

Advisory Committee formed for Spectrum auction

STAFF REPORT ISB: The government has constituted an Advisory Committee for auction of the unsold spectrum.

The committee is headed by Minister of IT Anusha Rahman while Special Assistants to PM for Law, Human Rights, Secretary Finance, Secretary Law, Chairman PTA, ED FAB and Member Telecom will be the members of this committee.

The inaugural meeting of this Auction Advisory Committee was held in the IT Ministry.

Anusha Rahman, while chairing the meeting, stated that they are committed to conduct the second round of Spectrum auction in most transparent professional manner as was done in 2014.

PTA Chairman Syed Ismail Shah apprised the committee that consultants, which are hired by the PTA are working on "Market Assessment" and their complete report will be shared with the committee on its completion. This assessment is expected to be done till the end of the January 2016.

This advisory committee will examine and evaluate the "Market Assessment" report submitted by the PTA and will devise an auction strategy and methodology and will issue a policy directive for the spectrum auction. Anusha Rehman said that this auction would be a Golden opportunity for the telecom companies to enhance their spectrum capacity and provide high quality broadband services as per demand of the growing consumer's base in the country.

Scientists set S&T as priority area to promote innovations in ECO regions

STAFF REPORT ISB: Scientists and researchers have called for focusing on achieving greater research efficiency and more intensive transfer of knowledge by means of establishing networks involving research and business. Priority-setting processes are critical in aligning research funding with regional needs and in identifying the research questions necessary to fill the knowledge gaps.

They expressed these views during the two-day meeting of eminent scientists and experts of ECO member states in Islamabad. The meeting was organized by the Economic Cooperation Organization (ECO) Science Foundation (ECOSF), a specialized agency for promotion of science and technology in 10 ECO countries including Afghanistan, Azerbaijan, Iran, Kazakhstan, Kyrgyzstan, Pakistan, Tajikistan, Turkey, Turkmenistan, Uzbekistan.

Main objective of the meeting was to ascertain the strengths and ongoing activities of scientific institutions in ECO member states and to prioritize the focus areas of research for funding under S&T Fund of ECOSF. As many as 17 participants from ECO member countries contributed in the meeting.

They said that science and technology (S&T) has undergone considerable changes over the past 30 years. Thus the main goal of the S&T is shifting towards the formation of an effective innovation system for covering the entire sector of generation, transfer and application of knowledge.

In his inaugural remarks, Presi-



dent ECO Science Foundation Prof. Dr. Manzoor Hussain Soomro briefed the participants about the achievements of the ECOSF.

In collaboration with the Higher Education Commission (HEC), the ECOSF has a great potential to pursue the S&T based economic development in the region. This initiative becomes even more important and strategic in the wake of China-Pakistan-Economic Corridor and the China's "one belt one road". Dr. Soomro urged the government of Pakistan to support the ECOSF initiative through the Ministry of Science & Technology and Planning Commission.

Later, presentations were made by the country representatives highlighting the S&T activities in their countries along with their priorities research areas. Subsequently, a moderated brain-storming session was conducted to finalize the priority research areas in line with the UN sustainable goals (SDGs).

A presentation on the UN Sustainable Development Goals (SDGs)

was also made by the UNDP officer for awareness and capacity building of participants to link their research and academic activities with the 17 SDGs set for 2016-2030.

As an outcome of the meeting of eminent scientists and facilitated workshop exercise, the meeting set regional priority research areas to promote innovation and economic growth in the ECO region. These areas included energy (renewable energy and natural resource of energy, applied/ basic sciences, nanotechnology, biotechnology and seismology), water (water use efficiency, water pollution and recycling), food security, climate change (global warming, environment, nature, ecosystems sustainability, fossil fuels), health and natural resource management.

These priorities specify foundation for making decisions on concentrating public resources in the most important areas of science, technologies and innovations and for commissioning the available scientific and technological potential.

It is pertinent to mention here that ECOSF has established an "S&T Fund" for financing collaborative research among the ECO member states. The modalities of this "S&T Fund" have been approved by the ECO Council of Foreign Ministers (COM), however, the member states have yet to contribute finances to the Fund.

Later in the same evening, Federal Secretary for Ministry of Science and Technology Fazal Abbas Maken hosted a dinner for the delegates of the meeting where various heads of S&T organizations and diplomats from ECO countries were also present.

On the occasion, the outcome of the meeting was shared by the President ECOSF with the Secretary and the diplomats. In his remarks, Maken appreciated the dynamic leadership of ECOSF and considered the meeting a good start that S&T Research Priority Areas have been determined. He assured full cooperation and support of his Ministry for the ECOSF.

Dr. Soomro seeks ECO support for ECOSF

MONITORING REPORT ISB: President ECOSF Prof. Dr. Manzoor Hussain Soomro has recently called on the new Secretary General of Economic Cooperation Organization (ECO) Ambassador Halil Ibrahim Akca Tehran.

During the meeting, Dr. Manzoor briefly introduced ECOSF and its functioning as well as its high forums to the Secretary General by highlighting the historical development up to establishment of the Foundation.

The President ECOSF sought special assistance of Halil Ibrahim for the completion of the process of ratification by Turkey. The Secretary General was also apprised about the status of ECOSF Charter ratification and budgetary contributions by the member states.

The Secretary General was also briefed that ECOSF has launched Inquiry Based Science Education (IBSE) in ECO region and 1st Capacity Building Workshop on IBSE. In 2016, four more capacity building workshops are expected to be organized

in Pakistan, Iran, other two countries; possibly Turkey and Azerbaijan.



Halil Ibrahim took keen interest in the activities of the Foundation and highly appreciated the progress of the Foundation and assured of his full support to the Foundation. He also appreciated the contribution/inputs of Prof. Soomro for the ECO Vision-2025.

He also advised that research projects be initiated by ECOSF and in the response, the President ECOSF said that the S&T Fund of the Foundation has been established; however, the funds from the member states are yet to come through.

Auction of 3G/4G spectrum still hangs in balance

STAFF REPORT ISB: The auction for next generation network spectrum (3G/4G) hangs in the balance, as InterConnect Communication, the consultant hired for the auction, has reportedly painted a gloomy picture of market readiness.

According to an official in PTA, the consultant has completed the market assessment after holding a series of meetings with various stakeholders, including telecom operators in the country. After extensive exercise, the consultant has drafted a report and submitted to the Evaluation Committee of the regulatory authority.

The body will go through the report, evaluate and will take a final decision about 3G/4G spectrum auction, the sources said.

They revealed that the consultant has assessed the market potential for spectrum auction, existing market players, their problems, revenues, investment and auction objectives related to telecom sector growth and revenue. The summary of this report indicates that five telecom players are already

operating in the market with low margins and tough competition.

They say that the government has not honored its commitments made with them at the last auction of spectrum. Moreover, the operators' intent for invest-



ing in the spectrum is lacking and any auction in near future could not bring any notable participation from them.

The situation became worse for the government after the Mobilink-Warid decision of a merger. If the merger gets approved, Mobilink will not need to participate in the upcoming 4G license while Zong is already carrying both 3G/4G licenses. The government budgeted Rs 56 billion for 2014-15 and showed it as realised in the revised estimates for 3G/4G auction that never took place. For 2015-16, the revenue from 3G/4G auction has been inexplicably raised to Rs 65 billion.

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World Innovation & Technology Day celebrated

STAFF REPORT ISB: The World Innovation and Technology Day has been celebrated across the globe including Eindhoven, Netherlands.

Special demonstrations on connected lighting, the

low seamless integration of real time and sensor data as well as easier data sharing. Philips Lighting CEO Eric Rondolat and other prominent company executives addressed the media to discuss how the company is making



Internet of Things (IoT) and human centric lighting were arranged to allow visitors a glimpse into how lighting is turning Sci-fi into reality.

The event was organised by Philips that was attended by media persons from around the globe, says a message received in Islamabad from Netherlands.

The event featured extraordinary displays and new products which will transform how we use lighting and its role in quality of life.

The integration of IoT with lighting systems in homes, offices and cities al-

low seamless integration of real time and sensor data as well as easier data sharing.

Philips Lighting CEO Eric Rondolat and other prominent company executives addressed the media to discuss how the company is making

use of its expertise to lead consumers into the future of lighting technology.

Philips Pakistan CEO Asad Jafar said, "Philips has completely changed the way lighting solutions are used by taking the next step in understanding what modern lighting can do for us."

Experts speak about cyber security system

STAFF REPORT ISB: The banned outfit, Daish has excellent cyber network for speed, security and global



linkages, criminals of today have complete understanding of internet and related technology, and that is the reason that cyber security has become important, said former additional DG, FIA, Ammar Jaffrey.

He said this while addressing a seminar on "Cyber Security and Emerging Threats," organized by SDPI in Islamabad.

He said, internet has created shared linkages between economic growth and security which employs that sustainable development depends on secure internet.

Talking on 'Vision 2015,' he said it would be very difficult for Pakistan to enter into development era without development in ICTs.

He was of the view that next wars will not be physical; they would be fought out by destroying infrastructure, which is evident for the examples of Georgia and Ukraine.

PTA Chairman Ismael Shah explained that everyone wants to be secure in real and cyber life. The positive use of ICTs should not be stopped just because of the danger, as it will hinder all development.

Deputy Director FIA, Syed Aun Abbas Bukhari, explained that cyber security is a joint responsibility of government and public.

He said FIA is at par with international organizations, especially in forensic test, but it is difficult to move forward quickly in the absence of an international agreement.

Director Cyber Wing, Ministry of Information and Broadcasting said, awareness is real requirement of the time. The government is trying to protect tangible assets of the people.

LEAD offers fellowships to professionals

STAFF REPORT ISB: Leadership for Environment and Development (LEAD) Pakistan under its flagship Leadership Development Programme (LDP) has invited applications for fellowships from junior to mid-level professionals belonging to different sectors in Pakistan.

According to the details, since 50 per cent of mankind is now urbanised, the battle for economic growth, climate change, poverty alleviation and health of communities will be lost and won in cities in the 21st century. Given its vital importance, the 19th cohort of LDP has been themed around urbanisation and titled as 'Urban Resilience and Sustainable Cities'.

The 19th cohort will have sessions on Sustainable Urban Planning, Urban Resilience, Low Carbon Development and Role of Cities to Achieve Sustainable Development Goals (SDGs). The applications submission deadline is February 2. Key points in the eligibility criteria include education of 16 years or above, along with minimum experience of three years and interest in LDP topical areas.

Several key posts still lying vacant in HEC after months

STAFF REPORT ISB: Higher Education Commission (HEC) is yet to appoint its principal accounting officer and several other key officials.

A number of senior management slots are still lying vacant at the HEC including Executive Director, Member Operations and Planning, Member (Academics) and Advisor Human Resource Development, Advisor Quality Assurance, Advisor Finance, Advisor Monitoring, Managing Director Quality Assurance Agency, Director General Learning Innovation, Director General Quality Assurance, Director General Human Resource Development, Director General Finance and Budget.

The HEC management has appointed two consultants on deputation allegedly without following due process of hiring.

While contacted, HEC Chairman Dr. Mukhtar Ahmad said only two con-

sultants were appointed by the commission as per the urgent requirement of the body and rules were not violated while making these appointments on deputation.

Meanwhile, the post of Executive Director is vacant for the last 19 months. The Executive Director is the commission's principal accounting officer who looks after the commission's secretariat. The chairman HEC admitted delay in this regard, however, he explained that there were a number of factors behind the issue.

"The commission will hold its meeting on January 11 in Islamabad and select the executive director from the three names already shortlisted by the HEC Board," Dr. Mukhtar said.

He claimed that the commission remained busy in bringing its house in order throughout 2015 and hoped the current year will see improvement in higher education.



Tech Times, Kamyab Pakistan ink MoU for joint cooperation

STAFF REPORT ISB: A memorandum of understanding has been signed between the weekly Techno-



preneurship training, workshops, conferences and various types of events for awareness creation among university youth specifically and other communities generally, and socio-economic development of the society.

They also agreed for mutual sharing and exchange of information and materials like literature, videos, and other data for designing of common activities to promote grass root entrepreneurship using technology.

Times, and Mansoor Malik from Kamyab Pakistan signed the agreement.

Under the MoU, both the sides would approach the population, and most importantly our youth, more effectively in order to create a profound understanding for the necessity of science and research as a guarantee for life quality and to fill youngsters with enthusiasm for scientific careers.

Both the sides have agreed to work together for identification of core Areas for mutual cooperation, sharing their expertise with each other in facilitating entrepreneurship through science and technology, arranging

NOTICE

The office has established an Investigation Cell in order to unfold illegitimate activities as well as sensitize our readers on grey areas in various sectors including Science & Technology, Energy, Information Technology, Agriculture, Environment, Education and Health. Under this initiative, we plan to start publishing articles and news reports this Cell would clear after thorough scrutiny of information and related documents. Our readers can also share with us any information or documents about any illegitimate or non-professional activity or policy in these sectors for a good cause. Their identity would be kept confidential in any case.

Information can be shared at: +92 51 2607219 Mobile: 03336383241 Email: ic@technologytimes.pk

Meeting projects climate change impacts on snow leopard

MONITORING REPORT ISB: The Global Snow Leopard & Ecosystem Protection Program (GSLEP), a joint initiative by all 12 Central and South Asian, that are home to this endangered big cat, held a meeting in Paris, during the United Nations Climate Change Conference (COP 21). The main agenda of the meeting was to highlight the impacts of climate change on snow leopards, their ecosystems and the livelihoods of local villagers residing in snow leopard habitat. The committee's co-chair, Sabir Atadjanov, Director of the State Agency for Environment Protection and Forestry of the Kyrgyzstan, underscored the need for the GSLEP program to link community-based snow leopard conservation, a cornerstone of the program's approach, with efforts to improve

climate adaptation capacity in this ecologically fragile region. John Farrington of WWF US, updated the attendees on how the current, rapid warming in the snow leopard's range is affecting glaciers, permafrost, precipitation, water resources, and weather phenomena, which in turn have large consequences for ecosystems, wildlife, and human livelihoods in these areas. He pointed out that glaciers in snow leopard range areas were already in retreat, particularly in the southern and eastern parts of the range. With a mandate to secure at least 20 landscapes for snow leopards by the year 2020, the GSLEP program is currently in its management-planning phase, where countries specify concrete steps to be taken in order to secure the landscapes they've identified as priority areas.

Yawning need for rainwater harvesting

Water shortage – both portable and irrigation – in Pakistan is getting critical with every passing day mainly due to the negative impacts of climate change and subsequent rise in whether temperature. Water flows in rivers are constantly on the decline while storage capacity of water reservoirs is shrinking leaving less water availability for irrigation human usage. If this situation persists in the country, which heavily depends on agriculture sector for survival, would face food security issue in near future. Since most regions across the globe suffer water shortage, various rain water conservation methods like groundwater exploration, aquifer recharge technique, water conservation and rainwater harvesting have been developed. Rainwater harvesting has emerged the only method to control flooding and conserve water for multiple purposes. India has made it mandatory for all new structures in big cities to have provision for rain water harvesting. Estimates suggest that 60 per cent of the world population would be urbanized by 2025. Reduced water supplies subsequently would place additional stress on people, agriculture and environment and could spark conflicts. Improved water resource management, however, can help reduce vulnerabilities. Rainwater harvesting is a technology used to collect, convey and store rain from relatively clean surfaces such as a roof, land surface or rock catchments for later use. This technique can provide water for human consumption, reduce water bills and lessen the needs to build reservoirs, which may require the use of valuable land. Pakistan's Potohar Plateau including Chakwal, Jhelum, Attock and Rawalpindi districts of Punjab province, covers an area of 2.2 million hectares and receives as much as 70 per cent of its precipitation in just the monsoon season. The rainwater harvesting can be a cheap, safe and sustained way of water supply throughout the year. It has been observed that farmers hardly adopt news agriculture techniques and remain stuck to the conventional methods, which are not workable in the modern day needs. The adverse impacts of climate change could exacerbate the crisis in the country on the verge of being classified as 'water scarce' with per capita water availability falling to 1,000 cubic metres. This method also helps raise the groundwater table from 450 feet to 200 feet in rural areas. Rainwater harvesting is a relatively new and innovative concept for many farmers in the country, however, the farmers community could be sensitized about the benefits of this technique. The government needs to come up with feasible rainwater harvesting programmes for arid areas of the country, otherwise, growing water stress has the potential to turn the situation into a catastrophe.

AGRITECH



Mirza Abdul Aleem Baig

INFORMATION and Communication Technologies (ICTs) have turned into the miracle medicine for curing any country from the diseases of corruption, mismanagement, poor governance, inflation, monopolies, illiteracy and so forth. ICT tools and techniques to support good governance have considerably changed with the appearance of social media, simulation techniques, opinion mining, open government data, text analytics and visualization. Today, people are more connected than ever before through ICT, linked to family, friends, social groups, and increasingly, government. Similarly, ICT tools are empowering to engage with government and find clarity on issues that touch their lives. In devel-

oped countries, governments are regarding the call to deliver information in a way that create transparency and demonstrates accountability.

In every sector, information and communications technologies (ICTs) are powerful tools for controlling corruption and ill practices. ICT works principally well when they are embedded in extensive institutional reforms. Generally, ICTs for good governance and controlling corruption operate by shining a bright light upon institutional development. ICTs improve transparency particularly at the transactional level, at the same time offer opportunities for easier access to public records, and establishing linkages among geographically separated structures for better accountability.

In every part of the world from industrialized to developing countries, governments are putting information online to provide better services for citizens and good governance. Globally, there are various countries that are

aiming towards refreshing their public administration by making it more proactive, accountable, service-oriented

and its governance. Governments around the world are, therefore, making use of ICT as a standard for promoting



Simple, Moral, Accountable, Responsive, and Transparent (SMART) electronic government (e-government). Generally, e-government incorporates three dimensions:

- Democratic dimension

(e-Democracy): Focusing on the political processes and interaction between the constituents and the government.

- Administrative dimension (e-Administration): Including various types of management work, internal and external routines.
- Service dimension (e-Service): Relating to the delivery of all types of services.
- Participation dimension (e-Participation): To engage with citizens and enable deeper contributions and support deliberative debate on policy issues and to support the democratic decision-making process.

UN member states have recognized broad public participation as an essential prerequisite for the attainment of sustainable development. Public participation always has positive repercussions on good governance and adding the 'e' can make good governance better and bad governance worse. Establishing good governance and public participation have

become a key concern for sustainable socio-economic development. It has been acknowledged that development cannot take place without sound and capable governance.

Today, technologies in computing, information system and communication have led to the death of distance and time. Networking technologies work exceptionally fast and can improve anything and everything. Using ICTs to promote, as stated in United Nations Millennium Declaration, "democratic and participatory governance based on the will of the people," may lead to more responsive and effective government. In a nutshell, democracy, good governance and modernity cannot be imported or imposed from outside a country. Let every forum of policy makers, political leaders and ICT professionals' converse and fabricate a comprehensive set of recommendations for the successful execution of anywhere-anytime citizen-centric e-Governance across Pakistan.

ENVIROTECH



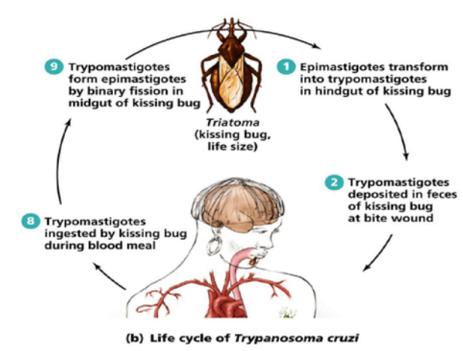
Suhail Rahujo

THERE ARE two types of strange creatures found on this simple earth whose characteristics are very similar in some or many ways. Parasites are the micro creatures that are always dependent upon other living things for their survival. Politicians are also being dependent upon other people for their survival. Host of parasite always look after it for its survival but in return, parasite always attacks and utilizes all available resources which are belonging to host originally. Poli-

cians are always selected by the people whom they are dependent of but in return, they utilize and own all types of resources which are the sole property of the people. Parasites need a medium to get an entry into the body of host so that it may reside and destroy hosts by only favoring to itself. These mediums are for e.g. misquotes which are living in the polluted water. Politicians also need a medium to get an entry to occupy to rights of people so that they may live a luxurious life by snatching the happiness of the people. These mediums are for e.g. terrorists which are living in the polluted society.

It is the common nature of the host which is always proven to be weak and thus it is easy for the parasite to

Parasites vs politicians



get an entry first and then try its level best to decrease the immunity. Despite the weaknesses and fatal health experienced, host is not willing to do preventive measures to stop the parasitic attack and lead his life until death

will knock his door. Same is the case with politician and people. It is a common nature of the people who always declared himself weak and thus it is easy for the politician to attack on the rights of people first and then to mini-

mize the power of freedom of expression treacherously. Despite the huge tension equipped life, people are not willing to change their fate by carefully selecting the politician.

If host is powerful and he knows how to make our immune strong then there is no chance for the parasites to attack and not only this, parasitic behaviour will be changed into symbiotic relationship and thus neither the host nor that parasite is harmed and both will mutually benefit to each other. Same condition is for politician and people too. If people are powerful enough to understand what are their rights and how to own them wisely then there is an obvious chance for the people and politician to live in a friendly environment

and every types of rights are being shifted and handed over to people at their door step.

Like heavy dosage of antibiotic medicine may kill many of our own living cells and may weaken our body which is always not prescribed. Excess of politicians may violate various rights of common people and may induce pessimistic thoughts in the society which is always not suggested.

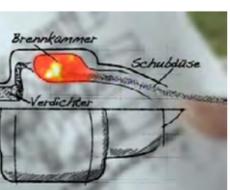
Literally speaking, Politicians are types of human beings that possess the parasitic characters thus are in the continuous charge to suck the blood of their people whom they benefits. Comprehensive Research on One Parasite and One Politician in One Laboratory can shock the world.

REPORT

Small scale gas turbine jet engine developed indigenously

MOST OF us would have surely seen supersonic jets cruising in the high skies with speeds greater than the speed of sound. Their terrifying sound and excellent maneuverability have always fascinated us but the question which provoked my curiosity since childhood was that what those covert forces are which enable this magnificent flight. Flying like birds have been a very old dream of mankind which became a reality when we understood the basic forces of nature like lift, drag and pressure. However, man didn't only rely on the invention of airplane but now he wanted to fly faster and faster in the skies. Propeller engines were not powerful enough to make this ambitious dream come true hence efforts be-

provoked them to invent an engine which will be free of these problems and would cruise extremely fast in the skies. Ohain thought of using Newton's third law of motion to realize his dream. According to that, every action has an equal and opposite re-



action, as a deflating balloon experiences an opposite force due to the discharge of air. An engine based on a similar principle would be desirable to achieve incredibly high speeds. This engine could be as following:

The air enters from one side of the engine, is compressed and brought to a combustion chamber where combustion takes place. The heat produced by the combustion will explosively push the air outside through a Nozzle and the engine would experience enormous thrust in the opposite direction. Ohain named this machine the Jet engine.

Nobody knew that a machine based on such a simple principle would remain a crucial part of aviation even after 85 years of its invention. A jet engine is heart of today's modern aircraft and enables

a quick and elegant flight.

Let us introduce our indigenously designed and made Gas turbine jet engine in Pakistan. The basic principle is still the same as of Ohain's or Whittle's engine. Out Jet engine consists of four main components. A compressor compresses the incoming air and increases its pressure. This compressed air is mixed with fuel in a stoichiometric proportion and the mixture burns explosively. The hot gases discharge through the exhaust nozzle (visible as glowing flame in figure). These fast moving gases produce thrust as well as keep the compressor and turbine in operation.

The self-sustaining speed of this engine is about 20,000 RPM and can achieve over 70,000 revolutions per minute. The air is compressed to a pressure of 21 PSI (pounds per square inch) producing a pressure ratio of 1.4. The exhaust gases reach a temperature of 600°C and a velocity of 267 m/s. The gas turbine engines have mainly two applications, one in transport as it produces thrust and second in power generation. The above described engine can be employed in both cases after small modifications. The smaller version of this engine is capable of producing 7 kg(70 N) of thrust or 8 kW of electrical power. However, the bigger version can achieve 30 kg(300 N) of thrust or 37 kW of electrical power. These micro turbines are ideal for small power generation units especially in remote areas. Their efficiencies can be significantly higher than other thermal engines. Other applications include jet powered vehicles, racing cars, aircrafts and research-

gun to develop a new kind of engine. A German physicist Hans von Ohain and an English pilot dreamed of this extraordinary machine for the first time. Steady flying planes simply could not compete the flight of their imaginations. Furthermore, slow speed of ordinary propeller engines, their noise and exhaust annoyed these two inventors too much and

INFOTECH

2015 in review telecom sector on growth trajectory

THE YEAR 2015 was bad for the telecom industry of Pakistan as no new foreign direct investment (FDI) came in, all the cellular operators were struggling to increase their average revenue per user (ARPU) to become more competitive and coverage of 3G/4G services was to be expanded, but long-awaited merger was announced in the outgoing year.

Similarly, long-awaited telecom policy was also announced by the Pakistan Telecommunication Authority (PTA) at the end of the year, while Mobilink-Warid merger started the consolidation process in the industry.

It was expected and after the successful merger a new merger is on the scene.

The PTA failed to announce the auction of the remaining available 4G spectrum. None of the existing operators may show interest in it even in the next year.

The finance ministry twice asked the PTA to do auction in order to create budgetary support of around Rs65 billion for the federal government.

The PTA allowed the mergers and acquisitions (along with allocated 100 percent frequency spectrum) even by the two existing operators, provided they have met all the licence obligations, including payment and rollout requirements.

According to the telecom policy, whether a merger or acquisition should be allowed to proceed is a competition matter, which is outside the jurisdiction of spectrum management, and legitimate mergers should

not be impeded by an inability to transfer spectrum licences. Therefore, except where there are overriding technical reasons, or reasons arising out of the national interest, the spectrum rights and obligations of licences will be transferable to the merged or acquiring organisation.

PTA and Pakistan Electronic Media Regulatory Authority are required to intimate the Frequency Allocation Board (FAB) of any merger/acquisition. Interestingly, the telecom policy was announced soon after the Mobilink-Warid merger news.

Market sources said both the companies had to get clearance from regulators, like Securities and Exchange Commission of Pakistan, Competition Commission of Pakistan (CCP) and others.

Zong and Ufone are expected to go for consolidation to remain competitive. After the announcement of the merger, the total subscriber base of the Mobilink-Warid would reach 45 million. Telenor is second with 33 million, Zong 23 million and Ufone 19 million. ARPU of the telecom industry is Rs205.

The merger in the telecom industry was expected for the last five years. Warid had conducted due diligence with a number of local and international players for that.

Industry experts believed that the telecom sector in Pakistan is not too big for five operators; hence mergers in the industry were needed. More consolidations are expected within the next couple of years.

During 2015, good growth in the 3G subscriber base was recorded. Already two million subscribers have started using it, while 4G services subscribers stood at only 400,000. The main hindrance in adoption of 4G service is high cost of 4G-enabled handsets, while Zong, the only company, which acquired the licence of 4G was unable to get the added advantage of the licence.

Customers' complaints regarding the cellular services



increased as all the telecom operators were working on network improvement and integration project after the launch of 3G/4G.

The industry is expanding the network and expecting growth in data subscribers and services.

Impact of Biometric: Total number of mobile subscribers stood at 140 million when the telecom industry started biometric verification of the SIM cards at the end of 2014 on the instructions of the federal government to curb the misuse of mobile phones in terrorism and other crimes.

The PTA data showed that the total mobile subscribers were 120 million by October 2015 after the completion of biometric verification process.

Telecom operators had to invest tremendous effort and resources in this nationwide activity owing to the security situation in the country in the beginning of 2015. However, this activity and investment of telecos seemed to be futile as a tragic incident of the Army Public School took place in which biometric verified SIMs were reported to be used by the attackers.

Fraudulent activities to deceive innocent public in the name of Benazir Income Support Programme stipend, along with many other text message frauds also continued. The authorities are still unable to check this. Interestingly, no such verification was ever done in any part of the world, even in Afghanistan, which has been in a state of war for over a decade and Saudi Arabia where millions of pilgrims visit every year.

Tax issues kept haunting the industry players. The government turned a deaf ear to their demands. The example was an imposition of 19.5 percent general sales tax on data services by the Punjab government. The Punjab government, however, withdrew the tax after six months of its imposition.

None of the operators had deducted this tax from their users in the six-month period (June-November 2015) to promote data usage in Pakistan.

Among many other taxes, sales tax of 19.5 percent on telecommunication and data services is levied in Khyber Pakhtunkhwa and 18.5 percent in Sindh, which is impeding growth of much

required broadband proliferation.

The industry has been so far unable to create local content for the data proliferation, while the data subscribers are mainly using data for emails, global social networking websites and chats.

The rapid data growth is possible only when the local language content will be created by the stakeholders in Pakistan or literacy rate is increased.

India is a successful example of data proliferation through local content development. The telecom industry is not in a mood for further investments due to declining ARPU, increasing taxes and slow growth of data.

A State Bank of Pakistan's report said telecom companies are not reinvesting much and repatriating most of their earnings.

It is important to recall that the telecom sector had the second largest share in FDI in Pakistan after the financial sector.

Its contribution in profit repatriations has generally remained much less than other sectors, as stiff competition and heavy taxation never allowed firms to raise their profit margins. Revenues of the telecommunication companies are constantly declining.

The government policy-makers need to revisit their priorities and create cushion for the once highest FDI attracting industry and one of the largest tax contributing sectors. Otherwise, it will be too late to decide and take measures.

By Jawwad Rizvi

By Usman Butt



By Faizan Afzal

EDUCATION TECH

Investing in higher education

EDUCATION IS the most powerful weapon and tool that we can employ to eradicate poverty, to nurture puerile minds, to develop ingenious solutions, to banish the scourge of terrorism and the most paramount of all to make us capable enough of standing, with our heads raised, among the comity of nations. Where primary education helps nurture the pre-mature minds; Higher education aides in building economies that control the world.

It is an era of "knowledge-based economy" defined by OECD (Organisation for Economic Co-operation and Development) as "economies, which are directly based on the production, distribution and use of knowledge and information." The term "Human Capital" is the core of "knowledge-based economy". Higher education institutions deliver this "Human Capital"; and thus play a paramount role in the economic development of their countries.

The impact education can have on the economies of countries and its citizens can be seen easily by a mere look on the investment of OECD (a group of 34 countries including USA,

UK, Germany) countries on Higher Education and the benefit they procure of such investment. The OECD countries on average, directly invest more than USD 30,000 in public sector funds to support an individual pursuing higher education. But look at the return; these countries get by investing such a huge amount on higher education. For example, the net return on the public costs to support a man in tertiary education is more than USD 91,000, on average across OECD countries - more than three times the amount of the public investment.

Singapore, a small country with a population of just 5.3 million, has exports of \$518.9 billion particularly in electronics, chemicals and services; 17 times more than Pakistan. This country has the highest trade to GDP ratio in the world. South Korea with a population of 50.2 million i.e. one fourth of Pakistan has exports of \$572.66 billion mainly in semiconductors, wireless telecommunication equipment, motor vehicles; 19 times more than Pakistan's export which are just \$29.8 billion. It is the only developed country included in the group of Next

Eleven countries. These awful figures may impress us but there is a lot of investment these countries have made in educating their youth. The budget of

average of 6.3%. This is how these small countries have reached to such an astonishing level of development.

The alumni of a single

contributed 2.8% of UK GDP, generated significant employment opportunities across the economy, accounting for 2.7% of all UK employment; this was

with spending of 4.6% (2013) and 3.9% (2012) respectively of their GDPs on education while we spend just 2.5% of our GDP on education. The Science De-

educational institutes are the best places to provide such an environment.

Countries don't make progress with roads, Metros and Orange Trains rather it is an outcome of their development. We need to understand that the infrastructure and development we drool over in developed countries is the result of their advancement in technology and research. They invested in their laboratories before investing in roads and trains. We are "180° out of phase" with the developed countries while making investments in Education and infrastructure and kudos to our innocence that we still dream that we can develop.

There is only one way to development and it passes through the bridge of education, and if we will fail in constructing that bridge than we will definitely fall in a river and without learning, one cannot even swim to the other side.

I suggest: 20.5 billion rupees were allocated for Higher Education in the Budget for the Fiscal year 2015-2016 by the govt of Pakistan and this account to only 0.46% of the total budget. Govt. must take steps to increment this no to at least 3% of the

Federal Budget by the year 2018.

In lieu of establishing new campuses without Highly Eligible Faculty and appropriate Labs, Govt. should avail existing universities ameliorate their faculty and research facilities by hiring international Faculty members and engendering more scholarship for local graduates for their PhDs abroad.

Special Budget should be allocated for establishing International standard Libraries and updating the current ones.

There is an inadequate mechanism for checking the Quality of Research papers published by Local researchers. HEC uses Impact Factor to quantify the Quality of Research articles, but there are many imperfections in utilizing Impact Factor because it takes into account the overall citations of the articles of a particular journal in which the article is published not the article itself. At least two other matrices like H-Factor, relative citations, SJR should withal be used. By ameliorating the quality of our research Papers, we can improve the international ranking of our universities and can magnetize an abundance of foreign students.



a single university in Singapore, National University of Singapore, is 160 billion rupees which is several times larger than the total budget of all the universities of Pakistan. In 2010, South Korea spent 7.6% of its GDP on all levels of education - significantly more than the Organisation for Economic Cooperation and Development (OECD)

University MIT in USA have launched 30,200 active companies, employing roughly 4.6 million people, and generating roughly \$1.9 trillion in annual revenues which is even greater than the GDP of world's 10th Largest Economy India. A report published by "Universities UK" show that in 2011-12, the higher education sector in UK

equivalent to 757,268 full-time jobs.

"Education is the investment our generation makes in the future." Mitt Romney

If we look at the expenditure on education as a percentage of GDP of different countries, we find it astonishing that even countries like Afghanistan and India are way ahead of Pakistan

development Budget of Pakistan is just 1 billion while that of India is 200 billion. This is where the priorities lie. Innovation, development and progress are only possible if a country is producing creative minds and creativity is groomed at universities. Creativity demands an environment where ideas may flourish and lead to innovation and

INFOTECH

Emergence of e-sports: Pakistani youth in the digital age

SINCE ITS EXPLOSION across the country's socio-cultural landscape over a decade ago, Computer Network Gaming has left a lasting impact on the lives of Pakistani youth growing up in the 21st century. From its earliest beginnings as a small cult phenomenon taking root in seedy internet cafes, network gaming has more or less become the mainstay of how today's tech savvy youth are expected to socialize and form a healthy hobby around.

Easy to access and with a relatively small learning curve, computer gaming has reached a point where it can be seriously considered to rival youth participation in more traditional outdoor and sporting activities. With Murphy's law providing, smaller, faster and cheaper computers to the masses, the image of pubescent pre-teens and adolescents sitting in their rooms glued to their computer screens has become a mainstay of even middle to low-income households across the country.

Gone are the days of the

age-old fascination with expensive sporting kits. That sports bag with gloves, pads, squash rackets and hockey sticks. Instead it's all about expensive computer keyboards and state of the art headsets all sought to gain a competitive edge on what is now termed as eSports across the world.

So far this phenomenon has been the mainstay of network gaming cafes and off-hour computer labs within schools and colleges across the country. The very idea of network gaming has for more than a decade revolved around a set of computers wired together in a single premises with one of them often dedicated as the host server.

This, however, has changed dramatically with the advent of the Pakistan Gaming Lounge (PGL). Developed and hosted by ICT giant PTCL, PGL offers Pakistan's first online servers dedicated to promoting and organizing eSports within the country. Featuring international tournaments, discussion boards and numerous other help-

ful resources, www.GamingLounge.pk offers a unique platform for the country's gaming community to socialize and interact on.



This move towards an online, cloud-based platform highlights an important step in the development of eSports within the

country. Located within PTCL's state-of-the-art data centers, PGL's servers are geared towards providing a completely lag free gaming

help, competitions across this platform are ensured as being fair and without the presence of the usual profanity and bullying charac-

teristic of this genre. Acting as digital referees the team at PGL can be further seen as bringing a form of organized regularity to some

of Pakistan's most popular computer games. These include the highly popular First-Person Shooter (FPS) games Counter-Strike

promoting other multiplayer games such as Minecraft and Team Fortress the service further aims at introducing other popular titles to the Pakistani public, further broadening the scope for eSports within the nation's gaming community. The vast potential of this platform can be easily gauged from the response it received during a live programming competition that took place at the Centaurus Mall in Islamabad quite recently. Hosted on PGL's online platform the live event featured intense rivalries within a highly contested tournament amongst the twin cities top gamers. In itself, it presented an exciting opportunity to help boost the profile of Pakistan's burgeoning gaming community, providing a unique and much-needed platform for them to socialize and compete on.

Participants at this event could be seen wholeheartedly taking advantage of this rare chance amid considerable enthusiasm. Headset in place and mouse in hand, the scene itself presented a

stark image of how far the very concepts of socialization and hobbies amidst our youth have changed in just over a decade into the Digital Age. Perhaps most surprising was the interest showed by spectators for whom a heated competition unfolding in Virtual Reality proved just as exciting as any 'Real' sporting event.

By creating greater awareness for such kinds of eSports in the country, events like these offer an exciting chance for young gamers to participate in a growing and increasingly popular global trend. Further promoting and broadening the scope for eSports within Pakistan allows the country's small yet growing gaming community to better represent itself and compete on a larger regional or even international scale. Perhaps the day is not that far when donning the green uniform of Pakistani sports-teams will hold just as much importance within the arena of eSports as it does now for more conventional sporting competitions.

By Abid Saeed

SCIENCE TECH

Magnetic Hyperthermia

MAGNETIC HYPER-THERMIA also known as magnetic nanoparticle mediated intracellular hyperthermia, is a thermotherapy which involves targeting of a tumor with the help of magnetic nanoparticles in the presence of external alternating magnetic field that causes production of heat through Néel-relaxation loss of magnetic nanoparticles. Heat generation through Néel-relaxation is due to rapid changes in the direction of magnetic moments, hindered by anisotropy energy that tends to turn the magnetic domain of the magnetic nanoparticle in a given direction according to their crystal lattice structure. As a result, temperature of tumor cells is increased within range of hyperthermia temperature (41 - 46°C).

Tumor cells are more sensitive to heat as compared to normal cells due to poor vascularization, so

the survival rate of tumor cells decrease drastically by increasing temperature and at one stage the tumor cells burst. This thermotherapy specifically destroys the tumor cells without destruction of neighboring healthy cells. There are various magnetic nanoparticles which have hyperthermia potential. In first category magnetite (Fe₃O₄) and maghemite (Fe₂O₃) are included. There is another category which is based on ferrites for example cobalt ferrites (CoFe₂O₄), manganese ferrite (MnFe₂O₄), nickel ferrite (NiFe₂O₄) and lithium ferrite (Li_{0.5}Fe_{2.5}O₄). Another category which is based on metallic nanoparticles such as Ni, Co, Mn, Zn etc. Among all these magnetic nanoparticles, magnetite (Fe₃O₄) nanoparticles are the most promising for magnetic hyperthermia because magnetite has all those characteristics which

are required for biomedical applications such as biocompatibility, non-tox-

icity, superparamagnetism, water-dispersible, ability to leave reticuloendothelial system (RES) and easy preparation. Magnetite can be stabilized by using different cap-

ping ligands for example dextran, carboxylic acid, polyvinyl alcohol and li-

est method to synthesized iron oxide nanoparticle is co-precipitation. There are three hyperthermia treatments 1) Local hyperthermia treatment is used to treat the small portion of body such as tumor and it requires very high temperature to

treat the tumor. 2) Regional hyperthermia is used to treat the large area of body such as an organ, body cavity etc. Various methods are used to perform regional hyperthermia such as regional perfusion and in this technique not too much high temperature is required. 3) Whole body hyperthermia is used to treat metastatic cancer i.e. cancer which has spread within whole body. General mechanism of magnetic hyperthermia consists of two steps 1) preparation of magnetic nanoparticles 2) injection of magnetic fluid carrying magnetic nanoparticles into tumor site. There are various ways through which magnetic fluid can be injected to tumor. Arterial injection is that way in which magnetic fluid is injected through artery supply of tumor. Direct injection is that way in which magnetic fluid is directly injected inside the tumor.

The magnetic nanoparticles can also be strategically surface functionalize to target the tumor cells. Active targeting is very complicated way to inject magnetic fluid inside the tumor. This way is related to antibody targeting so for antibody targeting magnetic nanoparticles are coated with antibody of the desired tumor. The efficiency of this thermotherapy is determined by the ability of magnetic nanoparticles to be collected inside the desired area of body. Once the magnetic nanoparticles are entered into the cancer cells through endocytosis they are heated with the help of an external localized and alternating magnetic field. An alternating external magnetic field causes the magnetic nanoparticles within the tumor tissue to vibrate and this vibrational energy is ultimately converted into heat causing the increase of lo-

cal temperature of cancerous tissue leading to its destruction. Magnetic hyperthermia is most promising technique as compared to other therapies because of these advantages; 1) a single administration in tumor is sufficient, 2) higher efficiency for low heating temperature due to intracellular heating, 3) possibility to target the tumor cells selectively and 4) magnetic hyperthermia can also be used in combination with radiotherapy and chemotherapy. Magnetic hyperthermia is most favorable technique to enhance quality of cancer treatment. Methods for injection of nanoparticles and active targeting of the tumor cells, development of different more efficient heat-producing nanoparticles, and monitoring of heat distribution are the essential parts of the upcoming research in this direction.

By Amber Zahra and Dr. Muhammad Irfan Majeed

Unesco assisting in developing flood warning system

STAFF REPORT ISB: Unesco, PCRWR and PMD have jointly organised a two-day international workshop



aimed at setting up a common understanding and direction for river modelling data requirements.

The workshop is part of the Unesco's 'Strategic Strengthening of Flood Early Warning and Management Capacity of Pakistan' Project, phase 2 which was launched in March 2015.

Japanese Ambassador Hi-

roshi Inomata, who was the chief guest, commended the immense efforts of Unesco, PCRWR, JICA for their efforts.

He said that the workshop will further accelerate efforts for improving Strategic Strengthening of Flood Warning and Management Capacity Project.

In his remarks, Dr. Shahbaz Khan, Director, Unesco Regional Science Bureau for Asia and the Pacific, though capacity of Pakistan Meteorology Department (PMD) is enhanced but it needs further support to enhance flood forecasting capacity in the Jhelum, Chenab, Ravi and Sutlej Rivers.

These rivers have trans-boundary catchments which can use satellite based rain-

fall estimates developed under phase-I of the flood project to improve forecasting ability. Phase-II of this project will focus on the Eastern Rivers of Pakistan.

JICA Representative Mitsuyoshi Kawasaki said that JICA is contributing to the Grant Aid (GA) Project through UNESCO to protect and mitigate flood damages since 2011 through developing Indus IFAS (Integrated Flood Analysis System) Models.

Dr. Ghulam Rasool, Director General PMD, expressed that till 1991, there was only one weather radar in Pakistan, and during 90's Government of Japan assisted PMD to deploy further three (3) radars, which are very crucial in predicting the monsoon floods.

Monet achieves PCI DSS version 3.1 certification

STAFF REPORT ISB: Monet (Private) Limited, Pakistan's first independent financial services hub, has successfully secured the PCI DSS 3.1 accreditation.



Certified by the leading, globally recognized QSA Company, Risk Associates, Monet is now amongst the few, handful of companies worldwide that have achieved this latest security certification.

The PCI DSS certification is a set of comprehensive requirements for enhancing payment account data security developed by the PCI Security Standards Council. The certification focuses on data security measures on payment transaction routing, storing and processing to protect cardholder's data.

Leveraging upon the PCI DSS certification, Monet has the ability to offer its customers - banks and merchants - with the highest level of security available in the market.

Monet's compliance with global certifications provides an opportunity to offer payment services along with value-added features on a global scale and in a secured environment. Ali Abbas Sikander, CEO of Monet remarked: "Securing the PCI DSS certification further strengthens Monet's position as a payment services provider. This certification gives us the opportunity of providing our customers with cost-effective payment solutions."

Cybercrimes bill passage still looks a hard task

STAFF REPORT ISB: The government's proposed cybercrime legislation has met a stumbling block in the opposition-dominated Senate as its chairman Raza Rabbani has vaguely told the government the controversial bill will not be passed unless it is made acceptable to all stakeholders.

Expressing reservations over the 'very controversial' draft of the Prevention of Electronic Crimes Bill, 2015, he last week asked the government to initiate fresh consultations while calling for the formation of a parliamentary committee to develop consensus on it.

He also suggested the government withdraw the earlier draft of the bill presented by the National Assembly Standing Committee

on Information Technology, as many lawmakers and civil society activists have reserved

contained dissenting notes from opposition lawmakers, especially from PPP, PTI



tions on the bill. Rabbani has recently speaking during the Senate session after Interior Minister Chaudhry Nisar Ali Khan offered to tone down the bill to address the 'genuine concerns' of the opposition.

The Senate chairman suggested a parliamentary committee be constituted and all stakeholders called for consultations to iron out differences. The bill presented in the National Assembly also

andn MQM. Speaker Ayaz Sadiq had referred back this bill to the committee with the direction to conduct a public hearing to make the legislation acceptable. The committee, however, skipped the open debate and deliberated upon the bill behind closed doors many times. The panel then presented the report to the lower house without addressing the stakeholders' concerns.

National Forest Policy being drafted with consultations

STAFF REPORT ISB: The government is preparing a comprehensive National Forest Policy in order to curb



deforestation and increase forests across the country while all provinces are finalizing the forestation measures at the national level.

Minister for Climate Change Zahid Hamid has recently informed the National Assembly during the question hour.

He said the process of consultation on the draft policy is in its final stage and revised version of draft policy will be presented before the Council of Common Interests in its next meeting for consideration.

Zahid Hamid said that the Climate Change is engaged actively with the provinces, including Azad Jammu and Kashmir, Gilgit Baltistan, FATA and CDA to finalize the forestation measures at the national level.

He acknowledged that the forest areas in the country is fast declining which is a point of concern as it is a contributing factor for floods, land erosion, devastating for agriculture and most importantly the environmental degradation.

He assured the House that once approved the National Forest Policy execution would be ensured in letter and spirit and we can't afford leniency in this regard as the country has signed various conventions and commitments on the subject.

Pakistan harnessing wind, but struggles to transmit power

STAFF REPORT ISB: With the aim of diversifying its energy mix and reducing emissions, Pakistan is no fast turning to wind energy by encouraging private investments but the government's transmission lines are not keeping pace with energy generation.

There are six wind energy projects in the country - two in Ghoro and four in Jhimpir, Sindh, feeding 309 MW into the national grid.

Set up by the Fauji Foundation, a welfare wing of the Pakistan armed forces, the 40 mammoth towers dotting the landscape are spread across 1,656 acres in Ghoro, Thatta district in the Indus delta.

Owned by the Foundation Wind Energy these two projects were built at a cost of \$125 million each with 66 per cent foreign loans and borrowing 33 per cent from local institutions.

144 students of S3H receive degrees at NUST convocation

STAFF REPORT ISB: The second Convocation of NUST School of Social Sciences and Humanities (S3H)



received a silver medal in Bachelor of Public Administration, Alishba Rasheed in BS Economics, and Sundus Zafar in BS Mass Communication.

The Best Teacher Award for the year 2015 was given to Saeeda Batool, a faculty member at Economics Department, while Assistant Professor Dr. Faisal Jamil was conferred the Best Researcher Award for 2015.

NUST Rector Engineer Muhammad Asghar also addressed the august gathering. He said that NUST was among the top 400 world engineering universities and among the top 100 young universities in the world, according to international ranking agencies. In his welcome address, S3H Principal and Dean Dr. Ashfaq Hasan Khan congratulated the graduating students and thanked their parents and the school's faculty for their hard work over the years.

Ayesha Amjad Qaisrani won the gold medal in MS Economics, Hira Nisar Khan in Bachelor of Science (BS) in Economics and Amina Mazhar in BS Mass Communication.

Mishaal Mariam Khan

Submarine cable fault affects PTCL broadband service

STAFF REPORT KHI: Broadband services of Pakistan Telecommunication Limited (PTCL) have been affected as there is a major breakdown in the India-Middle East-Western Europe (IMEWE) submarine cable, which has impacted the whole region of South Asia.

The IMEWE is an ultra-high capacity fibre optic cable system which links India and Europe via Middle East. Their three fibre pair system with total length of approximately 12,091 kilometres has nine terminal stations of nine telecom carriers from eight countries including Pakistan.

The cable fault has occurred somewhere between UAE and Karachi. The highest number of broadband users affected by this submarine cable fault belongs to the PTCL.

Chinese firm to build \$2.4b 1,100-MW Kohala hydroelectric project

STAFF REPORT MU-ZAFFARABAD: The China Three Gorges Corporation (CTGC) will develop the planned 1,100-MW Kohala hydropower project, a run-of-river scheme that will be built on the Jhelum River in AJK.

The project with the cost of \$2.4 billion is scheduled for commission in 2023.

The Kohala hydroelectric scheme will have a gravity, roller-concrete compacted dam on the upper branch of the Jhelum, 40 km from Muzaffarabad. The powerhouse, on the lower branch of the Jhelum near Barasala, will house four 275-MW Pelton turbines.

The CWE is required to construct the project on a build, own, operate and transfer basis.

The average tariff for the first 12 years was set at 8.9 cents per unit and during the following 18 years would be 5.1 cents per unit. The aver-

age tariff for the 30-year life of the project is 7.9 cents per unit.

The tariff ensures 17 per cent return on equity on

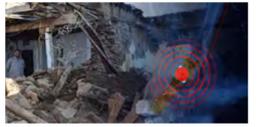


internal rate of return basis. The project is expected to earn carbon credit from the United Nations Framework Convention on Climate Change for clean energy development under the Kyoto protocol. The CTGC said the Kohala project is its largest investment in the Pakistani hydropower market.

The project is part of the China-Pakistan Economic Corridor, a 3,000-km-long network of roads, railways and energy infrastructure to assist development in Pakistan and boost growth for the Chinese-border economy.

Met Office capable to accurately calculate quake intensity

STAFF REPORT ISB: The Pakistan Meteorological Department (PMD) has 20



stations besides 15 centres of neighbouring countries to accurately calculate the intensity of earthquakes.

"The United States Geological Survey has only seven stations in this area, while Meteorological Office gets reports from 35 stations, including its own and neighbouring countries centres, and calculate average on their readings," said Met Office Director General Dr. Ghulam Rasool.

He informed that Pakistan falls in the South Asian region which has three big mountain ranges and seismic zone fault lines lie at their junction. He informed that in north there is a Euro-

sian plate which is still but in South there is an Indian plate which is moving making the zone more prone to receive earthquakes. The director general said that after October 26 earthquake with the magnitude of 8.1, almost 800 aftershocks have been received so far, adding that among this 150 shocks were above the intensity of 4 magnitude while the others were minor. He further informed that after the massive earthquake of 7.6 magnitude on October 8, 2005 almost 3,500 small and big aftershocks were registered for several months. He informed that more earthquakes received in the Hindukash Region and 80 per cent of earthquakes hit Pak-Afghan and Afghanistan-Tajikistan borders. The director general said that in last five years a rapid surge has been recorded in earthquake jolts as 543 were received in 2011, 754 in 2012, 675 in 2013, 771 in 2014 and 851 in 2015.

SLF taking initiatives to protect snow leopards

STAFF REPORT CHITRAL: Snow Leopard Foundation (SLF) Pakistan has been camera trapping in Terich Valley, which is helping determine the population of snow leopards and other ungulates in the region.

SLF has successfully captured on camera many wild species, including the snow leopard, wolf, ibex, fox, jackal, wild cat and cape hare by using the latest motion sensor camera with night vision. "The most important aspect of the study is the support from Terich Valley community which strengthened conservation efforts and encouraged SLF to safeguard endangered wild species in the area," says a statement issued by the SLF.

Given the magnitude of the destruction caused by recent floods in Chitral, SLF has decided to collaborate with Snow Leopard Trust to raise funds and provide relief to communities there.

Govt fails to control air pollution in Lahore

STAFF REPORT LHR: The people of Lahore city continue to suffer with polluted air while the authorities are lacking interest in redressing the menace, which is a direct threat to human health.

The Air Quality Monitoring Systems (AQMS), run by the Punjab Environment Protection Department (EPD), is not working properly, which means that nobody knows the actual situation of air pollution in a city with population of more than 100 million. The AQMS aimed at monitoring the air quality and pollution level in Lahore. The monitoring system today is almost out of order while EPD doesn't bother to maintain its annual repairing and maintenance on time.

In 2005, the Ministry of Environment in collaboration with JICA, started a project "Establishment of Environmental Monitoring System in Pakistan" to strengthen the monitoring capacity of federal and provincial environment protection agencies (EPAs).

The project was aimed at



establishing the foundation of EPA Punjab's building capacity in order to enhance regulatory compliance and environmental management.

Following the agreement, the Punjab government had received three ambient air monitoring stations that were installed in Lahore in 2007.

These three ambient air monitoring stations were equipped with 16 analysers. These AQMS remained fully functioning until 2010.

Remarks at both reports regarding AQMS mention that missing values were due to rapid load shedding and AVR tripping.

Concern expressed over land erosion in coastal areas

STAFF REPORT ISB: Senate Standing Committee, on Planning, Development and reforms has stressed the need for resolving issues of non-conventional security threats of the coastal areas of Sindh and Balochistan.

In its recent meeting, the Senate committee discussed the serious issue of sea erosion.

Kareem Khawaja, on the occasion said "We need to understand the gravity of issue in the provinces which are facing serious threats of sea intrusion and land erosion."

He asked the Federation to take interest in these issues and resolve them with the consensus of all provincial and political stakeholders. Representative of the Ministry of Planning informed the meeting that sea intrusion and land erosion was a provincial government issue and commission was working under the central government.

Pakistan Nuclear Society got new torch bearers

STAFF REPORT ISB: "Sharing information with the masses about the peace-

hid, in his welcome address, thanked all guests and PNS members for their presence.



ful uses of nuclear power is need of the time and dissemination of this information in systematic way is now the duty of forums like Pakistan Nuclear Society", said Dr. Ishaq Ahmad, former Chairman of the Pakistan Atomic Energy Commission (PAEC), while addressing the investiture ceremony of newly-elected council of Pakistan Nuclear Society (PNS) at the COMSTECH auditorium, here in Islamabad. Newly-elected President of PNS Dr. Syed Javaid Khurs-

He briefed about the Pakistan Nuclear Society and told the audience that PNS was established in 1992 to promote the awareness and understanding of the peaceful application of nuclear science, technology and allied disciplines in Pakistan. Talking about the objectives of the society, Dr. Syed Javaid Khurshid said, "The society is a credible advocate for the advancement and promotion of nuclear science, technology and allied disciplines in the country".

PARC trains 75 farm field officers from Malakand, Hazara

STAFF REPORT ISB: Pakistan Agricultural Research Council (PARC) has always acknowledged the support



of Japan International Cooperation Agency (JICA) for various development projects in Pakistan including the establishment of Plant Genetic Resources Institute (PGR) at the NARC campus.

Chairman PARC Dr. Nadeem Amjad said this while addressing the certificate distribution ceremony of Capacity Development Program of Agriculture Extension Services of KP at NARC in Islamabad.

He said that the project of capacity development of agriculture extension services in KP was started in January 2015 with the joint efforts of

PARC, JICA and KP Department of Agriculture Extension to train 100 Agriculture Extension Officers (AEOs) and 250 Field Assistants (FAs) about innovations and practical skill to provide better agriculture extension services to the farmers of KPK Province. In the first batch of training, 25 AEOs / SMSs and 50 FAs of Malakand and Hazara Divisions have been trained.

JICA-Pakistan Chief Representative Mitsuyoshi Kawasaki said JICA will continue support and cooperation for such joint programs for the promotion of agriculture sector in Pakistan for economy growth and food security.

Director General NARC Dr. Azeem Khan said PARC with the cooperation of international partners implementing Agricultural Innovation Program in Pakistan to improve productivity of agriculture sector and to uplift socio-economic condition of farming community.

BZU reshuffles chairmen, directors of various depts

STAFF REPORT LHR: In a major reshuffle, Bahauddin Zakariya University administration has rotated as many as 11 chairmen and directors of different departments by following its syndicate decision.

All those chairmen and directors, who had completed three years tenure in their departments are changed.

According to the different notifications, Dr. Abdul Qudoos Sohaih has been made chairman of Islamic Studies Department of BZU. Dr. Ghulam Shabbir Baloch has taken over as Chairman Communication Studies department. He has replaced Dr. Ashraf Khan. In Pakistan Studies Department, Dr. Javaid Akhtar Salyana, has replaced Dr. Muhammad Farooq as Chairman.

Dr. Abdul Rahim has taken over as Chairman Department of Arabic while Dr. Tariq Bhatti has replaced Dr. Ejaz Chaudhary in Physics Department.

Climate changes issues saw mix of highs & lows in 2015

STAFF REPORT ISB: While 2015 proved to be positive in terms of some landmark decisions taken both nationally and internationally to



deal with climate change, the country also had a fair share of challenges.

The government reinstated the Ministry for Climate Change (MoCC) in a bid to pay more attention to climate related issues and deal with them effectively.

Countries across the globe reached a historic agreement at the UN climate change conference in Paris in December after negotiating for two decades. They adopted an international accord aimed at transforming the world's fossil fuel-driven economy, within decades, and slowing

the pace of global warming.

Two earthquakes struck the country in last two months of 2015. The first one, on October 26, killed

300 people, injured more than 1,000 and turned thousands homeless in most parts of Khyber-Pakhtunkhwa.

The issue of municipal and hospital waste management remained unaddressed in the federal capital during the year. Air and water pollution continued to rise across the country in absence of an integrated environmental monitoring system due to negligence, and shortage of funds and technical staff.

Prime Minister Nawaz Sharif took notice of poor condition of forests in the country and directed the ministry to initiate prompt remedial measures. As a result, first forest policy was drafted, which is yet to be finalised.

Mobilink empowering women in KP through m-learning initiative

STAFF REPORT ISB: Mobilink Foundation, under its 'Make Your Mark' initiative, has teamed up with The Institute of Social and Policy Studies (ISAPS) and GuarantCo for 'SMS-based Adult Female Literacy Programme', which is enabling learners to get ICT-based education. Through this initiative, the company is educating around 4,050 women in eight rural districts of KP including Mardan, Swabi, Nowshera, Malakand, Haripur, Manshara, Kohat and Buner. "Our m-Literacy project started with 250 female learners, and as of now, it has changed the lives of more than 10,000 women across the country. Success of the program is based on the utilization of mobile as an educational tool, enabling us to reach areas without any formal schooling systems," said Omar Manzoor, Head of Corporate Communications - Mobilink.

Pakistan asked to upgrade flash floods guidance system

STAFF REPORT ISB: The world weather body has asked Pakistan to upgrade its current flash floods guidance system and expressed its willingness to help the country in this regard.

In a letter to Federal Minister for Climate Change Zahid Hamid, the World Meteorological Organisation (WMO) has said that although Pakistan is already leader in South Asia and using flash flood guidance system, it can become regional centre by upgrading its system to South Asia Flash Flood Guidance (SASFFG). The new system increases the scope of its application.

"Since its inception, there have been additional developments in early warning system in numerical weather prediction and satellite estimation of precipitation that should be reflected in the new efforts on SASFFG,"

the letter said. The purpose is to reduce vulnerability of the region to hydro-meteorological hazards, particularly flash floods, by developing and implementing a guidance system through strengthening regional and national capacity to develop timely and accurate warnings.

The Pakistan Meteorological Department (PMD) had been involved in implementation of the Pakistan Flash Flood Guidance System. The country is already a leader in the region in using such an early warning system.

