for e-learning based Human Resource Development in ICT to cater for the overall requirements of the Public Sector has been developed. Various training programs for capacity building are in progress including elementary, advanced, and professional trainings in the field of ICT. In connection thereof, more than 6500 federal government employees in different disciplines of IT have been trained. Moreover, full support is being extended to National Internship Program for the capacity building of fresh IT graduates from the universities

- Other Success Stories
- Online Grievance Management System for Overseas Pakistanis.
- Online Complaint Management System
- National Internship Portal
- Online Case Tracking System for Attorney General for Pakistan
- Work Visa Online Application System for Board of Investment

Plans for Future
To address the issues of



sustainability, interactivity and standardization of e-governance activities, NITB will be establishing the frameworks, policies, and standardization for:

- * IT Products/Services Procurement Framework
- * IT Advisory Framework
- * Enterprise Architect Framework

NITB will continue its efforts in providing technical expertise to federal government organizations in their process of revamping and strengthening core ICT infrastructure and resources, establishing citizen facing portals and application.

In 2017-18, NITB is going to initiate the following projects under e-governance to facilitate citizens, businesses, and government organizations.

- * E-health: Promote "One Patient - One ID" by providing

all federal government administered hospitals with a central Patient Registration System; Outpatient & Specialties/Consultant, In-Patient & Emergency/Casualty, Operation Theatres, Intensive Care Unit (ICU), Diagnostic Information, Patient Billing & Income, Medical Stores & Pharmacy, Medical Record Management System; and Clinical Laboratory Module Provision of HR, Finance, Library, Helpdesk, Assets management system

- * E-citizen: Portal for cross-agency citizen-centric government information and services. Provision (through development or integration of existing applications) of all basic citizen services through single portal and/or mobile app such as processes for getting birth/death certificate, domicile, CNIC, weapon registration, driving license,

records from Law Enforcement Agencies, marriage certificate / marital status, passport, Income and property tax, senior citizen / old age benefits and so on.

- * E-women (Baytee): Strengthening the existing 'ICT for Girls' initiative of MOITT by providing a cross platform app that can be used to provide single interface to urban and rural female community of Pakistan to have the access to following services:

- Advocacy on Women Rights, Information on Laws, Rules & Regulations,
- Search
- Academic Institutes, schools, colleges, and universities
- Scholarship opportunities for females
- Career development and training opportunities for females
- Jobs and internships opportunities

tunities (females preferred)

- Health Care Services including hospitals and doctors for females
- Lodging and hostel facilities for females

- E-jobs: Centralised portal to manage process of hiring - not covered by FPSC - from placement of job advertisement till selection of the right candidates in federal government ministries and department, profile management for job seekers and employers, maintaining job seekers database for future analysis.

- Smart Office: Automation of business processes through providing unified communication platform that includes better and more secure enterprise collaboration, email/messaging services, VoIP based text, audio and video conferencing, paperless faxing facility, and content management system.



cient government management.

National Information Technology Board (NITB) under the administrative control of Ministry of Information Technology and Telecommunication (MoITT) is committed to implementing Federal Government of Pakistan's revolutionary e-Governance policies and visionary approach in alignment with Digital Pakistan on highest priority. In this connection, goals and targets are clearly defined; and their progress is closely monitored.

Various arms of government have made significant progress in deploying ICT

and encourage sharing of data within and between governments.

- * Improved citizen service delivery through well integrated and unified government application by keeping complex government structures and relationships totally transparent to the citizen. It will also facilitate the citizens to directly participate in system improvement.

- * Enhance transparency and accountability, reduce corruption, increases openness and trust in government, and thus contributes to economic policy objectives. Specific impacts include reduced government spending through more effective pro-

notes the concept of "One Patient - One ID" for all federal government hospitals will eventually be accessible to doctors and medical staff in any government hospital to maintain a unified and up-to-date profile of patients for correct diagnosis and dispensing the most suitable treatment.

The set of e-Governance initiatives focusing on businesses and citizens is the key agenda of Government of Pakistan (GoP). By developing websites, portals, and agency specific applications, NITB is facilitating the provision of necessary information required by citizens of Pakistan and businesses. NITB has established and maintained www.pakistan.gov.pk, the gateway to the Government of Pakistan on internet that gives a common entry point to websites/portals for all Federal Ministries/Divisions and departments. These websites and portal provide a host of information specific to the concerned ministry/division, citizen or business relevant information/rules/regulations, search of relevant contents, access to electronic or scanned forms/applications to download, linkages with other relevant sites, as well as e-mail addresses and phone numbers of concerned senior government officials.

During 2013-17, NITB has successfully developed and deployed around 25 new websites/portals, 15 agency specific applications (like online Grievance Management System for Overseas Pakistanis at Wafaqi Mohtasib, Online Complaint Management System for Ministry of Water and Power, Citizen facing external interface of FPSC portal,

Web based System for PM Internship Program, Web-based International Investor and Visa System for Board of Investment) and has ensured e-mail access to all ministries and divisions. These initiatives have resulted in several benefits like dissemination of up-to-date information to citizens without having them to



under e-government initiatives. These solutions can be categorised into both e-government and e-governance solutions. Currently, several initiatives are being undertaken within the public sector. The number of ICT projects has increased over the years resulting in adopting application like e-Office (a project of National IT Board/Ministry of Information Technology and Telecom), "e-Health" for federal

grams, transparency of decision-making processes by making information accessible - publishing government debates and minutes, budgets and expenditure statements, outcomes and rationales for key decisions, etc.

E-office application, a software to automate and digitise the common business processes across all government ministries, divisions, and departments. e-Office application computerise the

Ministry of Information Technology
Government of Pakistan

National Information Technology Board

is committed to implement

Prime Minister's Vision of Digital Pakistan

Under the leadership of
Anusha Rahman
Minister of Information Technology and Telecom

Smart Governance through e-Governance

- Digitizing Government to Government Interaction**
Empowering Federal Government organizations with "e-office application suite" to digitize G2G interaction.
- Digitization of Citizen Centric Services**
Implementing citizen facing web portals, mobile apps, and information systems
- Digitizing Government to Business Communication**
Web based portals and information systems to promote ease of doing business in Pakistan
- Enabling Digital Environment**
Strengthening ICT infrastructure, digitization of information and developing citizen facing applications

National Information Technology Board

E-office
Transition to less-paper Office

Private
Public

www.nitb.gov.pk

PID (I) 6510/16

Our vision is

“to be the leading and most admired telecom and ICT provider in and for Pakistan’. Being a Pakistani company and also having ‘Pakistan’ in our name, we take it as our responsibility to cater to customer’s needs and provide them with the latest technologies available globally, building a ‘digital and connected Pakistan’.

**Message from
Dr Daniel Ritz**
President & CEO, PTCL



PTCL has been serving this nation for the past 70 years. Starting as the Post & Telegraph Department in 1947, today it serves as the country’s communication nerve centre, and is a part of the everyday life of every Pakistani. It offers products and services including voice telephony, fixed and wireless broadband, Over-the-Top applications, digital television (Smart TV), carrier & wholesale, satellite services and data centres, which serve the connectivity needs of millions of consumers and businesses nationwide. Being an active member of the Submarine Undersea Cable Network systems, the company enjoys the status of ‘Carrier of Carriers’, connecting Pakistan with the rest of the world.

Our vision is ‘to be the leading and most admired telecom and ICT provider in and for Pakistan’. Being a Pakistani company and also having ‘Pakistan’ in our name, we take it as our responsibility to cater to customer’s needs and provide them with the latest technologies available globally, building a ‘digital and connected Pakistan’.

Each action we take revolves around our customers and in order to cater to the increasing demand for high speed internet, PTCL has made advanced broadband growth a key focus of its future direction. For instance,

in certain areas customers can now enjoy high speed internet up to 100 Mbps. Another step towards this strategy is the massive network transformation project which has already been initiated since January 2017. With its completion,

majority of our customers will be able to enjoy uninterrupted internet with higher speeds of 20 Mbps, 50 Mbps and 100 Mbps.

PTCL is the only telecommunication company that has the largest customer interaction network with 190 plus company owned shops across the country. These shops facilitate customers with variety of services within their reach. Recently, 79 selected shops across the country were rehabilitated to provide customers with premium customer care experience. These shops are also equipped with the latest Virtual Teller

PTCL today is a modern and forward looking company that enjoys distinct leadership in the ICT sector. Serving as the communication backbone of the country since inception, we are embarked upon the mission of being the partner of choice for our customers. We have focused our energies and resources to deliver services to our customers which they expect from us - that is the real success we are aiming towards.

Machines (VTM) where the customers can pay their bills 24/7 at their own convenience.

To serve our technology-savvy audience, PTCL has improved its website, launched PTCL touch mobile application and increased the usage of the e-care and social media channels. With these channels the customers can see their orders, track them through the processes and see them fulfilled. Similarly, customers can track their complaints, chat with the support executives online, see live usage of broadband package, payment of outstanding dues etc. A centralised e-care team has also been established, whereby country-wide customers’ complaints received through various electronic channels are addressed promptly to the satisfaction of our customers.

Bringing world class entertainment to our customers’ doorstep, PTCL became the only telecommunication company in Pakistan to collaborate with Netflix, the global internet television network. It has also partnered with iflix, the world’s leading Subscription Video-on-Demand (SVoD) service for emerging markets and Icflix, the Middle East and North Africa’s leading Internet streaming service. These partnerships allow PTCL to provide its customers access to thousands of hours of high quality streaming content which contains movies, dramas and contents for kids. PTCL also hosts caching servers for Google, YouTube and Daily Motion, offering a superior viewing experience.

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On the forefront: Ufone set to change Balochistan’s telecom ecosystem

Telecommunications has affected human lives like no other technology. People are better connected, better equipped and better informed than ever before. Telecommunication technologies have enabled people to find innovative solutions of the problems faced by developing world and improve standards of living.

Pakistan, with over 139 million cellular subscribers, has been on the forefront of the ICT revolution and the initiation of telecom services in the country. The ICT revolution has further propelled growth and innovation in many sectors. The introduction of 3G/4G launch in Pakistan proved to be a key development in this context. When formally launched, it quenched the frantic need of quick access to data and services, while also bridging the technological gap between the developed and developing countries.

Ufone, an Etisalat group company, has spearheaded this transformation. Fully realising the potential of telecom services, Ufone has focused on developing the whole ecosystem to utilize this technology with its innovative products and services, be it aid disbursement to flood or earthquake affectees or launch of affordable 3G handsets.

Balochistan, geographically the largest province of Pakistan, with a population of about 7.7 million, has the lowest number of mobile phone users. 46 percent of Balochistan’s population has no access to either mobile, wireless or a fixed line network.

Expanding telecom services in Balochistan is a priority of Ufone. Ufone is currently present in about 275 cities with largest coverage in the province and plans on installing over 400 new base transceiver stations (or mobile towers) to provide mobile 2G/3G services in remote areas.

Ufone has extensive plans to further develop telecommunication infrastructure in the province. This will include providing voice services and other value added services under 3G licenses.

Universal Service Fund (USF) was

established by the Government of Pakistan (Ministry of Information Technology) in 2006 to spread the benefits of the telecom revolution to all corners of Pakistan. USF promotes the development of telecommunication services in underserved and under-served areas throughout the length and breadth of the country.

Balochistan and its cities have presently been under the focus for new projects related to deployment of optic fiber, rural telephony, broadband and e-services. Of course, the development of ICT-enabled infrastructure in underserved areas will support the mega projects of CPEC in future.

To date, Ufone has won 5 USF lots in Baluchistan worth PKR 11.4 billion and 2 more lots are in awarding process. Ufone has been rolling out services under the Broadband for Sustainable Development’ (BSD) in different areas of Balochistan which include Sibi, Loralai, Killa Saifullah, Barkhan, Kalat, Khuzdar, Chagai, Mashkel, Awaran and Lasbela districts.

The development projects of telecommunication infrastructure with the financing of USF is indispensable towards the expansion and penetration of ICT services across the country, especially in Balochistan which is likely to give a synergetic effect to China-Pakistan Economic Corridor (CPEC) along with benefiting the people of the province by connecting them to a world of opportunities.

Ufone’s focus on Balochistan extends beyond growing the telecom services network. Recognising that Balochistan is home to a lot of unacknowledged talented, Ufone chose two gifted sportsmen from Balochistan last year as brand ambassadors to highlight their achievements. Fazal Mohammad, 21, football player belonging to Khuzdar and Hayat Achakzai, 33, a boxer from Quetta, both have triumphed in their chosen fields.

Ufone is committed to continue and empower people in all areas of Pakistan by providing them with telecommunication technology, and broadening horizons along with opening up new possibilities for their growth and development.



Transforming for a better future

Building on our 70 years of rich history, we have embarked upon an ambitious network upgrade and transformation program to provide reliable and resilient high speed internet on the door step of our customers. Coming soon to an area close to you.

PTCL is committed to a digital and connected Pakistan

