



Ministry of Information Technology
&
Telecommunication

YEAR BOOK 2017-2018

Government of Pakistan

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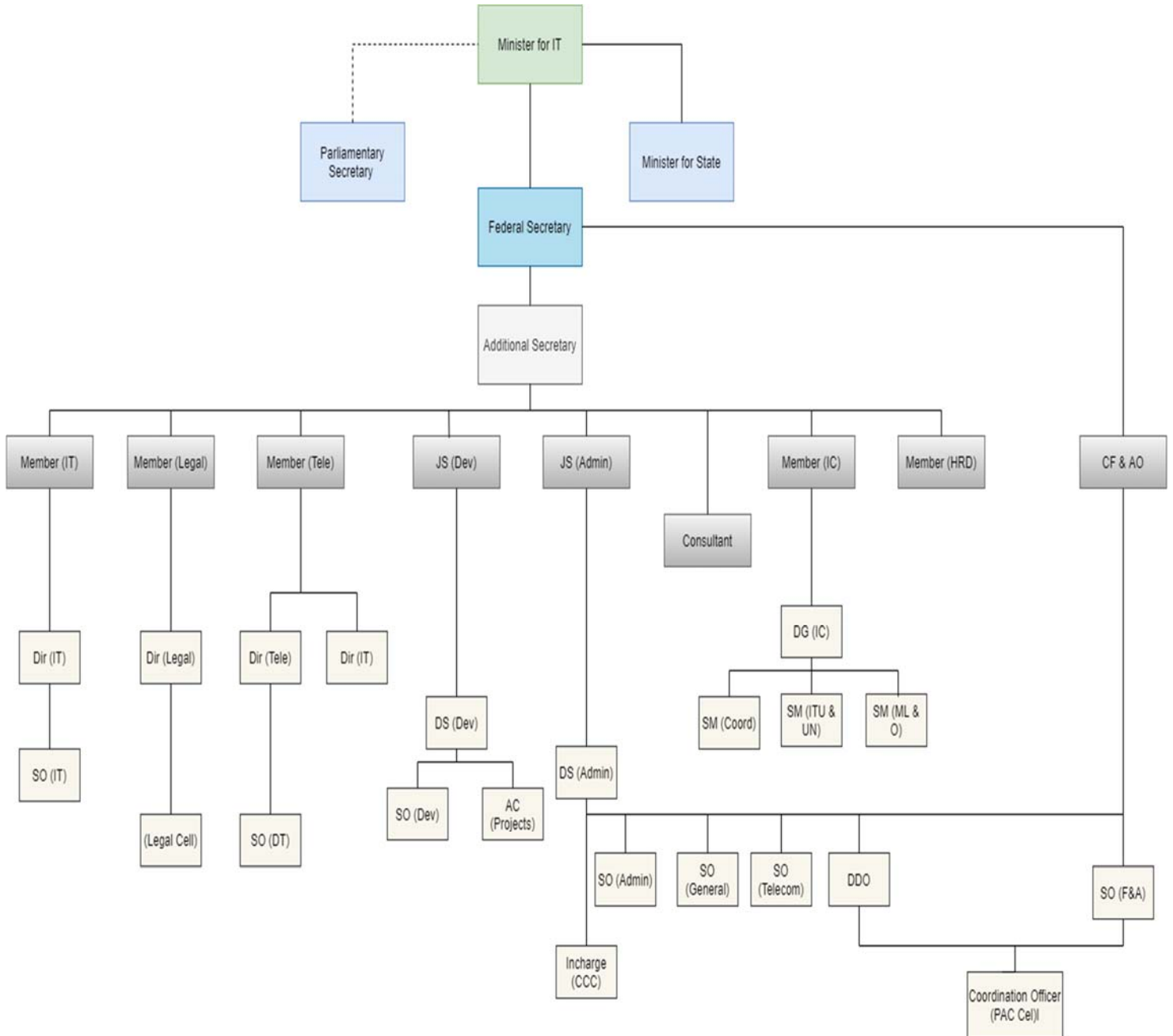
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Organizational Chart and Functions of the Ministry of Information Technology and Telecommunication

Organizational Chart



Functions of Ministry of Information Technology & Telecommunication

Information Technology and Telecom Division has a total sanctioned strength of 156 officers and staff. The Division comprises Administration Wing, Telecommunication Wing, Information Technology Wing, Development Wing, Legal Wing, International Coordination Wing, Human Resource Development Wing and National Information Technology Board (NITB).

ADMINISTRATION WING

The Administration Wing is headed by Joint Secretary (Admn) who is assisted by Deputy Secretary (Admn), three (03) Section Officers, one DDO, Incharge (CCC) and Coordinator (PAC Cell). Administration Wing provides support services to operational wings of Ministry of IT and Telecommunication and is primarily responsible for personnel management and general administration of the Ministry. The Administration Wing also handles work relating to Parliamentary Business in IT and Telecommunication in the National Assembly and Senate of Pakistan.

Parliamentary Business

Parliamentary business included reply of starred and un-starred question of National Assembly and Senate and briefs for meeting of standing committees and related sub committees were handled in this year by this Wing. Total 48 questions were received from National Assembly and Senate Secretariat during 2017-2018. Out of 48 questions, 21 questions received from National Assembly Secretariat i.e., 04 un-starred and 17 starred questions, whereas 27 starred questions were received from Senate Secretariat during 2017-2018. Moreover, 08 meeting of the National Assembly Standing Committee (Main Committee) and 03 meetings National Assembly Standing Committee (Sub Committee) were held during 2017-2018 including 18 meetings of the Senate Secretariat (Main Committee) and 11 meetings of Senate Secretariat (Sub Committee). These meetings were handled/coordinated by the Administration Wing.

Inter/Joint Ministerial Committees

Inter-Ministerial meetings for preparation of agenda for Joint Ministerial Commissions (JMC)/Sessions between Pakistan and other countries is also dealt by Admin Wing through Foreign Affairs Division,

Economic Affairs Division and Board of Investment. Proposals/MoUs/Agreements and other documents submitted/signed/under process with different Countries in the field of Information & Communication Technology (ICT), Coordination with various Countries. Matters relating to Prime Minister's Directive, President Directive, and Secretaries Committee's meeting, Council of Common Interest (CCI) is also dealt by Administration Wing.

DEVELOPMENT WING

Development Wing is headed by a Joint Secretary, and assisted by a Deputy Secretary, One Section Officer, and an Assistant Chief Projects. This Wing is responsible for processing of Development projects with various fora like Departmental Development Working Party (DDWP), Central Development Working Party (CDWP), and Executive Committee of National Economic Council (ECNEC). Development Wing processes release of funds to the executing agencies and follows up their utilization as well as dealing the administrative matters of National Information Technology Board (NITB), Pakistan Software Export Board (PSEB) and Virtual University (VU). During the year 2016-17, two (2) meetings of DDWP were organized and seven (07) projects were placed for consideration and three (03) projects were approved at a total cost of Rs.175.397 million. However, (03) schemes of SCO were recommended by DDWP to be approved by the CDWP. In PSDP 2016-17 funds to the tune of Rs. 1134.619 million were allocated. Out of these, Rs.406.040 million were allocated to nine (09) projects in Information Technology Sector and Rs.728.579 million against six (06) projects in Telecom Sector. Development Wing also processed the case of release of PSDP funds. Out of PSDP allocation of Rs. 1134.619 million, the funds to the extent of Rs.880.094 million were got released during the financial year 2016-17.

In addition to above, the Development Wing also deals with the administrative and coordination matters of the following:

Attached Departments /Organizations:

- i. National Information Technology Board (NITB);
- ii. Pakistan Software Export Board (PSEB);
- iii. Virtual University (VU);

- iv. Special Communication Organization (SCO);

This Wing deals with the PSDP Projects of Autonomous Organizations/Companies / Corporations

- 1) National Information Technology Board (NITB)
- 2) Pakistan Software Export Board (PSEB)
- 3) Special Communication Organization (SCO)
- 4) IT & Telecom Wings of Ministry of Information Technology & Telecommunication.
- 5) Technology Development Park Phase-I, Islamabad is a flagship project of Ministry of Information Technology & Telecommunications. Development Wing is entrusted to deal with the administrative matters pertaining to this project. This wing also facilitates the Project Director in a number of activities pertaining to execution of Technology Park Development Project until establishment of functional Project Management Unit (PMU).

TELECOM WING

Telecom Wing is a technical wing of IT & Telecom Division, providing input and support to the Ministry on all matters pertaining to telecommunications. The specific responsibilities of Telecom Wing are as follows:

- i. Formulation of telecom sector rules, policies and implementation frameworks.
- ii. Evaluation of all proposed PSDP funded telecom projects submitted by attached departments of the Ministry before onward submission to DDWP/CDWP/ECNEC.
- iii. Technical matters/issues pertaining to National Telecommunication Corporation (NTC), Special Communication Organization (SCO), Telephone Industries of Pakistan (TIP), Pakistan Telecommunication Employees Trust (PTET) and Telecom Foundation (TF).
- iv. Evaluation/Resolution of technical matters/issues pertaining to telecom industry in collaboration with Pakistan Telecommunication Authority (PTA).
- v. Evaluation/Resolution of Frequency Spectrum matters/issues in collaboration with Frequency Allocation Board (FAB).
- vi. Telecommunications related matters pertaining to International Telecom bodies like International Telecommunication Union (ITU), Asia Pacific Tele-community (APT), International Mobile Satellite

Organization (IMSO), International Telecommunication Satellite Organization (ITSO), etc.

vii. Monitoring of Universal Service Fund (USF) and Ignite (formerly National ICT Research & Development Fund) companies.

viii. Represents Government of Pakistan in joint Ministerial Conferences organized by various international bodies of the telecommunications sector.

Telecom Wing has taken a number of initiatives and made considerable progress during the FY 2017-

18. Digital Pakistan policy is being developed in the respective year.

INFORMATION TECHNOLOGY WING

Information Technology wing has made remarkable contribution during 2017-18:

- i. Approval of Digital Pakistan (former National IT Policy) has been granted by the Federal Cabinet.
- ii. Crafted concept papers and policy frameworks documents with regard to new initiatives relating to the IT sector.
- iii. Formulation technical input documents on behalf of the Government of Pakistan for International forums like ITU, for Internet Corporation for Assigned Names and Numbers ICANN etc.
- iv. Analyze and give technical input to the PSDP projects of IT sector in consultation with respective take holders on draft PC-1s for the approval of the DDWP/CDWP/ECNEC.
- v. Assist National Information Technology Board (NITB) and Pakistan Software Export Board (PSEB) on issues related to sourcing and procurement besides providing guidance on architecture, standards and other matters.
- vi. Provide strategic technical input to other Government departments in regards to their respective IT projects.

Activities during 2017-18

IT Wing has made significant strides during 2016-17. The brief snap is as under:

- 1) Worked on E-Commerce Regulatory framework document in consultation of relevant stockholders.
- 2) Preparation and Evaluation stages of ccTLDپاکستان. (Country Code Top Level Domain) Registry as per ICANN International Domain Names (IDN). Fast Track Program was successfully completed in the preceding years. In 2015-16, a meeting of the main technical meeting was convened, whereby; NTC has been given the mandate of registry manager for theپاکستان. Registry operations. The complete case for the nomination of NTC, being the IDN, ccTLD, Manager, in consultation with relevant stakeholders including community has been submitted to IANA/ICANA for their approval.
- 3) Approval of ccTLD -پاکستان internet registry from ICANN bed.
- 4) Consultation meeting with relevant stakeholder for the preparation IDN, ccTLD . Operational policy guidelines to be reformed by the IANA.
- 5) Overseeing of e-Office suite implementation across Federal Ministries/Divisions. This software has been implemented in MoIT, Establishment Division, Cabinet Division, Board of Investment, Science and Technology, Civil Aviation and is ready to be rolled out in other Federal Ministries/Divisions in a phased manner. Currently, e-Office Suite is being rolled-out in Twenty-five (25) Federal Ministries / Divisions, which include Prime Minister's Office, National Assembly Secretariat, Ministry of Planning Development and Reform, Finance Division and others.
- 6) Established Information and Communication Technology Knowledge Transfer Platform (IKTP) forum to interact with IT Industry. Different session on IT matters was held.
- 7) Provided support to GOP's major initiatives on Information and Communication Technology for development in various sectors like education, health & National security and presented the Government of Pakistan's standpoint on IT, at bilateral and multilateral International Forum.
- 8) Studied, evaluated and delivered input on various proposals received from the private sector or government agencies.
- 9) The Server Room of Ministry of IT has been strengthened in order to provide 24/7 IT services to the Ministry Officers/officials.

- 10) Consultation with multi-stakeholders as Re-Delegation of “.pk”.
- 11) Preparation of the formulation National execution Council Forum to boost IT/ITes Exports.
- 12) Worked with PSEB to furnish and Award IT Companies based on their performance.
- 13) Worked with NITB to prepare policy statement to roll-out e-office suite in provinces.

LEGAL WING

The Ministry of Information Technology & Telecommunication has a legal wing headed by the Member (Legal) and perform following functions:

- i. Responsible for drafting new Law & Rules.
- ii. Amendments in existing Law & Rules.
- iii. Drafting of MOUs, LOAs, agreements etc.
- iv. Drafting of para-wise comments of court cases.
- v. Legal advice on all matters pertaining to Ministry and its Department/ Organizations.
- vi. Co-ordination with Court of Law, Ministry of Law & Justice and other Stakeholders in Legal matters.
- vii. Provide input all Legal matters of other Ministries/ Divisions pertaining to IT & Telecommunication sector.
- viii. All matters pertaining to Prevention of Electronic Crimes Act, 2016 (PECA).

During the period Legal Wing extended support to following Departments/ Organizations of the Ministry particularly in Court cases:

- 1) National Information Technology Board.
- 2) National Telecommunication Corporation.
- 3) Telephone Industries of Pakistan (Pvt) Limited.
- 4) Universal Service Fund Company.

- 5) Research & Development Fund/ GMT.
- 6) Telecom Foundation.
- 7) Pakistan Telecommunication Company Limited.
- 8) Pak Data Com Ltd. (PDCL)

Courts Wise Breakup for the Year 2017-18

Sr. No	Courts	Cases Registered	Status at MoITT	In progress
1	Supreme Court of Pakistan	06	01	05
2.	Islamabad High Court	40	14	26
3.	Lahore High Court	31	08	23
4.	Sindh High Court	20	04	16
5.	Peshawar High Court	04	01	03
6.	Balochistan High Court	08	-	08
7.	Gilgit Baltistan Chief Court	-	-	-
8	Others Court Cases	21	02	19
Total		130	30	100

**ORGANIZATIONS/COMPANIES / DEPARTMENTS OF
MINISTRY OF INFORMATION TECHNOLOGY AND
TELECOMMUNICATION**

National Information Technology Board

National Information Technology Board (NITB) is mandated with broad range of technical guidance and consultancy services to the public-sector organizations for identification of key areas/services for automation; including design, development, and implementation. In addition, NITB provides technical assistance and subject matter experts to various Ministries/Divisions for their respective IT operations, infrastructure, general purpose and application specific trainings and e-Government projects. Federal Ministries, Divisions, and Departments are having due advantage of NITB's technical services, consultancy and advice. Provision of these services to government organizations across Pakistan has resulted in bringing efficiency and transparency for the public organizations and contributed in quick delivery of information and services to public at a large scale.

Vision, Mission and Mandate:

Our vision is to become a strategic enabler, by making the full use of ICT, for an accelerated digitization eco system, aiming to expand knowledge-based economy and spur socio economic growth. Improve Pakistanis Citizen's quality of life and economic well-being by ensuring availability of accessible, affordable, reliable, universal and high-quality ICT services.

- i. Provide technical guidance for embedding e-Governance in the Federal Ministries/Divisions and promoting efficient and transparent governance
- ii. Facilitating and executing efficient and cost-effective implementation of e-government programs in the Federal Ministries/Divisions
- iii. Carry out training need assessment, design and implement IT capacity building programs for employees of the Federal Ministries/Divisions.
- iv. Review the status of e-government readiness on a regular basis to ensure sustainable, accelerated digitization and ICT human resource development.
- v. Identify the areas where IT interventions can be helpful and to suggest measures for the automation of these areas through Business Process Re-engineering (BPR).
- vi. Provide Standards for software and infrastructure in the field of Electronic Government.

E-GOVERNANCE

NITB is committed for the promotion of e-Governance across the country in line with the vision & IT Policy of Federal Government of Pakistan under the administrative guidance of Ministry of Information Technology and Telecom. Not only existing ICT infrastructure being revamped through due advisories and consultancies, but also provision of e-Governance software applications is being made to public sector organization to serve the public in more effective and efficient manner. NITB mainly focused on cross-cutting e-Governance applications and initiatives that can be replicated across multiple public organizations for better Government to Government (G2G) and Government to Citizens (G2C) services and communication.

CONSULTANCY SERVICES

NITB is committed to provide IT Consultancy and Advisory Services to the public organizations for the effective and sustainable ICT based initiatives. The following consultancy and advisory services were offered during 2017-18.

- i. Technical consultancy of Business Process Re-engineering (BRP) and detailed requirement analysis for developing comprehensive computerized Balloting System of BARDANA for PASSCO.
- ii. Technical services for the selection of IT Professionals in the Islamabad High Court.
- iii. Technical services for the establishment of Local Area Network for Auditor General of Pakistan.
- iv. Consultancy on development of Complaint Cell and Mobile Application for PEMRA.
- v. Technical services for the establishment of Local Area Network, Project Management and Website development for Pakistan Public Works Department (PWD).
- vi. Technical services for verification of software installed in EBC & CBC by the USF.
- vii. Technical services for the customization of Enterprise Resource Planning (ERP) Software for the Federal Employees Benevolent & Group Insurance Funds (FEB & GIF).
- viii. Consultancy services for development of Balloting Software for Pakistan Housing Authority (PHA).
- ix. Technical services for the recruitment of Human Resource for NTC.

- x. Consultancy services for the settlement of PAC para against internet and other services provide to Federal Directorate of Education.
- xi. Review of PC-I for the implementation of E-Parliament project.
- xii. Consultancy services for technical evaluation of Model Police Station Project for Islamabad Police.
- xiii. Consultancy services in “E-LEARNING INITIATIVE AT 10 OPF EDUCATIONAL INSTITUTIONS ACROSS PAKISTAN” to Overseas Pakistanis Foundation

WEB DEVELOPMENT AND SUPPORT SERVICES

National IT Board is providing website development services to Federal Government organizations to ensure the availability of public information to the citizens with an aim to have a better focus on Government to Citizen (G2C) services.

National Information Technology Board (NITB) is maintaining GOP Portal (www.pakistan.gov.pk) and websites of sixty-four (64) Federal Government Ministries / Divisions / Departments.

The contents (information) on the Ministry/Divisions/Department’s website is being managed by relevant Ministry / Division / Department while the technical aspects and architectural changes are being handled by NITB. Technical experts from NITB are continuously providing technical training to the focal persons nominated by the relevant organizations on Content Management System (CMS) for proper management of their contents for the site.

In year 2017-18, NITB have successfully developed, upgraded and deployed twelve (12) websites that helped the government organizations to publish information, promote their services & activities, and interact with the citizens in a real-time environment.

- 1) National Security Division
- 2) Pakistan Medical and Dental Council (PMDC)
- 3) Directorate General of Special Education
- 4) Supreme Court of Pakistan

- 5) Pakistan Public Administration Research Center (PPARC)
- 6) Quaid-e-Azam Official Website
- 7) Directorate General Munitions Production
- 8) Staff Welfare Organization
- 9) Survey of Pakistan
- 10) Department of Archeology
- 11) Heritage Division
- 12) Ministry of Narcotics Control

SOFTWARE DEVELOPMENT SERVICES

In addition to cross cutting applications, subject matter experts from NITB are also engaged in developing agency specific applications/software(s) for different government organizations that can help them in achieving efficiency and transparency in their core services.

SMMO

In order to streamline the activities and efforts made by the officers and staff members at NITB, Smart Meeting Manager & Organizer (SMMO), a web-based application is developed and published. This application will facilitate the end users to schedule, manage and organize their in-house/outdoor official meetings along with systematic assignment of different tasks & activates, scheduling and tracking of assigned jobs, and maintaining daily activities.



AWARDEE'S DATABASE

This application is developed for Cabinet Division, to manage a database of National Awards of Pakistan. Civil awards comprising five Orders

- Order of Pakistan.

- Order of Shujaat.
- Order of Imtiaz.
- Order of Quaid-i-Azam.
- Order of Khidmat.

And "President's Award for Pride of Performance, and four descending categories namely, Nishan, Hilal, Sitara and Tamgha. Through this application any awardee of above-mentioned awards can be searched, view details and print out etc.

MULTI INSTANCE CASE TRACKING SYSTEM (MCTS)

To automate the process of storing and tracking the legal cases, NITB has designed and developed a software, Multi-instance Case Tracking System (MCTS) which is based on Software as A Service (SaaS) and hosted on NTC-cloud. The software is fully equipped with all functionalities and processes for law officers and executive officers under an organization's law department/section. All major modules such as Administration, Users Management, Reporting and Searching are available.



ISLAMABAD CITY APP

To reap the benefits of 4G/LTE/3G network across the country, NITB and CDA through a joint effort has empowered the citizens of Islamabad with indigenously developed mobile application that not only helps to explore city life; but also facilitates them with direct access to law enforcement agencies, civic services offered by CDA and most critical emergency contact numbers based on user's GIS location. The application was launched for android based mobile phones and available for download at google play store and NITB & CDA's website. Such Initiatives will lay down a foundation and a step towards SMART



CITY vision of Ministry of IT. Moreover, NITB is working on connecting other different citizen centric services to this app in the future as well.

ONLINE VISA PORTAL

In order to promote the ease of doing business and facilitating international investors in visa processing, NITB worked with Board of Investment (BOI) to automate and developed an online “Work Visa Application Processing System”. Work Visas are granted to foreign technical and managerial personnel for the purpose of imparting technical skills to the local population. The manual procedure is now replaced by this newly developed web-based application (<http://visa.boi.gov.pk/>) that expedites the application processing time and facilitate the applicants to see the most recent status of their application.

The screenshot shows the '1. Submission of Application' step of the online visa application process. It lists the required documents and fees:

- i. Company's covering letter stating the period of visa required and other necessary details.
- ii. Passport's consisting of three pages i.e. information, entry and last visa page.
- iii. Coloured Photographs.
- iv. Company's Registration Certificate
- v. Employment agreements.
- vi. Confirmation/ guarantee of the credentials of the expatriates by the company on their letter head.
- vii. Company profile.
- viii. Work / Family visa processing fee details.
- ix. Original / proof of Work Visa processing fee US\$100 (equal in Pak rupees) for one year work visa. The amount shall be deposited in the Board of Investment PLS Account No. 44991-2 being maintained with National Bank of Pakistan, Main Branch, Civic Centre, Islamabad.

Note: Five sets of above documents are required to be submitted by the company except of Company Profile for which 2 sets are required.

The fee on services offered by Board of Investment are **RS 1000000** w.e.f. 01st January, 2017

Below the list is a progress bar with four steps: Step1 (active), Step2, Step3, and Step4.

COMPLAINT MANAGEMENT SYSTEM

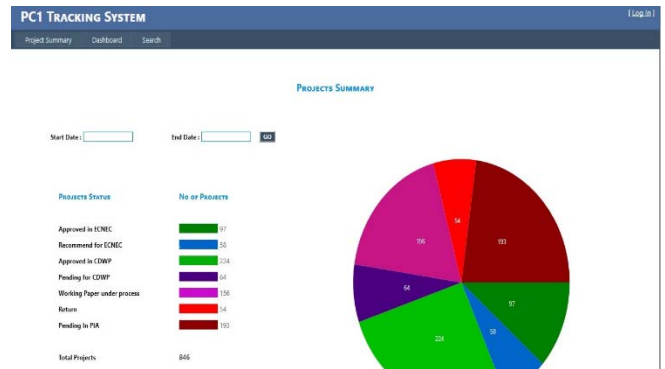
To meet the modern trends of world, the Ministry of Planning, Development and Reform has taken an initiative to launch an online portal “*Hotline Complaint Management System (HCMS)*” to ensure the transparency of the project and to get a feedback directly from the citizens. HCMS allow citizens to launch a complaint, suggest changes or provide feedback on any of the proposed plan or project. The core purpose is to get the citizens involved at the time of planning and during the execution of the project. The developed system allows senior management to track the numbers of complaints/feedback along with unique tracking ID and action performed against these queries.

The screenshot shows the homepage of the Ministry of Planning, Development & Reform's HCMS portal. It features a green header with the government logo and navigation links. The main content area has two primary sections: 'Register Complaint' and 'Track Complaint'. The 'Register Complaint' section includes fields for 'Name', 'Phone No.', and 'Email', along with a 'Submit' button. The 'Track Complaint' section includes fields for 'Complaint ID' and 'PIN Code', along with a 'Track' button. To the right, a text box states: 'All Complaints submitted to Planning Commission Inspection Commission Anti Corruption Hotline will be reported and handled by the Planning Commission Inspection Commission'. Below these sections, contact information is provided: Phone: 051-9208639, Fax: 92-51-9201777, SMS: 0300 000 0000, and Email: complaint@pc.gov.pk. At the bottom, there is a section for 'PSDP Complaints / Feedback' with a brief description of the system's purpose and logos for 'Collaboration' partners: Transparency International - Pakistan, Planning Commission, and Inspection Commission. A final statement reads: 'سہ ماہی تہ کی جانکی ہیں۔ Anonymity Complaints are Acceptable'.

PC-I TRACKING SYSTEM

PC-I is one of the most critical steps for all the development projects in Pakistan. National IT Board has developed “PC1 tracking system” to resolve the queries from ministries and departments regarding the delay in PC1 for CDWP Agenda. Minister of Planning Development & Reform Prof Ahsan Iqbal took the initiative for the automation of PC1 process in planning

commission. The system enables the tracking of PC-I, information about Total numbers of received PC1 , Under Processing PC-I in technical section, Approved PC-I in CDWP , Recommended PC-I in ECNEC , Pending PC-I in PIA/Other sections, Return to Ministries and Departments , CDWP Agenda . The System facilitates the chairman of planning Commission for making the Agenda of CDWP.



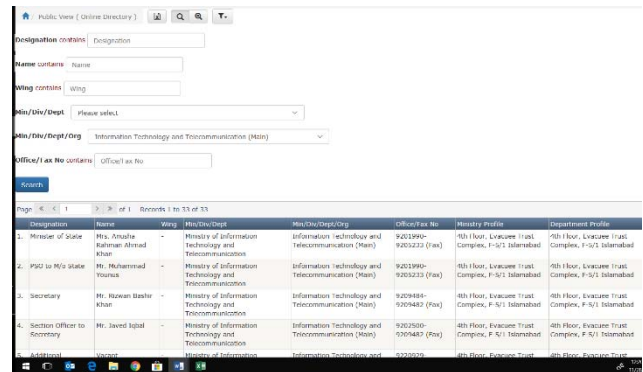
CASE TRACKING SYSTEM

NITB has developed a web based “Case Tracking System” for the Attorney General for Pakistan to automate the process of tracking the legal cases nationwide. Real-time status and tracking of the cases from different cities of Pakistan was very challenging for the office of the Attorney General. The main purpose of this web-based application is to digitize the information of the cases and timely tracking of the upcoming court dates along with the latest status and remarks by the honorable court. This web-based solution allowed the law officers to update the status of their cases remotely whereas AG Office can simply review the status of each location.

This application is equipped with dynamic reports, tasks assignments, time-based tracking, upcoming cases, keywords-based search on archived judgments, and Executive Dashboard for monitoring.

ONLINE TELEPHONE DIRECTORY

Due to the unavailability of centralized HR application for government offices, it's quite challenging to access the contact information of the relevant officers, wings or sections. As the requirement of such system was raised by the Cabinet Division, NITB's technical experts developed a web-based *Telephone Directory* of the Federal Government employee. The data is updated and maintained by the Cabinet Division and available at <http://www.cabinet.gov.pk/teldirview/>.

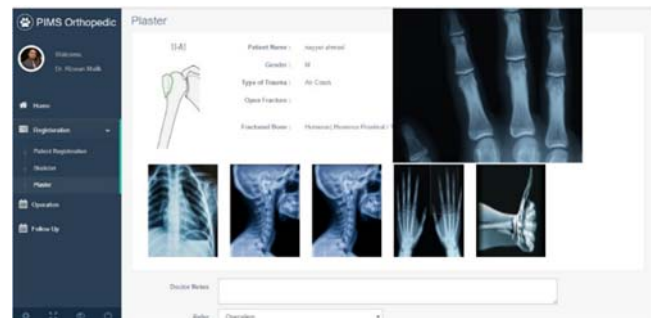


The screenshot shows a web application titled "Public View (Online Directory)". It has search filters for "Designation contains", "Name contains", "Wing contains", "Min/Div/Dept", "Min/Div/Dept/Org", and "Office / ex No contains". Below the filters, a table lists employees with columns: Designation, Name, Wing, Min/Div/Dept, Min/Div/Dept/Org, Office/Fax No, Ministry Profile, and Department Profile. The table contains four rows of data.

Designation	Name	Wing	Min/Div/Dept	Min/Div/Dept/Org	Office/Fax No	Ministry Profile	Department Profile
Minister of State	Mrs. Anshu Rahman Ahmed Khan		Ministry of Information Technology and Telecommunication	Information Technology and Telecommunication (Main)	9201990-9202225 (Fax)	4th Floor, Executive Trust Complex, F-5/1 Islamabad	4th Floor, Executive Trust Complex, F-5/1 Islamabad
PSD to Min's State	Mr. Muhammad Younus		Ministry of Information Technology and Telecommunication	Information Technology and Telecommunication (Main)	9201990-9202225 (Fax)	4th Floor, Executive Trust Complex, F-5/1 Islamabad	4th Floor, Executive Trust Complex, F-5/1 Islamabad
Secretary	Mr. Razaan Bashir Khan		Ministry of Information Technology and Telecommunication	Information Technology and Telecommunication (Main)	9209484-9209483 (Fax)	4th Floor, Executive Trust Complex, F-5/1 Islamabad	4th Floor, Executive Trust Complex, F-5/1 Islamabad
Section Officer to Secretary	Mr. Saad Iqbal		Ministry of Information Technology and Telecommunication	Information Technology and Telecommunication (Main)	9202500-9209483 (Fax)	4th Floor, Executive Trust Complex, F-5/1 Islamabad	4th Floor, Executive Trust Complex, F-5/1 Islamabad

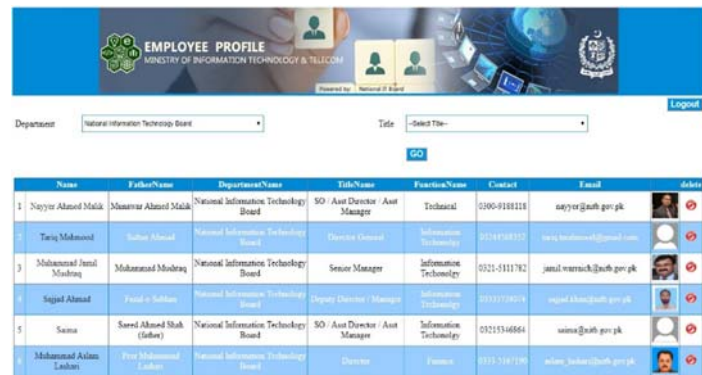
E-ORTHOPEDICS

National IT Board have history of providing multiple services in health sector including provision of HMIS based e-Health Solution for the Children Hospital of PIMS, Islamabad. Given the expertise and domain knowledge, the Department of Orthopedics at Pakistan Institute of Medical Sciences (PIMS) requested NITB to digitize the patient experience and smart decision-based system for treating patients with fractures. The main focus of the application was to use the international practice of using graphical options to smartly decide the exact point of fracture and once the database is fully populated it can be used for running different types of analytics and reports for the policy/decision makers. The application mainly emphasis on collection of patient's information, diagnosis fractures types, X-rays, Doctor decisions, Operations etc.



HUMAN RESOURCE MANAGEMENT SYSTEM (HRMS)

Availability of latest and up-to-date information of Human Resource (HR) is the most critical challenge for every organization. In order to have a consolidated HR information along with respective details, NITB successfully developed and deployed the centralized HR module for Ministry of Information & Telecom (MoITT). The core purpose of having a portal is to establish a central repository of all employees (including employees of attached departments) and gather information related to personal data, education, area of expertise, trainings, workshops, seminars, conferences attended by the individuals. This module will help the key decision makers to have employees' information available 24/7, rapid identification of required subject matter experts within MoITT, and assist Admin & HR wing to accurately plan career development programs for employees. The application is available at <http://hrprofiles.moit.gov.pk/>



Name	Father's Name	Department Name	Title Name	Function Name	Contact	Email	Photo
1 Nayer Ahmad Malik	Muhammad Ahmad Malik	National Information Technology Board	SO - Asst Director / Asst Manager	Technical	0300-9181118	nayer@nitb.gov.pk	
2 Tariq Mahmood	Sahar Ali Shah	National Information Technology Board	Executive Council	Information Technology	0574708555	tariq.techno@nitb.gov.pk	
3 Muhammad Jamil Muneer	Muhammad Muneer	National Information Technology Board	Senior Manager	Information Technology	0521-5111782	jamil.muneer@nitb.gov.pk	
4 Sajid Ahmad	Fazal-e-Subhan	National Information Technology Board	Deputy Director / Manager	Information Technology	0553770815	sajid.ahmad@nitb.gov.pk	
5 Samia	Saeed Ahmad Shah (father)	National Information Technology Board	SO - Asst Director / Asst Manager	Information Technology	0521534884	samia@nitb.gov.pk	
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RESUME MANAGER (ONLINE JOB PORTAL)

Physical Processing job applications is a cumbersome process in public organizations. National IT Board on the request of Ministry of Law & Justice developed an online resume manager application that allows the candidate to directly apply for advertised position through web. This initiative not only minimize the processing time of these applications but also helps the ministry to have a time-stamped digitized information which contributed towards ensuring transparency during the process and provide mechanism for executing different analytical reports. This web-based application facilitated the candidates to maintain their resume and reuse the information for multiple position instead of starting



Ministry of Law and Justice

Apply Online

Apply Form

Applied For *

Applicant Name *

Father Name *

CNIC *

email *

Contact *

Postal Address *

Date of Birth *

Bachelors/Eng. (College/University) *

Bachelors/Eng. (Passing Year) *

Master's/Eng. (College/University) *

Master's/Eng. (Passing Year) *

Subjects *

Please select *

Applicant Name

Father Name

CNIC

email

Contact

Postal Address

Date of Birth

Bachelors/Eng. (College/University)

Year

Master's/Eng. (College/University)

Year

Save

Cancel

from scratch.

ONLINE REGISTRATION FOR BASIC IT TRAINING

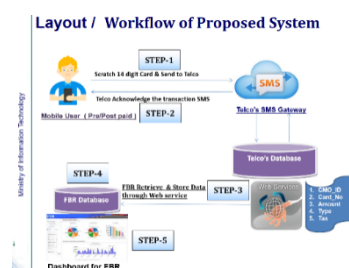
Providing technical training to the federal government employees is one of the core functions of National IT Board. In 2017-18, NITB launched a three and six weeks self-paced training program for LDCs and UDCs in collaboration with Virtual University. Considering the

The screenshot shows a web-based nomination form titled "NOMINATION FORM FOR BASIC IT TRAINING COURSE". It includes fields for "Basic IT Course for:" (with a dropdown menu showing "Assistant"), "OFFICE DETAILS:", "Ministry/ Division/ Department", "Office Address", "Office City", "Office Phone", and "Designation". Each field has a small instruction or character limit below it.

requirements of possible candidates, it was observed that routing the nominations through traditional method may lead towards a delay in processing these queries. In order to avoid such delays and guarantee the transparency of processing this application, an online web-based nomination (<http://nitb.gov.pk/trianing>) mechanism was established for candidates and organizations.

TAX DEDUCTION APPLICATION

Due to the record increase of cellular subscriber (above 142 million) in Pakistan, Federal Board of Revenue (FBR) had to ensure that the tax charged to the citizens by CMO is reported properly to the Government of Pakistan. Nation IT Board using their technical expertise took the challenge and prepared a prototype of the application that can be used and report the actual numbers to FBR in a real time.



TECHNICAL AND PROCESSING TRAININGS

In order to maintain the efficiency and expertise of the technical staff working at the different federal government organizations, National IT Board offers multiple training programs round the year. NITB mainly offered three (3) capacity building programs for the government employees.

- **e-Office end-user Training:** Adoptability of e-Office suite, a critical step toward e-governance that requires extensive end user training. This program is designed to enhance the technical capacity of

the government employees to ensure that employees of Federal Government organizations can undertake business processes with the use of e-Office Application suite. NITB is offering the training in Four different modes;

- In-Class training at National IT Board
- Training session at beneficiary organization
- On-site handholding sessions
- Train the Trainer program

In 2017-18, NITB have successfully trained 1459 officers/officials

- **Basic IT Training:** To enhance the basic IT skills of LDC and UDC, NITB is offering three- and six-weeks training programs. This self-paced IT training program is designed in collaboration with Virtual University (VU). In 2017-18, 4581 candidates successfully completed the training whereas 3272 candidates passed the exam.
- **Website Administration Training:** as per mandate NITB is responsible for developing websites for federal government organizations whereas the technical resource/Point of contact (POC) at the beneficiary organization are responsible for managing contents on the sites. In order to ensure that the POC can manage the site seamlessly without any day-to-day support, NITB is continuously offering training sessions for technical resources for managing websites and contents. In 2017-18, NITB have successfully trained 110 technical staff on web administration for federal government organizations.

DEVELOPMENT PROJECTS

National Information Technology Board (NITB) through its development projects is endeavoring to implement the e-Government Program in accordance with National IT Policy and Vision 2025. The program is being implemented through its different projects in various Federal Divisions/Organizations. In connection thereof, provision of basic Information and Communication Technologies (ICT) is being initiated or completed at different federal government organizations.

Ministry of Information Technology & Telecom through National Information Technology Board (NITB) has developed “*e-office Application Suite*”. It is an essential component of the TDF Implementation Plan for IT & Telecommunication sector, “E-Government Strategy and Five-year plan” approved by the National E-Government Council (NEGC) and the Federal Cabinet. E-Office application is a custom developed ERP solution, designed and developed for the automation of the common business processes of the Government of Pakistan. The application is based on existing rules and regulations of the government, that uniquely qualify e-Office having a giant mandate of paradigm shift but with no requirement of legislation or change in the exiting government process. One of the e-Office Application module includes complete workflow management system for the file movement that completely replaces the physical file system. The users can create a digital file, send receive across the organizations, archives files/record, standard GoP templates. the solution also includes multiple core modules like Human Resource Management Information System, Inventory & Procurement System, Finance & Budgeting, Project Management and Internal Portal. The e-office application is provisioned and hosted free of cost for all organizations of the GoP. It is the responsibility of NITB to ensure the maintenance and availability of e-Office application in collaboration with National Telecommunication Corporation (NTC). Provision of the local IT infrastructure for end users is the core responsibility of the beneficiary organization.

E-Office *Maturity Model for Implementation (EMMI)* was developed for the self-assessment of the organizations to evaluate that how much maturity an organization has gained and what are the key steps to climb up the maturity levels. This model consists of six (06) maturity levels, by assessing the maturity of different aspects of implementation processes, it becomes clear what their strengths and weaknesses are, and where improvements are needed. The EMMI also allows an organization to gain insight into the current situation of its implementation processes, and how it

EMMI Level	Definition
Level 0	Organization does not have the requisite Infrastructure, connectivity. Training for end-users to be imparted.
Level 1	Organization is connected to the National datacenter, Requisite infrastructure & user training have been delivered for selected sections.
Level 2	Organization has attained Level 1 and is using e-Office in selected sections/wings
Level 3	Organization has attained Level 2, has done away with hard files (barring approved exceptions) and is using e-Office as the only medium for internal communication purposes
Level 4	Organization has attained Level 3 and has started Inter-departmental communication/file movement through e-Office
Level 5	Organization has attained Level 4 and has started using other modules of e-Office suite

should pursue the ultimate level of maturity. The implementation of e-Office application suite has multiple steps, so it is important to measure the steps and to record the improvement in the implementation by assigning certain maturity level.

Strategically the initiative taken under this project carries various benefits like improvement in availability of data by utilization of technology and information systems, increasing efficiency and effectiveness in government processes, implementing standardization across federal government organizations, improvement in inter-ministry or inter-departmental communication, a step toward green environment at work place, reduction in financial expense in terms of POL, and online auditable track of files & documents.

In 2017-18, the following major activities and milestones were achieved

- **Requirement gathering and gap analysis of Ministries for implementation of e-Office**
- **Preparation of PC-I for different federal government organizations for the provision of basic ICT infrastructure.**
- **Assisting different ministries, divisions, and departments to get connected with the government dedicated fiber ring for the provision of e-Government applications.**
- **Conducting e-Office capacity building training programs for federal employees.**
- **So far, e-Office is hosting 67998 files and 407097 documents.**

e-Office is successfully implemented in nearly forty-two (42) federal government organizations. Most of the remaining federal organization are waiting for the provision of basic infrastructure or e-readiness for e-Office. Remarkably MoITT, National IT Board, Ignite, Board of Investment (BOI), Establishment Division, Foreign Affairs, BISP are using e-Office as the prime or only medium for file management. Whereas Federal Investigation Agency, PHDEC, Islamabad Police, IPO, Cabinet, Science & Technology, Aviation, Commerce, Planning, Dev. & Reforms, Finance, Interior, Economic Affairs, Law & Justice, Defense Production, Privatization, Petroleum & N. Resource, Health, Defense, Communication, Power, Information & Broadcasting, Education, Narcotics Control, Overseas Pakistanis, National Assembly, Prime Minister Office, Capital Development Authority, NEPRA, Federal Board Revenue, PARC, PEMRA, CGA/FABS, PASSCO, CCP, DRAP, Federal Ombudsman, NTDC are using e-Office as major tool its filing

process. The detail status of e-Office is listed below

E-OFFICE IMPLEMENTATION STATUS

LEVEL	MINISTRIES/DIVISIONS
Level 4	1. Information Technology
Level 3	1. Commerce , 2. Establishment , 3. Foreign Affairs
Level 2	1. Cabinet , 2. Science & Technology , 3. Aviation , 4. Planning, Dev. & Reforms , 5. Finance , 6. Interior , 7. Economic Affairs , 8. Law & Justice , 9. Defense Production , 10. Privatization , 11. Petroleum & N. Resource , 12. Health , 13. Defense , 14. Communication , 15. Power , 16. Information & Broadcasting , 17. Education , 18. Narcotics Control , 19. Overseas Pakistanis
Level 1	
Level 0	<div>1. Climate Change, 2. Human Rights, 3. National History & Literary Heritage, 4. Postal Services 5. Water Resources,</div> <div>6. Parliamentary Affairs, 7. Railways, 8. Statistic, 9. Housing & Works, 10. Industries & Productions, 11. National Food Security, 12. Inter Prov. Coordination, 13. Kashmir Affairs & GB,</div> <div>14. Maritime Affairs, 15. Religious Affairs, 16. State & Frontier Regions, 17. Textile Industry, 18. National Security, 19. Revenue,</div>

E-OFFICE IMPLEMENTATION STATUS

LEVEL	DEPARTMENTS
Level 4	1. National IT Board 2. Board Of Investment ,
Level 3	1. IGNITE , 2. Benazir Income Support Program , 3. PHDEC 4. Federal Investigation Agency , 5. Islamabad Police , 6. IPO
Level 2	1. National Assembly , 2. Prime Minister Office , 3. Capital Development Authority , 4. NEPRA , 5. Federal Board Revenue , 6. PARC , 7. PEMRA 8. CGA/FABS , 9. PASSCO , 10. CCP 11. DRAP 12. Federal Ombudsman , 13. NTDC
Level 1	
Level 0	1. HIT , 2. Pakistan MINT , 3. Civil Services Academy , 4. President Secretariat 5. National Highway Authority , 6. PAF Base Kamra , 7. Motorway Police , 8. PSEB , 9. EGEL , 10. DGDP , 11. PM&DC , 12. FTO 13. PHA , 14. EDE , 15. FAB 16. DGBACS , 17. NTC 18. DGMP 19. NICL 20. METRO 21. Punjab Police 22. Pak Audit Account 23. Fashion & Design 24. NIM

In 2016-17, “Strengthening of ICT infrastructure and Automation of President Secretariat (Aiwan-e-Sadr)” a PSDP project was initiated by the National IT Board. The prime focus of the project is to equip the President Office with ICT infrastructure, software applications, network and cyber security tools, and technical staff. This initiative will strengthen the ICT based working environment for the President Office, facilitate in providing public services more efficiently and effectively, and enhance the collaboration and interactions with other government organizations. In year 2017-18, the hiring of the project staff was done. Procurement of all hardware completed and delivered to President Secretariat. In June 2018 the project was closed due to completion of time as per PC-I. Now project is extended to complete the remaining activities of the project (to purchase the necessary software and furniture, and deployment of the LAN).

AUTOMATION OF PRIME MINISTER’S SECRETARIAT PHASE-II

National IT Board is executing this project through PSDP at the Prime Minister Secretariat, the core objectives are to enable ICT environment at PM Office, development of secretariat specific applications, implementation of latest cyber security practices, and provision of relevant hardware and tech tools. In year 2016-17, NITB have successfully procured, developed and deployed the following

- **Software Applications (Windows Server, Windows 10, Microsoft Office, Antivirus Suite, Network Management Software, Microsoft database & development platform, and Adobe Photoshop)**
- **Security H/W and S/W (Firewalls, IPX/SPX, Network Security Application)**
- **Hardware (Network Scanners, Printers, Network Switches, Fiber modules, SNMP modules, Desktop PCs, UPS, and Laptops)**
- **Updated version of Grievance Management System and Fund Management System**
- **Development of multiple modules for *PMs’ Youth Program* under *National Internship* initiative.**

In the year 2017-18 following hardware and software were procured and deployed successfully.

- **Hardware (Ruckus Zone Director 1200, Ruckus Zone Flex R720 Dual Band, POE Adapter, Patch Cord, Fiber Main Distribution Frame 96 Fiber, NAC Solution "Pulse Secure Appliance 3000",**

Cable Manager, Western Digital my Passport Pro 4TB HDD, Multimedia projector (Box Light ANX-355), Single Mode Fiber GBIC Module for Visual Network Cable).

- **Software Application (Network Management Software (NMS)).**

Project was closed on 30th June, 2018, and PC-IV of the project has submitted.

ONLINE RECRUITMENT FOR FEDERAL PUBLIC SERVICE COMMISSION

Conducting of examinations, tests, interviews and allied activities for hiring of civil servants through CSS and General recruitment examinations was one of the challenging tasks for the Federal Public Services Commission due to non-ICT based application processes. National IT Board took this challenge of digitizing the environment and started the project of digitization of recruitment process through PSDP project during 2003 to 2006, during this duration initial infrastructure was delivered and software systems was designed after getting defined in first System Requirement Specification (SRS) document through M/s NESPAK.

Some major deficiencies in scope of work were not addressed so a new Phase of this PSDP project i.e., Phase-II was launched in 2006. In initial effort for finalizing the scope of work an ample time was wasted for going to Computer Based Testing or continuing with the manual and MCQ based examination system, later in 2013 a revision was approved with the later scope of work including many other examination modules and infrastructure upgradation, online hosting services and Project Human resource (5 positions). Infrastructure (Hardware and Networking) was completely delivered in 2016-17 but contract for software development was awarded in Jun-2017. During 2017-18, a team of HR was hired (03 positions) and vendor engaged and the Project HR team managed to deliver SRS in April-2018 and Design document in may-2018 and initial software prototypes were finalized up to some extent. This initiative will empower Federal Public Service Commission (FPSC) to have more extensive, efficient, and effective Online Recruitment System for General Recruitment and CSS candidates.

National Telecommunication Corporation

When the Government decided to de-regulate Telecommunication sector, as a first step, converted T&T department into corporation and created PTC in 1991 through an Act of Parliament. As a second step, PTC was split into five entities such as PTCL, NTC, PTA, FAB and PTET through the Pakistan Telecom Re-org Act 1996.

NTC was given the mandate to provide Telecommunication Services to Government/ Defense communication while PTCL was mandated to provide Telecom services to the private sector.

NTC Mandate:

National Telecommunication Corporation (NTC) has been established under Pakistan Telecommunication (Re-organization) Act, 1996 for provision of telecommunication services within Pakistan on a nonexclusive basis to “the armed forces, defense projects, Federal Government, Provincial Governments or such other Governmental agencies or Governmental institutions as the Federal Government may determine”. For this purpose, NTC focuses to build, operate and maintain telecommunication system throughout Pakistan to fulfill the telecom needs of Government departments.

Mission:

“To provide secure and reliable Telecommunication Services to Government Departments/Organizations all over Pakistan”

STRATEGIC PERFORMANCE

After establishment in 1996, NTC started to concentrate on developing its own telecom infrastructure. Within few years, it aligned itself with emerging technological advancements by deploying Fiber Optic Systems in the long haul and metropolitan areas along with around 150,000 digital lines exchanges. First cloud-based Tier-III National Data Center was also established by NTC in record period of five months. It will help the Government in e-governance, e-health and e-commerce. In order to keep itself abreast with technological advancements, NTC prepared a comprehensive plan to migrate its legacy

TDM exchanges with latest IP based Next Generation Network (NGN) technology. Through this migration project, approx. 173,079 Telephone and 25,000 Broadband ports have been developed which makes 56% replacement of TDM network.

NTC completed around 78 percent of Annual Development Plan of financial year 2017-18. As a result, significant growth was observed in operational performance as 240 New Exchanges were established all over Pakistan in record period of four years (2013-18), making a total of 352 Exchanges showing 153% Growth. After rigorous efforts and fast development plan, NTC network has been expanded from 54 districts to 93 districts/cities where both voice and broadband services have been extended. National Telecommunication Corporation (NTC) and Microsoft Corporation signed a Services Provider License Agreement (SPLA). NTC will provide the licenses as a partner through its deployed infrastructure and locally hosted software, which would ensure integrity of the data and Applications. NTC carried out two very important national level projects, provision of telecom services to new Islamabad Airport and Orange Line Metro Train. Telecom Services being provided to the customers include but not limited to Intranet, e-mail, web-hosting, VPN, video conferencing, DSL and other customized services.

NTC not only undertook the responsibility for managing, registering and administrating پاکستان. domain name for Urdu and local languages but has successfully Completed technical setup for launching of ccTLD for پاکستان .

NTC also initiated and played role in strategically important projects such as Safe City Islamabad, Pakistan Educational Research Network (PERN), positioning of PAKSAT to secure and occupy the allocated Space Slot (2003), induction of GPON Technology and MPLS were also successfully implemented.

In pursuance to its mandate and conformity with Telecom Policy 2015, and to provide the latest ICT services to its subscribers, explored possibilities to enhance subscriber base for revenue generation, NTC signed agreements with CMOs, PTCL, DHA, Nayatel, Multinet, Supernet etc. under Public Private Partnership. Keeping in view the future requirements, NTC has already started preparedness for upcoming demand of Internet of Things (IoT), Smart cities, Smart appliances, Smart meters etc. To play

its role NTC has also planned to facilitate CPEC by laying OFC infrastructure along the CPEC Road alignment link and National backbone through Shikarpur with Gwadar and the establishment of Submarine Cable Landing Station at Gwadar. The Gwadar Landing Station will provide alternative route to existing Submarine Cable Landing station at Karachi. Besides, revival of existing Coastal Highway (OFC) from Karachi to Gwadar has been planned for provision of telecom services at Gwadar and various other cities and Garrisons falling on the Coastal Highway.

In addition, NTC has planned to create Government cloud at NTC's National Data Center in a secure environment. In the next four years, NTC will strive for continuous innovation and open collaboration to enhance the industry ecosystem, with the specific goals to build a secure and trusted ICT platform, NTC will give new meaning and values to the telecom industry.

OPERATIONAL PERFORMANCE

Service Portfolio:

<u>Telecom Services</u>	<u>Data Network Services</u>	<u>Transmission Services</u>
<ul style="list-style-type: none"> • Basic Telephony • ISDN-Integrated Service Digital Network • BRI-Basic Rate Interface • PRI-Primary Rate Interface • Supplementary Services • Network Solutions for valued subscribers • GoSmart • M2M • P2P <p><u>Value added Services:</u></p> <ul style="list-style-type: none"> • Caller line identification 	<ul style="list-style-type: none"> • Data Center Services • Broadband Internet Access • Intranet Solutions • Customized Data Solutions • Web Hosting facility • Virtual Private Networking (VPN) • Leased Line Services • Mail platform • Video Conferencing facility • Robocall • 3G/4G Services • Skype for business • SMS gateway 	<ul style="list-style-type: none"> • Dark Fiber • Media Junction <p>CO-LOCATION</p> <p>•Space (Open, Covered), Dishes/Antennas on NTC Towers and AC/DC Power Supply</p> <p>• Servers</p>

<ul style="list-style-type: none"> • Call waiting • Call transfer • Wakeup timer • Don't disturb • Abbreviated dialing • Switched Hotline • Three Parties audio Conferencing 	<ul style="list-style-type: none"> • Co-Location • DDP, ISDN • Radio/Wireless Networking Solution 	
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Subscribers Growth:

Despite the decline in the use of fixed telephone, there has been consistent growth and development in the core operational functions. Although there is stagnant growth in the fixed lines during the current year. It was due to comfort and portability that mobile phone provides over a fixed-line. NTC Management is continuously making its efforts to enhance the subscriber base of the Corporation.

Unlike telephone, there has been an upward surge to acquire and maintain broadband connections. Internet has now become a necessity as compared to a luxury during the previous years. The overall subscriber's growth during the current year is as under:

F.Y. 2017-18				
Regions	Presence as on 30th June, 2017	Increase	Decrease	Presence as on 30th June, 2018
North	62492	16139	15069	63562
Central	43207	4548	4200	43555
South	40483	9550	8828	41205
Total	146182	30237	28097	148322

D-Hiring of Co-Locations/ Media:

To optimize the operational cost, NTC has de-hired the following numbers of media/co-location/co-

points:

De-Hiring	2017-18
Media (E1)	53
Co-locations	09
Copper Pairs	1164

Public-Private Partnerships:

In pursuance to its mandate and in conformity with Telecom Policy 2015, NTC signed agreements with various Telecom Operators in private sector under Public Private Partnerships. The purpose of such venture is twofold:

- 1) to provide the latest ICT services to its subscribers
- 2) explore possibilities to enhance subscriber's base, which resultantly expand the revenue base of NTC.

Following agreements have been signed with different operators during the previous years:

- M/S MOBILINK
- M/S CMPAK
- PTCL
- DHAI-R
- M/S LMKT-GOSMART
- MICROSOFT:
- NAYATEL:
- SUPERNET:
- TELENOR:

An agreement signed with VMWARE during the year which is as under:

VM WARE:

National Telecommunication Corporation (NTC) and VMware International Limited signed a VMware Cloud Provider Program (VCP). NTC will have latest VMware Products available for its own needs as well as for NTC customers. NTC is the 1st in APJ (Asia-Pacific & Japan) and 1 among 3 in the world for On-Prem AirWatch Public Cloud Provide, NTC is the 2nd in Pakistan for Cloud Provider Deployment. This partnership will deliver rapid market-ready capabilities while reducing operational and ownership costs significantly. NTC will able to hone its competitive edge and deliver enhanced solutions and services to Government of Pakistan Departments and Ministries, driving tangible business benefits and support. With modernized IT infrastructure, NTC will be able to scale rapidly based on needs, responding faster to demand spikes from its government customers.

FINANCIAL PERFORMANCE

The Financial performance of the Corporation for the financial year **2017-18** is given here under:

Rs. in Million	
Particulars	2017-18 (Draft Accounts) *
Revenue	3,235.84
Operating Cost	3,632.77
Operating Profit/(loss)	(396.93)
Other Income	465.36
Profit before bank Charges	68.43
Bank Charges	7.55
Profit/loss before Taxation	60.88

*Audit for the F.Y. 2017-18 is in process.

During F.Y. 2017-18, as per financial statements NTC made a financial profit of Rs. 61 million before taxation. Payment of arrears of pay & allowances for the F.Y. 2016-17 amounting to Rs. 77 million and bonus of Rs. 46 million was paid. Thus, total profit earned during F.Y. 2017-18 was Rs. 184 million.

DEVELOPMENT ACTIVITIES AND UTILIZATION

During this Financial Year 10 x New Development Projects have been approved by NTC Development Working Party (DWP) amounting to Rs. 1264.28 million. After approval from DWP and endorsed from NTC Management Board these projects are under execution as per their time lines. As far as the Budget utilization for the current year is concerned, an expenditure of Rs. 347.354 million recorded against the Budgetary Estimates of Rs. 445.365 million showing 78%utilization rate.

MAJOR ON-GOING DEVELOPMENT ACTIVITIES

Following are the major approved and ongoing projects for F.Y. 2017-18 for establishment of NTC Telecom Infrastructure:

- i. Disaster Recovery of National data Center at Lahore.
- ii. TDM to IP Migration at MSU Race Course Road (Remaining) and SMSU Baghbanpura.
- iii. TDM to IP Migration of NTC Exchanges Bahawalnagar and Rahim Yar Khan.
- iv. TDM to IP Migration along with laying of OFC network in local junction network at Faisalabad.
- v. Establishment of Multi-Service Access Network at Hafizabad, SIAL, Sialkot, Sambrial, Gujranwala Cantt, NLC Gujranwala, Gurumangat Road Lahore, Mehfoorzpura Army Garrison, Orange Line Metro Train Lahore, LDA Complex Lahore, Hayatabad, Peshawar, Kohat, Havelian, Bahria University Islamabad, Interior Sindh and Quetta.
- vi. TDM to IP Migration and provision of Telecom Services at Jehlum, Kharian and Sialkot.

FUTURE PLANNED PROJECTS

Following development projects have been initiated/planned for Financial Year 2018-19:

- i. TDM to IP Migration of MSU Cantt Rawalpindi, MSU Cantt Peshawar, MSU Quetta, MSU Hyderabad, Mirpur Khas, Sukkur and Larkana to provide state of the art telecom services to NTC designated subscribers.

- ii. Establishment of Multi Services Access Network at Taxila, Chakwal, Swabi, KRL Kahuta, PAEC Nilore, Khwaja Fareed University RY Khan and CTD Lahore along with laying of optical fiber cable.
- iii. Establishment of NTC Exchanges at Hub and Loralai.
- iv. Expansion of NTC Call Centre for Provision of Call Center Services to Government Organizations through Hosting Model.
- v. Expansion of Session Border Controllers installed at Islamabad and Karachi.
- vi. Construction of NTC Regional Office Building Peshawar Cantt.

Ignite-National Technology Fund

Ignite – National Technology Fund, established in 2006 by the Ministry of Information Technology & Telecom under Section 42 of Companies Ordinance is mandated to fund commercialization of research in fourth industrial wave tech and ecosystem development initiatives to fulfill to create a knowledge economy.

Since early 2017 we are focusing on startups based on 4th Industrial Wave technology – like AI, IoT, Robotics and AR – whose technology risk is beyond the appetite of private sector investors, with the expectation that investors and corporates will participate in subsequent rounds or else purchase or license the technology.

HIGHLIGHTS FINANCIAL YEAR 2017-18

NATIONAL INCUBATION CENTERS

The Government has a vision of accelerated digitization and transformation of Pakistan into a knowledge-based economy to spur economic growth through innovation and entrepreneurship. Keeping in mind the critical role played by startups in economic growth, job creation, financial inclusion, reducing the income divide, and building a knowledge economy, Ignite under the auspices of Ministry of IT & Telecom, launched a program to build a network of National Incubation Centers (NICs), which are factories for incubators. Ignite has successfully established 5 National Incubation Centers (NIC) in major cities of the country within a period of 18 months.

The first Incubation center was established in February 2017 at Islamabad. During the FY 2017-18, four more incubation centers were established in Lahore, Karachi, Peshawar & Quetta. All five NICs have the capacity to accommodate 170 incubates/annum (40 incubates each in Lahore, Karachi and Islamabad per/annum and 25 incubates each in Peshawar and Quetta per annum). Total allocated area for 5 NICs is approximately 94,000/- sq feet. Total Project duration for each NIC is 5 years 3 months inclusive of establishment period.

During FY 2017-18, total 53 Incubates were inducted in Islamabad. Whereas 31 & 17 incubates were inducted in NICs located at Lahore & Peshawar. 15 Incubates successfully graduated from NIC,

Islamabad. An amount of Rs. 293.139 million were disbursed during the year 2017-18 on account of National Incubation Centers located at five locations.

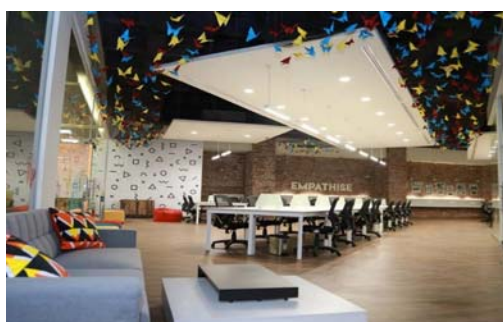
Following table depicts summary of each incubation center.

NIC	Awarded to	Launch Date	Incubatee per annum (Target)	Total Space (Sq Ft.)	Approved Budget (Rs.)
Islamabad	Jazz / TeamUp	07/02/2017	40	21,000	564,835,252
Lahore	LUMS/Fatima Ventures	21/12/2017	40	21,000	600,951,014
Peshawar	LMKT/PTCL	13/01/2018	25	16,000	510,637,731
Karachi	LMKT/PTCL/NED	11/05/2018	40	18,000	583,382,825
Quetta	LUMS/BUITEMS	30/05/2018	25	18,000	559,852,871

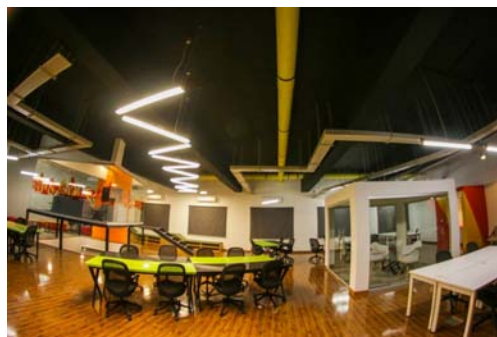
NIC Islamabad:



NIC Lahore:



NIC Peshawar:



NIC Karachi:



NIC Quetta:



Few examples of successful startups of Ignite are as follows:

STARTUP: MAUQA ONLINE

Mauqa Online is a digital platform that connects illiterate domestic helpers with nearby work opportunities.

STARTUP: AERO ENGINE CRAFT

Developing contrail-free aero-engines for reduced global warming and induced artificial rain during aircraft flight through on-board water recovery from fuel emissions.

STARTUP: PAK VITAE

PakVitae provides lifetime affordable filters that can purify water to 99.9999% without any power requirement.

STARTUP: BERA

Bera is a luxury Peshawari chappal brand, that is working to elevate the status, perception and design of the Peshawari chappal as well as bringing it into mainstream fashion and establish its diversity as an everyday comfort staple and a sleek and luxurious must-have, simultaneously.

STARTUP: APRUS

Cofounders and brothers Muhammad Mohsin Rafiq and Nauman Rafiq, have developed an electrosurgical generator that is energy and cost-efficient while being much safer than its counterparts available in the market.

FUNDED TECHNICAL R&D PROJECTS

For the year 2017-18, Company has approved 2 Technical R&D Projects worth PKR 39.54 million. The projects have been approved in the following thematic areas:

S. No	Description	No of Projects	Approved Budget (PKR million)
1.	Artificial Intelligence	1	16.32
2.	Augmented/Virtual Reality	1	23.22

On 1st March 2018, Ignite – National Technology Fund under the auspices of Ministry of IT and Telecom, Government of Pakistan launched a large scale national Digital Skills (DigiSkills)



Training Program to train one (1) million people across the country over a period of 2 years. DigiSkills Program is aimed at equipping our youth, freelancers, students, professionals, etc. with knowledge, skills, tools & techniques necessary to seize the opportunities available internationally in online jobs market places and also locally to earn a decent living. The program aims at not only developing key specialized skills, but also imparting knowledge about various freelancing and other employment and entrepreneurial opportunities available internationally and locally. Due to limited employment opportunities, it is essential for upcoming workforce to have necessary knowledge and abilities to grab such opportunities. This is envisaged to be achieved through a national level program, which will train target audiences in freelancing and other specialized skills.

A national training program promoting excellence in technology, innovation and work ethic, building a workforce for the fourth industrial revolution. This program will have a significant impact on Pakistan's economy and foreign exchange earnings. Since the last few years, Pakistan is consistently ranked amongst the top 4 free-lancers providing countries. Pakistani workers are tapping into this huge market of freelance work by providing their services in multiple disciplines.

The program aims to increase:

- a. Number of individuals working as freelancers in the country
- b. Number of hours worked per freelancer
- c. Earnings per hour or per project for freelancers
- d. Household incomes
- e. financial inclusion
- f. IT exports
- g. Number of experts in specialized skills

The DigiSkills Program comprises of three interlinked projects:

- a. DigiSkills Training Project
- b. DigiSkills Outreach Project

c. DigiSkills Monitoring & Evaluation (M&E) Project

The key scope of this project, is to develop a web-based training platform and Learning Management System, along with development of necessary training content to enable one million Pakistanis to enroll and take free online training courses. Under this project, trainees will be offered the opportunity to obtain free online training in areas of “Freelancing” and “Specialized Skills” all across Pakistan.

The training modules identified for online training are as follows:

1. Digital Literacy
2. Digital Marketing
3. SEO (Search Engine Optimization)
4. AutoCAD
5. Word Press
6. Quick Books
7. Graphics Design
8. Creative Writing
9. E-Commerce Management
10. Freelancing

NATIONAL GRASSROOT ICT RESEARCH INITIATIVE (NGIRI)

National Grassroots ICT Research Initiative is aimed at assisting those undergraduate students of public and private sector universities who are enrolled in degree programs related to Information and Communication Technology (ICT) disciplines and have initiated their Final Year Projects (FYPs). The financial assistance under the program is aimed to enable students undertaking FYPs for building prototypes and working models in order to increase their creativity, innovation and hands-on engineering and development skills.

The program is being executed since 2012 and overall, five phases of the program have been rolled out successfully. During the year 2017-18, the sixth phase of the program was executed with key facts summarized below in following table.

Year	Participating Universities	No of FYPs evaluated	No of FYPs approved	Approved Budget (PKR million)
2017-18	89	1,623	569	31.19

PRIME MINISTER'S NATIONAL ICT INTERNSHIP PROGRAM

Ignite – National Technology Fund has awarded contract for Prime Minister's ICT Internship Program worth Rs. 284.36 million to Pakistan Software Export Board as per Board's approval on July 13, 2016. Prime Minister's ICT Internship Program is offering 3000 Internships to ICT graduates who aim to develop a career in ICT Industry & IT departments of public and private sector organizations.

Program Objectives are as follows:

- Meet industry needs for fresh graduates with relevant and latest training in most demanded areas as determined by the industry.
- To give an opportunity to the graduates of the country and make them contributing members of the ICT industry & IT department of the public sector organizations. This will be accomplished through a 6-month internship at ICT companies & IT department of the public sector organizations.



Brief program details are as follows:

Project Duration:	17 months
Total Cost:	Rs. 284.36 million
Project Start Date:	January 2017
Stipend Amount:	Rs.15,000/- per month

Women Quota: 30%

Disabled Quota: 2%

Project website: <http://www.internship.pseb.org.pk/internship/>

The geographical distribution of the interns and their placement status during FY 2017-18 is given below:

Area	Interns Placed during FY 2017-18
Punjab	597
Sindh	335
KPK	182
Balochistan	214
Capital Territory (ICT)	29
Gilgit Baltistan	25
AJ&K	32
FATA	22
Total	1,436

PRIME MINISTER'S NATIONAL ICT SCHOLARSHIP PROGRAM (PM NICTSP)

Since 2007, Ignite has been implementing Prime Minister's National ICT Scholarship Program (PMNICTSP) across all provinces of Pakistan including FATA and Gilgit Baltistan. About 4,761 fully-funded 4-year ICT-related undergraduate degree scholarships have been offered to the talented and deserving students of Pakistan under this program in top universities of the country.

During the year 2017-18, about 400 students awarded scholarship under PMNICTSP Fall 2014 Intake, successfully graduated in spring 2018 semester.

PRIME MINISTER'S SCHOLARSHIP PROGRAM FOR TALENTED STUDENTS OF BALUCHISTAN

Ignite has been funding for the first three batches (2011-12, 2012-13, 2013-14) of 'Prime Minister's

Scholarship Program for the Talented Students of Baluchistan' for a period of five years (class 8th to class 12th) with total approved budget of PKR 675 million. The batch enrolled in 2011-12 and 2012-13 with total 286 students have concluded their terms and have graduated.

During the year 2017-18, 139 students enrolled under Batch-III (2013-14) successfully completed their studies.

TRAINING BLIND PERSONS IN PAKISTAN ON ASSISTIVE ICT TECHNOLOGIES

Pakistan has a major population (2 million+) of Blind persons. The specific visual disability faced by Blind persons makes it challenging for them to acquire skills that could allow them in managing their day-to-day affairs in effective manner. ICT tools provide important opportunity to Blind persons to manage their affairs effectively and also contributing to National Economy. This project focused on addressing this challenge being faced by blind people i.e., lack of skills to use technologies by offering them trainings.



Brief program details are as follows:

No. of blinds trained:	150
Project duration:	18 Months
Training's duration:	3 Days
Venues:	Karachi, Lahore, Peshawar, Quetta, Gilgit, Islamabad, Muzaffarabad

Outline of trainings:

- a) Learn to use basic features of touch screen applications mobiles
- b) Learning to use selected Touch screen mobile

- c) Learn basics of computers e.g., MS Windows OS Interface
- d) Introduction to JAWS screen reader software and learn how to use it
- e) Introduction to MS Word, MS PowerPoint, Google Chrome Internet
- f) Introduction to Bank ATM Machines, how blind can get ATM card, how to use it
- g) Monitoring of Technical R&D Projects

The company has funded a diverse range of technical R&D projects within the ICT spectrum since its inception. These projects are being executed at multiple universities and ICT organizations of Pakistan. Under these funded projects; individuals including professional engineers, researchers, software developers, project managers, finance & accounts professionals, undergraduate and graduate students are being trained to perform state of the art R&D activities in their respective fields. The snapshot of technical R&D projects that were “Ongoing (48)” and “Closed (13)” during FY 2017-18 is given below:

#	Themes	Category Wise No. of Projects and their Net Worth (FY 2017-18)			
		ONGOING		CLOSED	
		No. of Projects	Worth (Rs. Million)	No. of Projects	Worth (Rs. Million)
1	Security	4	63	2	26.65
2	Education	5	97	0	0
3	Energy	3	49	1	11.95
4	Health	9	139	3	62.28
5	AI/Big Data	8	139	4	49.95
6	Telecommunication	11	181	3	62.25
7	Embedded Systems	1	35	n/a	n/a
8	IoT	3	78	n/a	n/a
9	Wearables/Implantable	3	38	n/a	n/a

#	Themes	Category Wise No. of Projects and their Net Worth (FY 2017-18)			
		ONGOING		CLOSED	
		No. of Projects	Worth (Rs. Million)	No. of Projects	Worth (Rs. Million)
10	Agriculture	1	19	n/a	n/a
Total		48	838	13	213.08

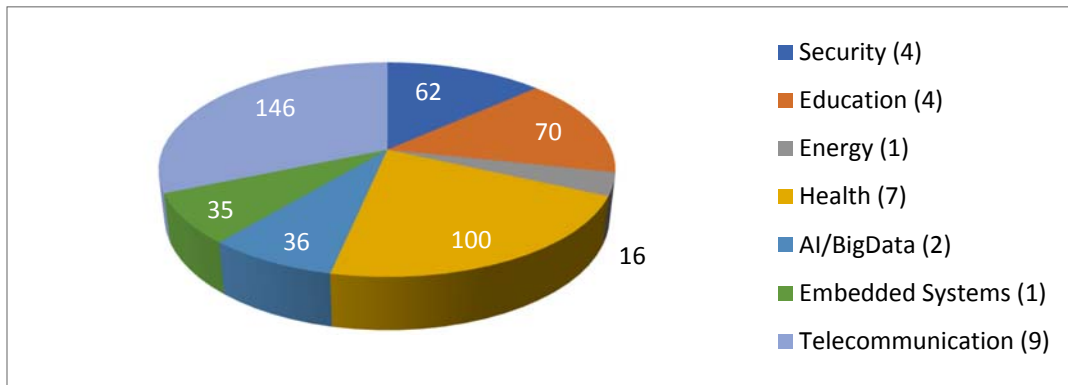
The summarized information pertaining to achievements of above-mentioned projects are given below:

Publications					Patents Files				Awards		
Conference		Journal	Thesis/Article	Total	US	Local	Korea	Total	Local	Intl	Total
Local	Intl.	Intl.									
3	20	15	3	41	1	10	1	12	4	1	5

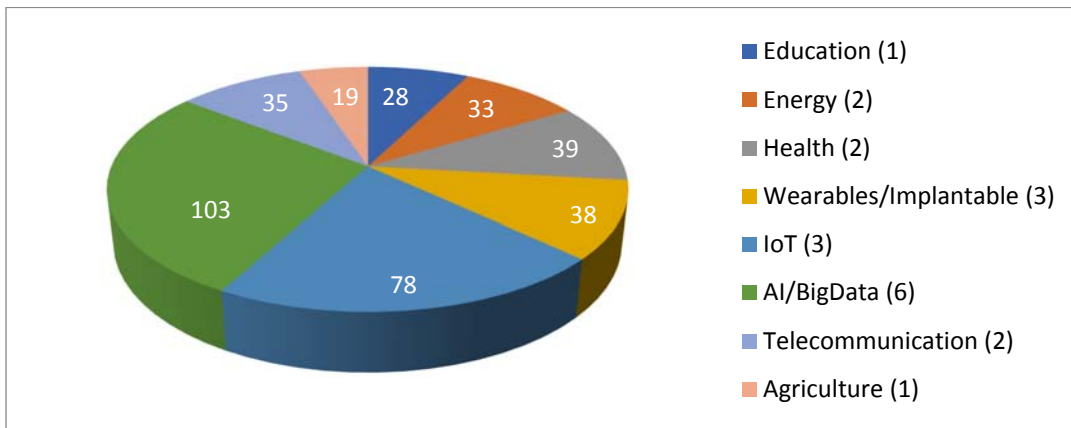
The details of awards are as follows:

#	Project Name	Award
1	Design and Dev. of Next Generation Modelling and Simulation Platform for Cancer Systems Biology	All Pakistan DICE 2017 – Runners Up
2	Myo Prosthetic Upper limb	The product became part of the “Robot Design and Development Lab” of the National Center of Robotics and Automation
3	OCT Image Analysis System for Grading & Diagnosis of Retinal Diseases in I-Hospital	Received PASHA and APICTA awards
4	DealSmash Recommender System	Selected for the eFounders fellowship by Alibaba Group in Big data category
5	Innovative Learning Solution for Science	Best in E-learning award by PashaAwards

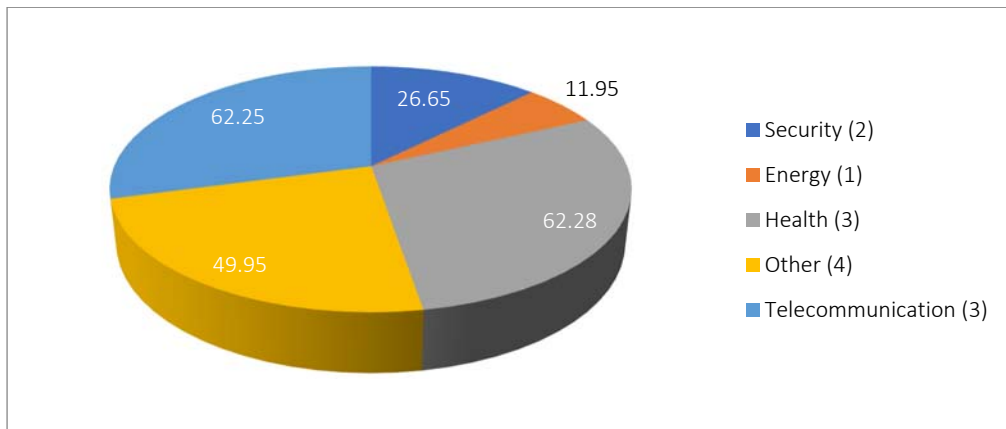
	Education	
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Twenty-Eight previously approved “Ongoing” projects were managed worth PKR 465 million



Twenty new projects were “Started” and managed worth PKR 343 million



Thirteen projects were “Closed” worth PKR 213 million after completing all formalities

The following are the thirteen (13) technical R&D projects that have successfully completed their research activities from July 01, 2017 to till June 30, 2018.

“Enabling Information Access through Mobile based Urdu Spoken Dialog Systems & Screen Readers”

The project developed a widely accessible system through which users can request for and retrieve information orally using local language. Through this system, a user was able to use a mobile phone to request for information verbally. The information was retrieved and then sent to the user in the form of speech. This technology addressed all three barriers of literacy, language and connectivity, and therefore served as a simple and efficient information access interface for Pakistani citizens and for the visually impaired community of Pakistan.

“High-Quality Tele-Medicine-Driven Video Encoding System Under Very-Low Bitrates”

The project developed a novel telemedicine-driven video encoding system that provided remote physician the modes to mark some regions under investigation within the diagnostic video. The marked regions under investigation information and the statistical properties of medical videos were used to provide high quality to important regions in diagnostic videos (like body parts under investigation and moving parts in ultrasound videos, etc.), while tolerating video quality loss in less-important regions (like background, not-selected body parts, etc.). The project also developed a model and built relationships between different block categories and optimal coding configuration.

“Design and Development of Opportunistic Large Array Networks for Smart Grid Communications”

This project dealt with the application of wireless sensor networks for smart grid communication systems. The project was divided into two main phases, the first being the algorithms design phase and the second was the implementations phase. Both phases have been completed successfully.

“Design and Implementation of an Experimental Platform for Cooperative Cognitive Communication Networks”

The project developed a novel, effective, and practically feasible system-level cognitive cooperation protocols with the help of a hardware/software experimental platform. The project targeted a

cooperative broadcast channel consisted of multiple users who cooperated amongst themselves when received information from a single source over a shared (licensed) frequency spectrum. The project also provided an opportunity to develop novel protocols that exploited cognitive cooperation in a broadcast setting, and therefore resulted in original publishable research.

“An integrated Toolset for Model-based Testing of Industry-Scale Software Systems”

The project developed a tool to automate various steps required for system-level MBT testing. The tool was based on well-established standards for modeling the system under test (SUT) that were followed by the industry, i.e., Unified Modeling Language (UML). The developed toolset used UML class diagram and state machines annotated with Object Constraint Language (OCL) constraints as input.

“Enabling Green Video Streaming over Internet of Things”

The project presented a novel research vision for green video streaming over Internet of Multimedia (IoM), which is an enhancement to the Internet of Things (IoT). Its prime objective was to enable video streaming as part of the realization of IoT with reduced overall ecological footprint, in terms of energy consumption and CO₂ emissions, while maintaining video fidelity as tradeoff with the energy and carbon footprints.

“Development of Type-2 Hypervisor for MIPS64 Based Systems”

The project developed an open-source Type 2 hypervisor which installs and runs like an ordinary application on MIPS64 Linux based systems. This hypervisor hosted multiple MIPS64 Linux virtual machines with securely isolated resources like CPU and memory. This Type 2 hypervisor is developed and released under the GPL license.

“Dengue Epidemic Surveillance Modeling, Visualization, and Response Management”

This project significantly improved provincial and national health surveillance with regard to dengue epidemic. This developed a dengue modeling, analysis, exploration, visualization, surveillance, and response toolset for whole of Pakistan by employing robust and accurate dengue epidemiological models with real-time inference and preplanning capabilities.

“Development of a Net Enabled Retinal Image Analysis and Screening System for Grading and Diagnosis of Diabetic Retinopathy and its Integration in i-telemedicine system”

The project provided a low cost and easy access solution to patients with diabetes for regular monitoring of the retina to avoid the risk of sudden vision loss. In this project, a self-diagnosis system for DR was developed with capabilities of automated screening and diagnosis of abnormalities present in human retina, a universal communication node to provide real time availability of data and intelligent server to assign expert and schedule patient's data and help in early detection of DR to save patient's vision.

“Smart Intelligence – An OCR Engine for the Android & iPhone Smart Phone “

This project developed a state-of-the-art OCR Engine which could be used by the developers to develop their own applications. The project was divided into two different phases. In the first phase the character recognition problem for the constrained or structured document images was successfully tackled and in the following phase the character recognition problem for the unconstrained or unstructured document images was tackled. Overall, the project resulted in the benchmarking of different OCR techniques and eventual implementation on smart phones.

“Development of an Efficient Water Marking System for Information Hiding & Protection”

The project developed new watermarking techniques using biological organisms. Such model enabled to use living organisms e.g., bacteria or GMOs to store user data in their DNA sequences, where the information will be stored over several generations without having any adverse effects on the host organism.

“Multimodal Sensing Enabled Real-time Intelligent Wireless Camera Networks”

This project designed, developed and deployed a low cost intelligent and robust security network solution, which provided efficient performance and sustainability in real-time, while minimizing missed events and false alarms and deployed it at the locations of interest

“Design and development of Hybrid IPV4 & IPV6 Network for QoS Enabled Video Streaming”

The key research area of this project was to identify as the IPv6 multicast, v6 to v4 tunneling and IPv6 QoS. In order to enhance the benefits of this project, the design documents related to the multicast video streaming application, source code of the application, documents describing the IPv6 test-bed

architecture and other information sources were made available to public, and specially to the telecom sector and other academic institutions.

MENTORSHIP PROGRAM

Ignite has also taken an initiative to start “Ignite’s Mentorship Program” which is an unpaid service. This mentorship program has been structured in a way whereby pool of industry/academia led experts (mentors) are being invited to spend some time with the projects (Ignite funded) assigned to them.



Generally, a maximum of 2 projects are being assigned to the experts, which entails an engagement of about 2 hours in a month with the intent to advise these projects on primarily their business side. The principal investigators (PIs) of these funded projects are given a list of subject experts and they choose who they would like to have as mentors. Summarized status of the Mentorship Program as of today is as follows:

Total No. of Mentors	No. of Mentees latched with Mentors
22	12

Conclusion:

Ignite is committed to significantly enhance the ICT related research and development capacity of its stakeholders in meaningful ways. Company believes in an efficient mobilization of its resources where emphasis is given to achieve technical excellence, innovation which ultimately has a positive impact on the economic growth of the country and for the benefit of the society.

Special Communications Organization

SCO has completed 44 years of continued devotion to the cause of expanding comprehensive ICT services to the people of far-flung & most rugged areas of Azad Jammu & Kashmir (AJ&K) and Gilgit-Baltistan (GB). During this journey, SCO has endeavored to build ICT environment at par with rest of the country. In pursuit of its mission, SCO has embraced a total reach out policy for its customers on their doorsteps in the remotest areas with quality ICT facilities.

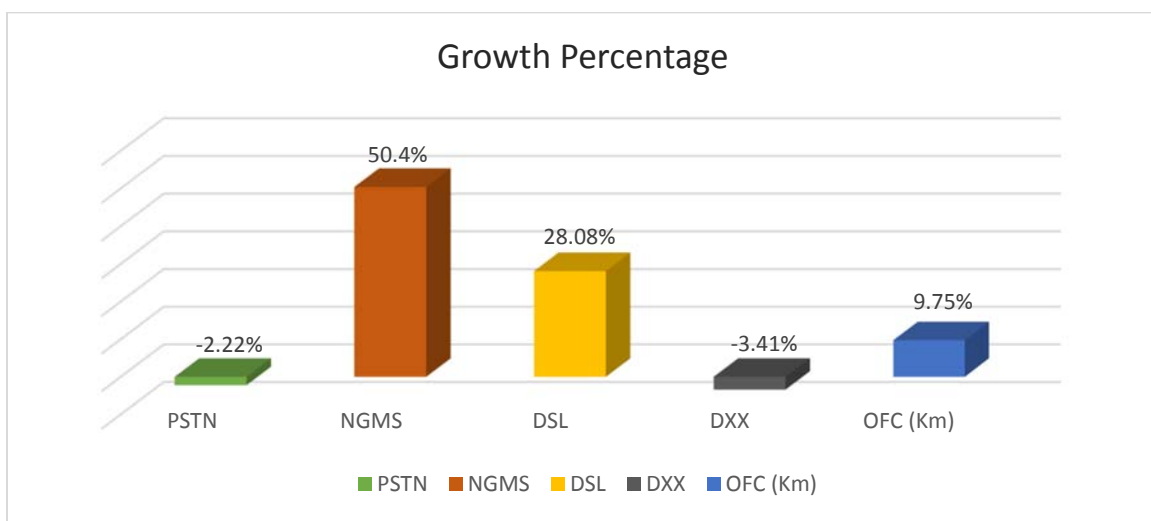
SCO being Significant Market Player (SMP) has the unique honor of providing all types of communication, i.e., Landline, NGMS, CDMA, WLL, Broadband Internet and Digital Cross Connect (DXX) to the people of AJ&K and GB. SCO has also progressively enhanced its transmission media capacities through Optical Fiber Cable (OFC), supplemented by Satellite & Microwave networks and presently in phase of launching 3G/ 4G services in its areas of responsibility.

SCO, during the last one year remained committed in expanding state of the art telecom facilities to the people residing in remote areas of AJ&K and GB. The progress made by SCO over the past one year has been in conformity to our commitment of providing quality telecom services and extension of digital technology from voice to data to our valued customers.

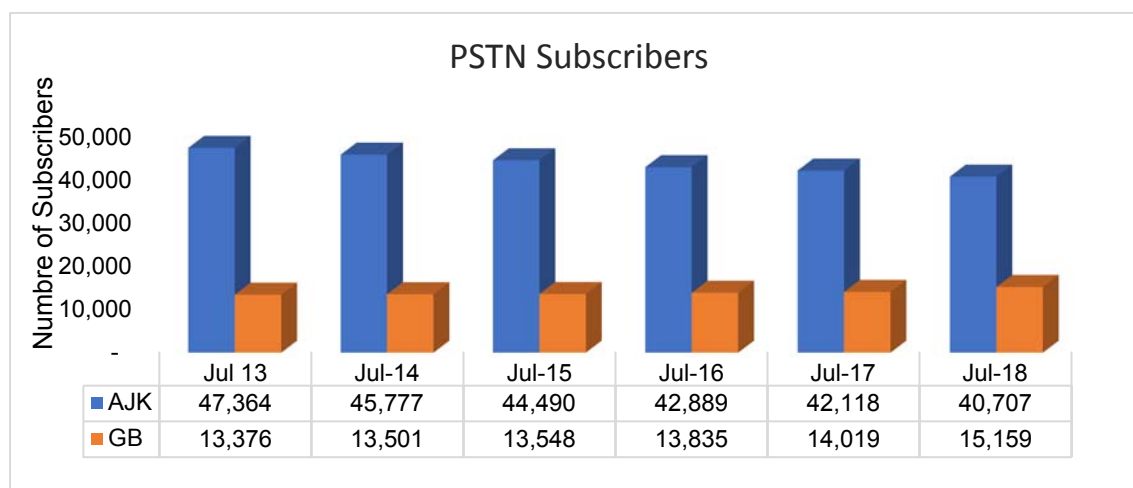
ACHIEVEMENTS DURING FY 2017-18

Some of the milestone achievements are appended below:

a. **Subscriber Growth:** Overall subscribers growth from year 2017 to 2018 is as under:



b. Fixed Line Subscribers: The fixed line market in Pakistan as well as in AJ&K and GB remains under-developed due to the dominance of the mobile segment. The market is predicted to decline further over the next five years as the mobile segment continues to grow for both voice and data / broadband usage. Fixed line subscribers stood at 40,707 in AJ&K as compared to the last year which was at 42,118, showing a declining trend at approximately 4 % per year while in GB the subscriber count stood at 15,159 in 2018 as compared to the last year's 14,019 showing a positive trend. It is expected that deployment of Broadband Triple Play Services project by SCO in 11 major cities of AJ&K and GB, the negative trend will improve.



c. Broadband Subscribers: DSL dominates the fixed broadband market. Its market share has been rising over the past five years. Mobile broadband subscriber increases day by day while fixed broadband growth is very less. Pakistan has seen a mobile penetration at 27.2% while fixed line broadband penetration is at 1.1%. The same trend is seen in AJ&K and GB where mobile broadband is on the rise. DSL subscribers are improving which stood at 22,471 in 2018 while the same was 17,545 in previous



year showing 28% increase in subscribers' base. The broadband penetration with respect to the population stand at 0.36% as compared to Pakistan telecom market, which stood at 0.82%. The numbers will further increase after deployment of Broadband Triple Play Services project.

d. Cellular Subscribers:

(1) AJ&K. SCO is one of the leading telecom operators in AJ&K with 126 BTSs installed with active subscriber base of over half a million. With the addition of Value-Added Services (VAS) and BTSs, the number of subscribers is expected to increase.

(2) GB. SCO is leading in terms of subscribers and BTSs installed in GB region. Total number of installed SCO BTSs are 126 and subscribers base stands at 642,616.

e. Exclusively Connecting Local: Populace in Under-Served Areas. Exclusive coverage of SCO network in nearly 250 locations at present highlights the significance and importance of SCO's role in the area. Particularly, the most sensitive and under-served / un-served areas along Line of Control in AJ&K and far-flung valleys in GB are only being served by SCO.

f. Corporate Social Responsibility (CSR): Being the Significant Market Player of AJ&K and GB, SCO considers CSR activities very important and essential. From organizing events of public interest till celebration of local and national events, it has remained the hall mark of SCO.



TREE PLANTATION DRIVE



ESSAY WRITING COMPETITION



T20 CRICKET CHAMPIONSHIP



g) **Revenue Targets:** SCO has successfully achieved overall assigned revenue targets above 100% in the last 10 years.

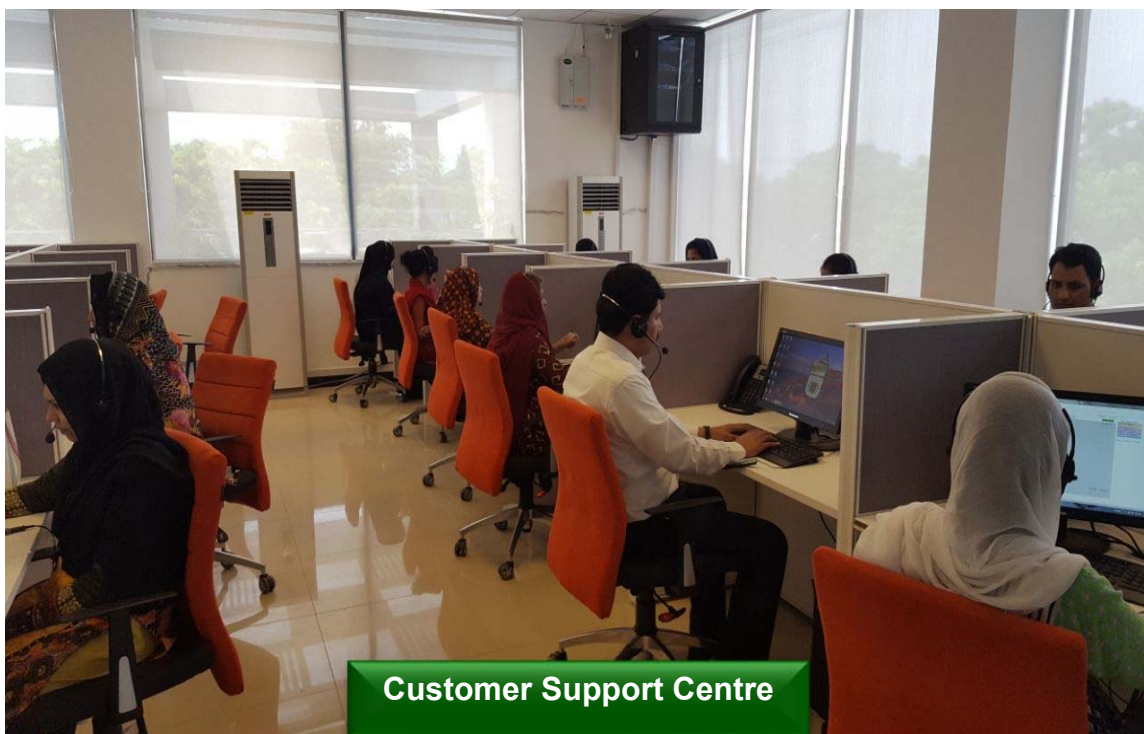
- (1) Revenue target for Financial Year 2017-18 - Rs 2,400 million
- (2) Revenue realized for Financial Year 2017-18 - Rs 2,587 million

DEVELOPMENT ACTIVITIES

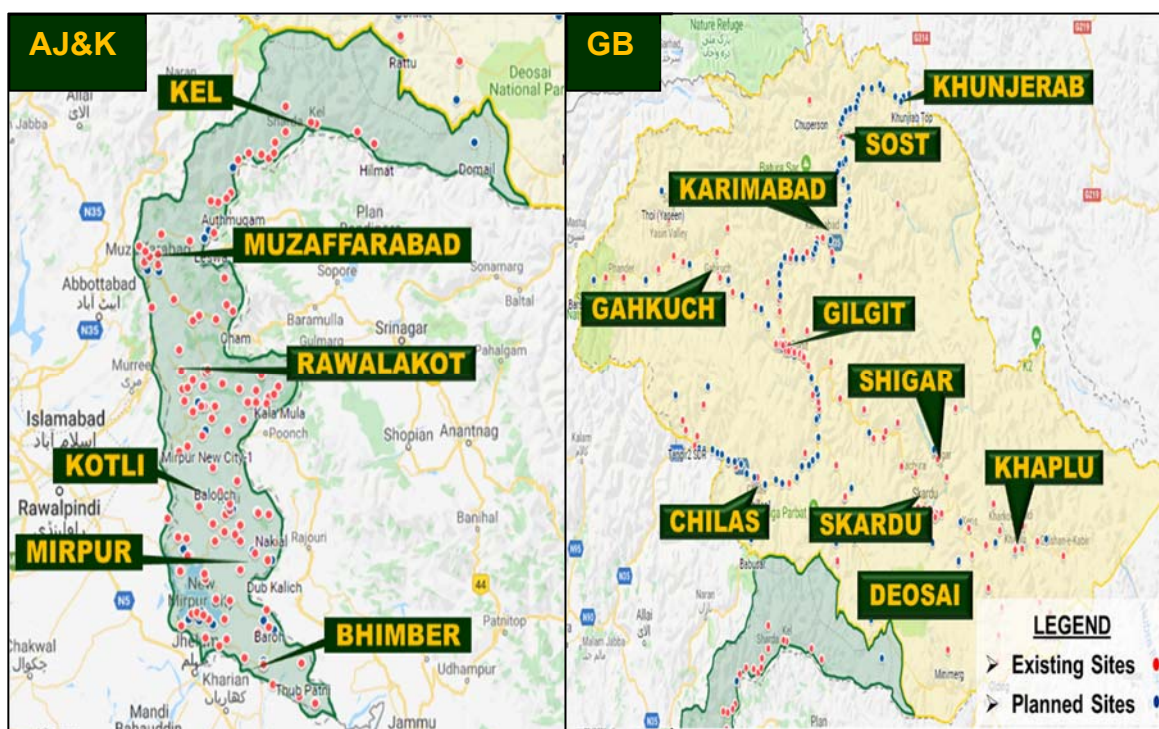
Construction of Cross Border OFC System between China and Pakistan for International Connectivity of Voice / Data Traffic: Project for establishment of alternate international connectivity for both China and Pakistan was approved in December 2010. 820 Km OFC with Microwave Backbone has been installed and commissioned. Now project is fully operational and formally inaugurated by Prime Minister of Pakistan on 13 July 2018. Project has a key role in support of other projects being undertaken under the CPEC ambit. The project has broad socio-economic dimensions especially for underserved regions by creating job opportunities for locals of the area while adding to the overall economic prosperity of remote locations. It will also be a significant source of revenue for Govt of Pakistan.



Launching of NGMS 3G/ 4G Services in AJ&K: SCO GSM (2G+) Network in AJ&K and GB was installed in year 2004-05. GSM network has completed its life since vendor has declared GSM equipment End of Manufacturing (EoM), End of Support (EoS) and End of Life (EoL). In order to upgrade GSM (2.5G/ 2.75G) network to NGMS (3G/ 4G) network in AJ&K, project was approved by CDWP on 11 Feb 2016. Cellular network of AJ&K has been up-graded for provision of NGMS 3G / 4G services.



Expansion & upgradation of NGMS (3G/4G) Services and Seamless Coverage along KKH in GB: Project for Expansion & Upgradation of NGMS and Seamless Coverage along KKH was approved on 17 January 2017. After completion of tendering formalities, contracts for civil works and NGMS equipment have been awarded. 21 RAN sites have been installed and commissioned and work on remaining sites is in progress.



Establishment of SCO Technical Training Institute at Gilgit: Project was approved by CDWP on 9 May 2017. Work on site development was started in February 2018, however locals started protesting on land ownership and work was stopped.

Pakistan Telecommunication Employee Trust

Pakistan Telecommunication Employees Trust (PTET) is established under the Pakistan Telecommunication (Reorganization) Act, 1996 to disburse pension to PTCL pensioners.

PTET is currently serving over 39,000 pensioners as at 30 June 2018. Detail of achievements and progress are as under:

1. For pensioners' facilitation, the option to receive pension through bank was started in 2015. In almost 4 years, over 28% pensioners have opted to draw pension through their bank accounts.
2. To enable a faster communication with pensioners:
 - PTET websites in Urdu/English versions have been revamped. These contain important view-only information
 - Universal access number (UAN) helpline is installed for pensioners' facilitation, with dedicated staff available during office hours
 - A text message facility has been initiated for better communication with pensioners
3. The Trust has obtained ISO 9001:2015 certification. This is in continuation of our strategy to bring operational excellence and is recognition of our standards in line with international best practices.
4. NADRA's VeriSys system has been installed to enable verification of pensioners' CNICs, conversion to family pension and data cleansing.
5. Computerized pension books have been introduced and accordingly, all new pensioners are issued new pension books.
6. Pension payment process is already automated and records have been digitized in the form of scanned copies.

Telephone Industries of Pakistan

The Telephone Industries of Pakistan was established by the Government of Pakistan (P&T department) in 1952 with the collaboration of Siemens of Germany. The initial ratio of shares was 75:25. The main objective of the company was to make telephones and also cater to requirements of the growing telecom industry within the country. The company remained as a subsidiary/subordinate company to the erstwhile P&T Department and later on its successor i.e PTCL till 2006-7. On privatization of PTCL, TIP was placed under the Ministry of IT and Telecom.

The company had started incurring losses from the year 2002 as the company could not cope with rapidly transforming technologies in the telecom sector. This gradually led to decline in its income and profits. The GoP had to bear the burden of providing funds for establishment related expenditure in 2008-09 and onwards till today. Many other issues have cropped up as a result of instability to the company i.e land disputes, union related initiatives and serious financial losses due to weak administrative and financial controls.

The year 2016-17 and 2017-18 has been an eventful year in the history of the Telephone Industries of Pakistan. It was actually the start of the reformation process of a sick /loss making unit with the sincere objective of making this entity a better and stable corporate entity. The Ministry of IT and Telecommunications had also placed TIP on the list of Privatization for early implementation. Following is an overview on the situation prevailing there and the administrative and financial actions taken by the TIP management during the current year to streamline and rationalize matters within the Telephone Industries of Pakistan.

ADMINISTRATIVE ISSUES

- 1) Serious unrest and agitation among the regular employees of TIP to safeguard their vested interests accruing as a result of no real business in the company, ex- contractual workers seeking regularization or ex- colony board employees claiming to be TIP employees and they had obtained stay orders from High and lower courts. There were 64 court cases against TIP at the start of July 2016.
- 2) Advertisement for the hiring of new company Secretary, Manager Finance, manager Internal audit was published in newspapers, as a result ne Manager finance is hired in order to control

financial matters of TIP, However, due to higher demand of company secretary from open market, additional charge of TIP Company secretary was handed over to Pakistan software board (PSEB) company secretary is looking after the company matters since then.

FINANCIAL SITUATION

- a) Financial Reports (Audit) for the years 2013-14, 2014-15, 2015-16 approved and submitted to SECP after approval from AGM.
- b) Issues relating non filing of tax resolved.
- c) The finance department was filled with individuals hired on daily wages and no regular employee was equipped with knowledge, skills and experience to deal finance related issues. Most of these daily wages employees were those who were earlier terminated and almost 95% were litigants against the company in high courts and Supreme Court of Pakistan. Most of the such litigants who were rehired on daily wages, their services were disengaged from the company services
- d) Wasteful expenditure due to bad agreements between with CBAs / unions involving subsidies / benefits in House rent, electricity & gas bills, medical treatments etc. resulting in loss of millions of rupees. This was despite repeated pointing out by Government Audit teams terming such expenditures as wasteful and un-authorized.

CORRECTIVE ACTION TAKEN

- a. **Administrative Approvals and Co-signatory:** Managing Director became co-signatory to all transactions /payments related to TIP and all delegation of financial powers were abolished.
- b. **Rationalization of extra staff:** The existing temporary staff (contingent) in start of July 2016 was 128 in TIP Factory Haripur. This strength was reviewed and reduced to 64.
- c. **Engaging third Party for temporary employees:** Services of outsourcing agency (third party) was used to engage all contractual /contingent employees for regularization of services.
- d. **Streamlining of Transport and Related Expenditure:** There were 63 vehicles on the strength of TIP in July 2016 with a majority of them un-roadworthy. Therefore, an assessment was made for roadworthy and un-roadworthy vehicles. Decision was taken to dispose off unusable vehicles, old

and off-road ones first, in four phases due to high maintenance cost. All vehicles allocated to officers with POL quota were withdrawn and compensated with car /conveyance allowance. PSO POL fleet cards were introduced in TIP for the first time. By 30th June, 2017, 34 vehicles were disposed off in the first two rounds of auctions fetching Rs.22.392 million.

e. **Corrective Action:** Disciplinary action by issuance of show cause notice was taken against TIP employees involved in indiscipline and land corruption case in TIP Housing Scheme. A complaint was lodged with NAB by MOITT resulting in the filing of a reference in the Accountability Court against 141 employees of TIP for loss of Rs.450 million to the government exchequer.

f. **Rationalization /Austerity measures:** Effective Jan. 2017 onwards, all employees in different building blocks were directed to shift to one building i.e main administration block. The impact was reduction in expenditure of factory electricity bills.

g. **Establishing online file movement in TIP**

h. **Redesigned Website:** TIP management has also introduced a new version of its website and is continuously making efforts to improve the website and its contents (www.TIP.gov.pk).

i. **Financial streamlining:** During the last six months, financial audit of pending years 2013-14 and 2014-15 and 2015 &16 have been completed following a timeline agreed with SECP.

j. **Savings:** Due to strict austerity measures and fiscal control, the operating expenses in FY 2016-17 resulted in savings. POL payment through PSO fleet cards had a good impact. Expenditure on Purchase of Medicines was curtailed significantly resulting in savings. Expenditure on Medical reimbursement was seriously curtailed due to stringent checks on fraud or wrong submission of cases.

k. **Pension through Bank Accounts:** Reportedly a figure of 3000 plus pensioners of TIP was quoted and was never verified. However, to ensure transparency and authenticity of process, it was decided in January 2017 to introduce a transparent and verified mechanism of disbursement of pension only through bank accounts. Despite hurdles, by end of June, 2017, there are 2280 verified pensioners receiving pension through verified bank accounts throughout the country.

l. **Utilities –Electricity & Gas Bills:** For years, TIP had been making undue and unverified payments for electricity and gas bills of residences of TIP and ex- TIP residents, including bills related to schools, hospital and estate office. Average monthly expenditure paid on electricity ranged

between Rs.5.00 million (off peak months) and Rs.10.00 million (full peak months). TIP management with the solid backing of TIP Board of Directors adopted the approved policy of withdrawal from making payments in matters related to T&T colony, Haripur under the head of utility. This resulted in huge savings from the resources of TIP (see table 1)

m. **Production efforts:** The TIP management took a conscious decision to assess the capability of the machinery and assembly lines of the TIP factory workshops and it was decided to manufacture steno telephone sets in view of the overwhelming demand of such sets in the public sector. Therefore, work on production of 2500 steno sets was initiated as a pilot project through publication of tenders in newspapers. Confirmation of delivery has been received for foreign imports and consignments will be reaching soon. Hence it is expected that once this test production is successful, the size of production will be increased in view of available finances efforts are under way to sale out these steno sets and TIP participated NTC tender

n. **Court Cases:** At the start of the financial year, TIP was contesting 64 courts cases in various courts including the Supreme Court of Pakistan. By the end of June 218, TIP was facing many courts cases made by litigants (existing / ex- regular /contractual employees/CBA office bearers) desirous of either hindering or halting corrective action / reform agenda being carried out being part of the vested interests responsible for the decline of Telephone Industries of Pakistan. TIP management was able to holding itself successfully with the support of the Ministry of IT and Telecommunication and TIP Board of Directors. It has also adopted a proactive approach to reduce the litigation burden on TIP.

Pakistan Software Export Board

Pakistan Software Export Board (PSEB) is an apex body of the Ministry of Information Technology & Telecommunications with the mandate to promote Pakistan's IT Industry in local and international markets. PSEB has been facilitating IT industry through a series of projects and programs in international marketing, human/intellectual capital development, infrastructure development, company capability development, as well as promotion of innovation and new technologies. PSEB's governance structure consists of a 7-member Board of Directors. A Managing Director who is selected from the private sector and appointed for a two-year term, heads the organization. PSEB organizes its activities and its internal organization around International Marketing, PSDP Project Management, Domestic Business Facilitation, Infrastructure Development, and Technical/Data Node Department. The aforementioned departments are funded through four sources of funding: A grant budget provided by the Ministry of Information Technology, fees contributed by PSEB member companies, funds generated through bandwidth provided to the IT companies, and PSDP "Public Sector Development Program" financed projects. PSEB does not produce its own software products or sell software developed by Pakistani Companies. Its sole mandate is to ensure sustainable development of the Pakistan's Information Technology Industry, bolster cooperation of Pakistan's IT sector with international entities and attract IT companies to invest in Pakistan's IT sector.

PSEB's core functions are summarized below:

- Industry advocacy & policy making
- International marketing & promotion
- Domestic business facilitation
- Industry capacity building
- Establishing IT Parks & STPs

QUICK FACTS ABOUT THE INFORMATION TECHNOLOGY INDUSTRY

Pakistan's IT & ITeS industry comprises of more than 5,000 companies (3,500 export oriented +1,500 domestic), and this number is growing each year. These companies possess demonstrated expertise

base from high-end customized software development to diversified BPO services. Pakistan's IT sector is one of the few segments in Pakistan's economy that has demonstrated positive year-on-year growth and has earned significant foreign exchange for the country.

Pakistan's IT oriented exports comprise of software development and IT enabled services (also called ITeS that includes call centers and business support activities) and employs over 300,000 English-speaking IT/BPO professionals with many world class experts in current and emerging IT products and technologies. 20,000+ IT graduates each year join the work force. Pakistani companies have especially done well in emerging areas like mobile phone software (Apple iPhone and Google Android), mobile gaming and animation.

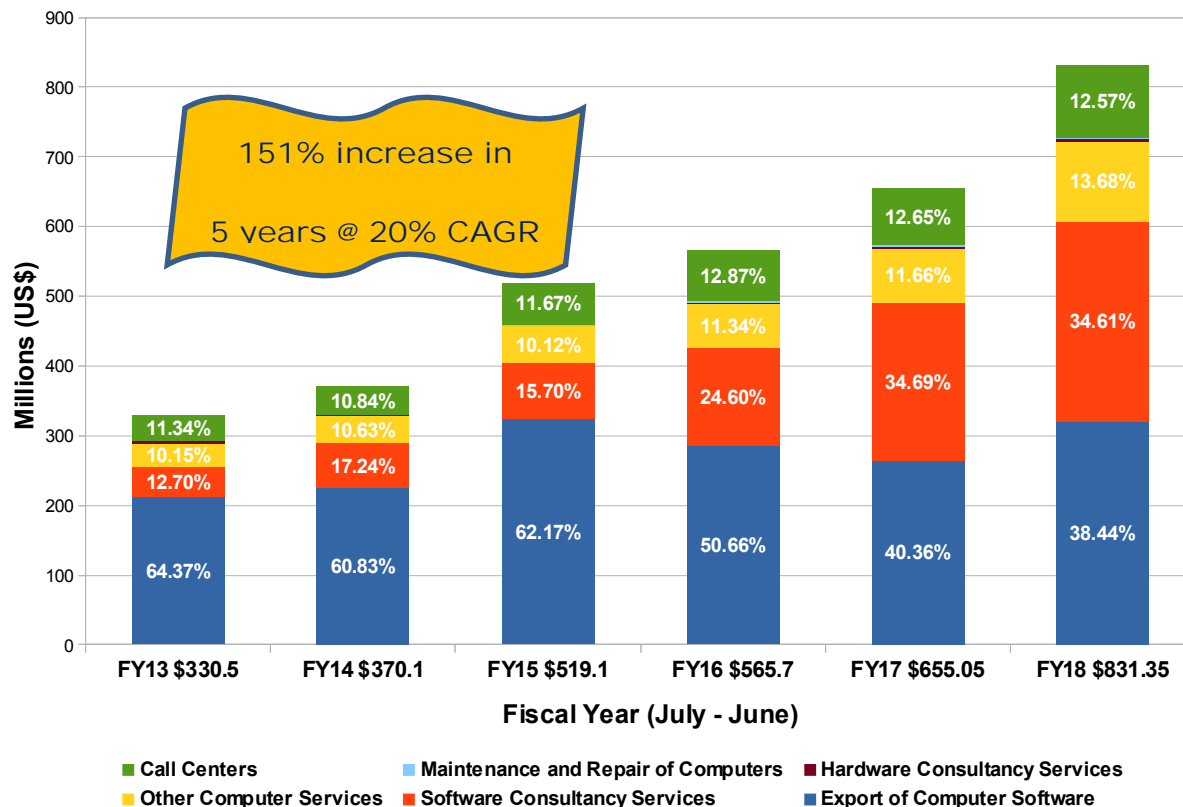
Government incentives to the IT & ITeS industry include income tax exemption on IT & ITeS exports till June 2025, 100% foreign ownership of IT & ITeS companies, up to 100% repatriation of profits for IT & ITeS investors, 3-year tax exemption for IT startups, tax holiday for venture capital funds till June 2024, foreign currency account permitted for receipt of export remittances (Up to 35% can be retained in foreign currency) and accelerated depreciation of 30% on computer equipment. As a result of these incentives, Pakistan's IT exports are estimated to have crossed \$3.3 billion per annum and Pakistani MSMEs & Freelancers contributed an estimated \$500million to the revenue earned by Pakistan's IT Sector, according to industry analysts. Pakistan's IT Industry is exporting to 100+ countries. The domestic market accounts for over \$1 billion in annual revenue, and growing rapidly as ICT adoption in Pakistan is increasing across verticals. Pakistan has been ranked as the 3rd most popular country for freelancing in the Online Labor Index, 2018 published by Oxford Internet Institute (OII) and 3rd most financially attractive country in the world for outsourcing services according to A.T Kearney's Global Services Location Index 2017.

Year	IT Remittances (Millions USD)	Estimated IT Exports (Billions USD)
FY2013-14	370	1.5
FY2014-15	519	2.1
FY2015-16	565	2.3
FY2016-17	655	2.9

FY2017-18	831.35	3.8
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IT & ITeS Export Remittances

(Source: Trade in Services data, State Bank of Pakistan)



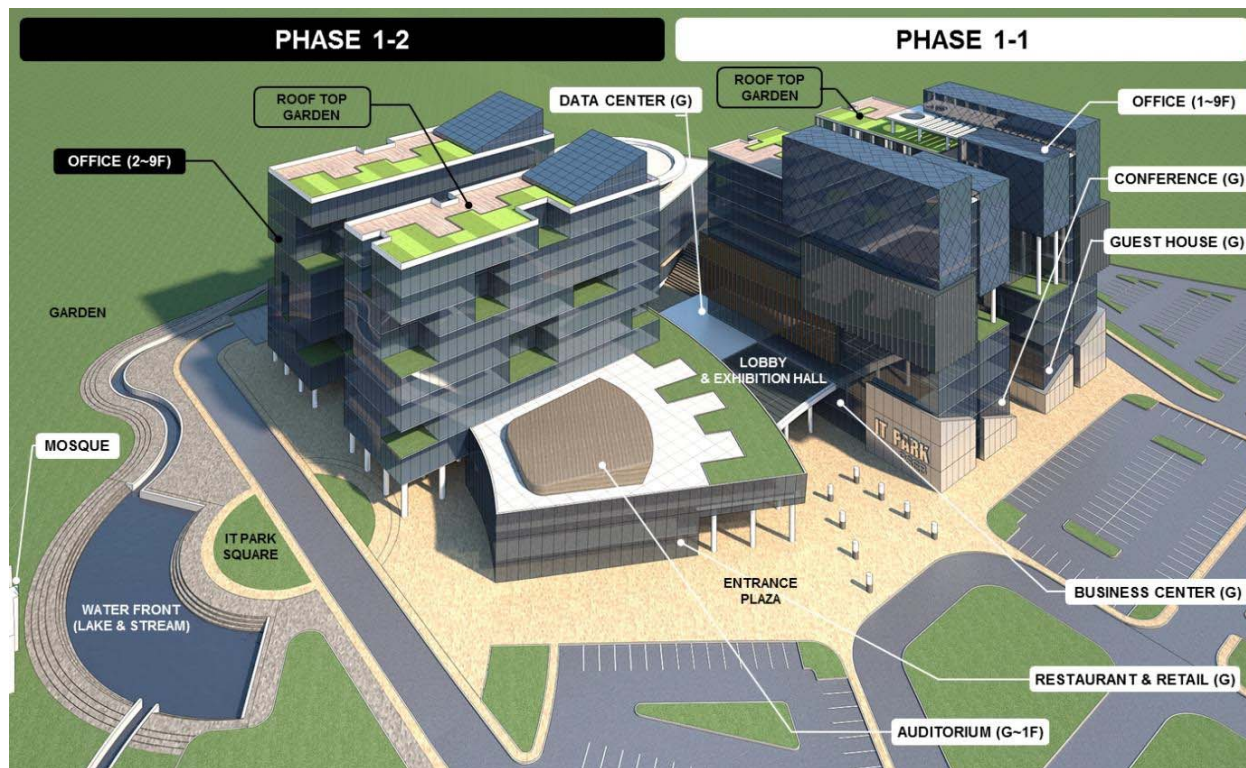
INFRASTRUCTURE DEVELOPMENT

Software Technology Parks (STPs) have been a major factor in facilitating the IT companies and one of the main reasons for the development of the IT industry and its aforementioned success.

Pakistan Software Export Board has leased 47.79 acres of land from Capital Development Authority (CDA) at Chak Shazad, Islamabad for the development of state-of-the-art Information Technology Park, to be built under financing from Korea Exim bank through the Economic Development Cooperation Fund (EDCF). In this regard, Ministry of Information Technology and Pakistan Software Export Board have been closely working with Korea Exim Bank. Feasibility study of IT Park has been completed by Korean consultants and PC-1 has been approved by Ministry of Planning, Development and Reforms.

According to the Korean consultants, construction is expected to take 2.5 years.

Building layout of Proposed IT Part in Islamabad:



PSEB has acquired 6 acres of land from Civil Aviation Authority at Jinnah International Airport Karachi for establishment of IT Park. Lease agreement was signed between CAA and PSEB in October 2015. After tendering process has been completed, PSEB will start feasibility study for IT Park in Karachi during 2017-18.

Currently, PSEB has 14 STPs covering an area of one million square feet which have been converted to STPs by PSEB by signing agreements with their landlords that they will keep rent affordable for IT companies and will provide backup power to companies inside the STPs. These STPs have been established by converting suitable third-party buildings through agreements with their owners. At present, there are more than ninety IT companies having offices inside these STPs.

The Software Technology Parks (STPs) are a major factor in facilitating the IT companies and play a major role in the development of the IT industry. Software Technology Parks house IT companies and professionals and act as software factories generating software and IT exports for the country every year.

INTERNATIONAL MARKETING

PSEB's International Marketing Department regularly undertakes initiatives to:

- Promote Pakistan as a competitive destination for outsourcing of IT related work.
- Improve perception of Pakistan's IT Industry in key international markets.
- Promote Pakistan as a high-quality destination for the global IT investors.
- Enable and facilitate interaction of Pakistan based IT companies with key international stakeholders such as investors and potential clients.
- Enhance IT industry specific co-operation and collaboration between Pakistan's public/private sector entities and international counterparts.
- Support and encourage all private sector initiatives that have the potential of playing a role in bolstering Pakistan's IT industry, foreign exchange earnings and improving Pakistan's share of global IT market.

INTERNATIONAL EXHIBITIONS AND DELEGATIONS

PSEB actively facilitates new business development for Pakistani IT companies. Exhibitions and trade fairs are an excellent platform to interact with relevant stakeholders (investors, buyers, sellers, and decision makers) at both public and private sector entities. Significant subsidies are extended to IT companies by PSEB to enable them to exhibit in key International IT exhibitions. For this purpose, PSEB constructs a Pakistan Pavilion which is utilized by the selected IT companies to market their respective products and services. Having a Pakistani IT Pavilion in key exhibitions projects Pakistan as a viable, feasible destination for IT outsourcing and investment and enables Pakistani companies to generate new leads for outsourcing, partnership, and investment. Since 2008, more than 300 companies have been facilitated by PSEB through financial subsidies and other means 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. Sales cycle from lead generation to proposal to signing of contract varies from 6 to 12 months.

During 2017-18, PSEB and PSEB IT companies participated in four international events with 16 IT companies generating more than five hundred leads.

Event FY 17-18	Country	Date	IT companies	Leads generated (approx.)
MWCA	America	17-Sep	4	70
CHTF	China	17-Nov	4	57+108
MWC	Spain	18-Feb	4	101+115
CeBIT	Australia	18-May	4	129

Local Event Participation:

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 2017-18, PSEB and member companies participated in local IT exhibitions. PSEB also held Industry meetups at Islamabad, Lahore and Karachi.

During 2017-18, PSEB and PSEB IT companies participated and exhibited in different local events with IT companies.

Domestic Event FY 17-18	City	Date	IT companies	Leads generated (approx.)
ITCN	Karachi	Sep-2017	20	549
PITF	Karachi	Oct-2017	2	23
IBCE	Lahore	Oct-2017	2	2
Expo Pakistan	Karachi	Nov-2017	7	126
Momentum	Karachi	Feb-2018	PSEB Only	-

PSEB sponsored the following events during FY 2017-18:

P@sha ICT Awards	Oct-2017
Visco Spark 2017, Comsats IIT, Wah Campus	Nov-2017

Open Source Summit, Bahria University	March-2018
NaScon 2018, Fast University	April-2018
3rd Innovation Summit Baluchistan	April-2018
Taking Stocks and Moving Forward Conference	April-2018
GDPR Training, PSEB & USAID SMEA, Islamabad	May-2018
GDPR Training, PSEB & USAID SMEA, Lahore	May-2018
GDPR Training, PSEB & USAID SMEA, Karachi	May-2018
Open House 2018	June-2018

ONLINE MEDIA MARKETING, MARKETING COLLATERAL, PUBLIC RELATIONS

The use of social media is absolutely imperative to market Pakistan's IT sector foreign customers and investors and to improve perception of Pakistan in key IT outsourcing markets as a viable destination for delivering high quality products and services. PSEB social media marketing is an important initiative to allow entrepreneurs and industry experts to interact with one another and build relationships. PSEB Social Media Marketing aims to capitalize on its social media efforts through wider audience reach, audience interaction and proactive branding of Pakistan's IT Industry. Social Media Channels such as Twitter, Facebook, YouTube and LinkedIn are being utilized to enhance both awareness and image of Pakistan's IT industry. PSEB blog is playing a vital role in increasing brand recognition and awareness regarding achievements of industry players in a wide array of verticals.

PSEB creates marketing collateral to project Pakistan's IT industry as a viable, feasible destination for IT outsourcing. Print material has been updated on a regular basis to accurately reflect the dynamic nature of Pakistan's IT industry and to effectively portray its strengths in the international arena.

PSEB WEBSITE

PSEB's website at pseb.org.pk provides up-to-date information to PSEB member companies, overseas/local investors and perspective customers of Pakistan's IT industry. PSEB website celebrates the success stories of the local IT Industry and portrays the local IT Industry in a positive light. PSEB

updates its website on regular basis with news and success stories about Pakistan's IT industry.

PSEB DOCUMENTARY

PSEB developed a comprehensive video documentary titled "The Rising Tide" with the objective to market Pakistan's IT Industry. The video highlights success stories of Pakistan's IT industry, areas of expertise of Pakistani companies in software development and BPO services, and includes testimonials of both foreign and local stakeholders about Pakistan's IT industry. The video has received very positive reviews and has gone viral on social media. The video can be watched on the home page of PSEB's website. PSEB has solicited proposals for developing a new video documentary and it is expected that the new video documentary would be completed during the first half of the year.

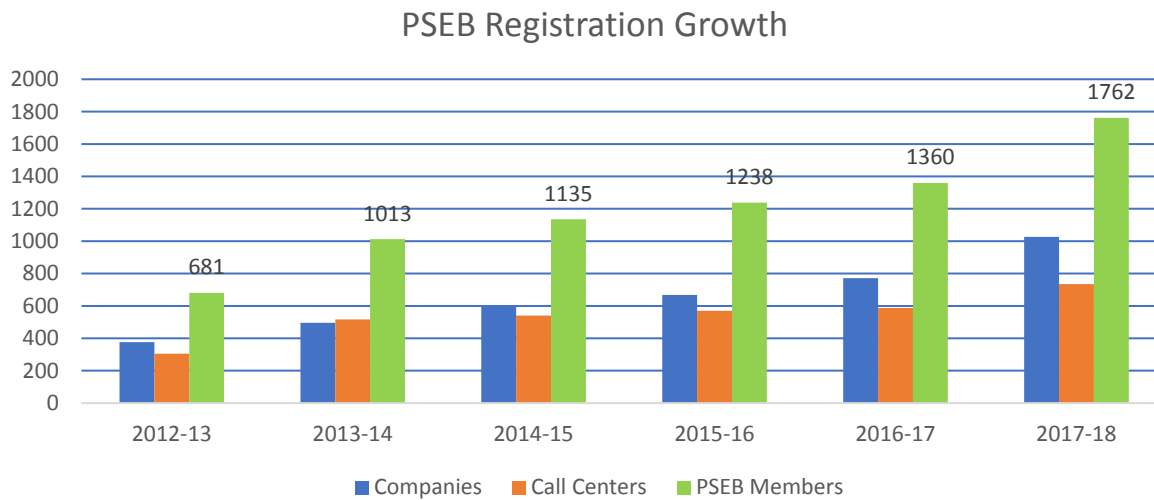
DOMESTIC FACILITATION

Domestic Business Facilitation role & activities are closely aligned with PSEB's mission of promoting and facilitating Pakistan's IT industry, accelerating exports as well as local business. Domestic Business Facilitation Department is primarily responsible for registration and facilitation of IT and ITeS Companies.

IT industry and key stakeholders from the private and public sectors are actively engaged in achieving PSEB's mission through continuous dialogue, discussions, meetings, conferences, exhibitions, seminars, workshops, collecting data regarding the industry, and reviewing government policies to enable IT industry-friendly initiatives.

Domestic Business Facilitation Department is primarily responsible for registration and facilitation of IT and ITeS companies. As of June 2018, 1,762 companies including 1027 IT/ITeS companies and 735 call centers have valid registration with PSEB. Islamabad/Rawalpindi, Lahore, and Karachi are the major hubs of IT in Pakistan followed by secondary cities including Peshawar, Abbottabad, Faisalabad, and

Multan etc.



Registration of IT companies was previously handled manually by PSEB. This process has now been fully automated and moved online to PSEB’s website. Companies have praised the online registration and renewal process because it has streamlined the process for both PSEB and member companies.

Domestic Department on behalf of PSEB organized/sponsored and supported several major domestic events during the year including Visio Spark 2018, PASHA ICT Awards 2018, ITCN Asia 2018, Industry Meetups (Lahore, Karachi & Islamabad).

PROJECTS

Following activities have been achieved by the Projects Department of Pakistan Software Export Board:

- Placement of 1,500 interns in the ICT Industry
- ISO27001 Consultancy of 18 PSEB selected companies
- ISO27001 Audit of 15 PSEB selected companies
- ISO20000 Consultancy of 14 PSEB selected companies
- ISO20000 Audit of 09 PSEB selected companies
- CMMI Level-2 Consultancy of 11 PSEB selected companies
- CMMI Level-2 Audit of 10 PSEB selected companies

- CMMI Level-3 Consultancy of 04 PSEB selected companies
- CMMI Level-3 Audit of 04 PSEB selected companies
- ISO27001 Lead Implementer Training of 50 professionals
- ISO20000 Lead Implementer Training of 50 professionals
- ISO27001 Lead Auditor Training of 10 professionals
- ISO20000 Lead Auditor Training of 10 professionals
- 05 CMMI Auditors participated in the Appraisals of the Companies as per pre-requisite for the final course i.e., SCAMPI which is scheduled from 11-15th December, 2017
- 04 CMMI Auditors SCAMPI completed successfully.
- CMMI Level-5 Consultancy of 02 PSEB selected companies
- CMMI Level-5 Audit of 1 PSEB selected company completed successfully and 2nd is due on February 2019.

TECHNICAL / DATA NODE DEPARTMENT

Bandwidth availability is crucial for the operations of an IT company and PSEB is providing cost effective, reliable bandwidth to 99 IT companies operating in 14 Software Technology Parks located in Islamabad, Rawalpindi, Lahore, Karachi, Peshawar and Abbottabad. These STPs are equipped with state-of-the-art ICT infrastructure and backup power arrangements. PSEB Data Node Department is managing data nodes in all Software Technology Parks to facilitate IT companies with bandwidth and colocation services. These operations work successfully round the clock offering technical support to IT companies on a 24x7 basis. PSEB is providing 917 Mbps bandwidth to 99 IT companies in 14 STPs at present. Some achievements of Data Node Department during 2017-18 are as follows:

- 1- Generated annual revenue of more than PKR 52.04 million.
- 2- Data Node Department is providing Co-location services to reduce the OpEX of IT companies by placing their servers inside Data Node where air conditioning, access control, high speed redundant internet connectivity and 24x7 uninterrupted power supply is ensured.

- 3- Migrated PSEB's network to IPv6 CIDR (Classless Inter-Domain Routing), the next generation Internet Protocol, and offering this IPv6 enabled network to IT companies also.
- 4- Reduced bandwidth tariff by 20% to make internet bandwidth more affordable for IT companies.
- 5- Launch of Cloud Computing Service in collaboration with PTCL at special discounted tariff for IT & ITeS companies to avail cloud services like IaaS, PaaS and SaaS of Tier –III compliant Data Center facility. This would be very helpful for SME's to focus on their core operations and let a professional Data Center take care of their hosted servers and services at less CapEx and OpEx.
- 6- Negotiating with Tier-1 Internet Service Providers (ISP) to devise a special package at discounted rates for IT & ITeS companies, to offer them "Work From Home" service for their employees.

Electronic Certification Accreditation Council

Recognizing dynamic growth in electronic communication with notable effect on commercial transactions, the need to protect electronic transactions acquired an essential status for legal recognition through statutory regulations. Moreover, on development of e-commerce the paper-based concept of identification, declaration and proof are carried through the use of digital signatures in an electronic environment. Digital signatures are electronic signatures based on Public Key Cryptography. To meet these objectives, impart recognition and to regulate the functions of accredited certificate service providers, the Electronic Transactions Ordinance in year 2002 was promulgated by the Federal Government of Pakistan. It provides a legal framework to recognize and facilitate documents, records, information, communications, and transactions in the electronic form enabling digital signatures to be accepted at par with handwritten signatures. For worldwide legal recognition of digital signatures, United Nation Commission on International Trade Law (UNCITRAL) formulated model law on e-commerce (1996) through resolution 51/162 of 16th December 1996: "Recommends that all States give favorable consideration to the Model Law when they enact or revise their laws, in view of the need for the uniformity of the law applicable to alternatives to paper-based methods of communication and storage of information"

FORMATION OF ECAC

Federal Government of Pakistan in pursuance of Section 18 of Electronic Transaction Ordinance 2002, established Electronic Certification Accreditation Council (ECAC) under Ministry of Information & Technology on 18th September 2004 and since then the Council has been reconstituted by the Federal Government from time to time. As per recent constitution following are the Chairman and Members of the Council:

- | | | |
|------|---|----------|
| i. | Brig [®] Viqar Rashid Khan | Chairman |
| ii. | Ahsan Saeed Zaidi (Mobilink) | Member |
| iii. | Farhan Mirza (RICI Pakistan) | Member |
| iv. | Dr. Saad Naeem Zafar (Riphah Int. University) | Member |
| v. | Hasnain Ashraf (AQLAAL Advocates) | Member |

Man Power:

Details of manpower is as under:

Designation	Pay Scale	Sanctioned Strength	Existing
Registrar/Secretary	G-I	2	0
Deputy Registrar /Directors	G-II	6	2
Researchers/Dy. Directors/IT Security Auditors	G-III	17	2
System/Data /Network Administrator	G-IV	3	2
Finance & Admin Officer	G-V	1	0
Computer/Office Assistant/Receptionist	G-VI	9	0
Drivers/Dispatch Rider	G-VII	3	0
Office Boys/Chowkidars	G-VIII	11	0
Total Posts		52	6

ECAC MANDATE/ FUNCTIONS

ECAC being a regulatory body have enforcement powers to regulate electronic transactions in Public and Private sectors. Besides addressing the increasing concern about the privacy and security of individuals as well as organizations, ECAC grant and renew certificates issued to certification service providers including their cryptography services and security procedures. Moreover, it also endeavors for keeping the nation abreast with the ever-changing trends of e-commerce while protecting the interests of related stakeholders. ECAC monitors compliance, establish and manage the repository for certificates and digital documents.

The primary function of the council is to provide accreditation to certification service providers and cryptography services. The mandate of the council also includes monitoring and ensuring compliance of accredited certification service providers in accordance with the ETO 2002.

Section 21 of ETO 2002 specify following functions to be performed by the Certification Council:

- To grant and renew accreditation certificates to certification service providers their cryptography services and security procedures.
- Monitor and ensure compliance by accredited certification service providers with the terms of their accreditation and revoke or suspend accreditation in the manner and on the grounds as may be specified in regulations.
- Monitor compliance of accredited certification service providers with the provisions of this Ordinance.
- Establish and manage the repository.
- Carry out research and studies in relation to cryptography services and to obtain public opinion in connection therewith.
- Recognize or accredit foreign certification service providers.
- Encourage uniformity of standards and practices.

ACHIEVEMENTS

Regulations formulated:

- ECAC business regulations.
- ECAC service regulations.
- ECAC service provider audit regulations.
- ECAC information security auditor's registration regulations.
- The certification service provider's accreditation regulations

Development of WEBSITE and LOGO:

The Council has developed its fully Functional Website and Logo.

<https://www.ecac.org.pk>

Accreditation of M/s NIFT:

The Council through Market Research found that M/S Nift Pvt Ltd is operating in Pakistan as Certification Service Provider as per regulations. The Council has awarded M/s NIFT Provisional/Conditional Accreditation for three Months on 6th April, **2018**.

Revival of Assignment Account:

- Council Assignment Account remained dormant due to non-availability of Funds and non-usage from 2009 to 2018.
- After Hectic Efforts and Continuous follow up with AGPR, CGA, MoIT, Finance Division, NBP, the Assignment Account got Operationalized.

Registration with Press Information Department (PID):

- The Council initiated PID Registration and completed necessary codal Formalities and approval of Registration accorded in August 2017.
- ECAC, can now Publish Advertisements as a Federal Government department be resulting in maximum saving of publicity charges being a government entity.

Registration of Security Auditors:

- In terms of Information Security Auditor's Registration Regulations 2008, Security Auditors are required to be registered for audit of CSPs.
- Through repeated advertisements, the Council has granted registration to M/s Risk Associates (Pvt.) Ltd as its First Security Auditor on 30th March, 2018.
- The Council is in process of Registration of more security auditors and has published EOI in print media.

Registration of ECAC with FBR as a Tax-Free Entity:

- In order to fulfill its tax related obligations, the Council filed application with FBR for issuance of FTN.
- All codal formalities were fulfilled and ALHAMDULILLAH the Council has been registered with FBR as a tax free on 15th March, 2018

Provision of Office Space for ECAC:

- At the time of constitution of the present Council in 2015, ECAC had no office space and infrastructure essentially required its functioning.
- Therefore, NTC provided the required space to ECAC free of cost for initial two years and later on in 2017, a rental lease agreement was signed with the NTC for the establishment of ECAC office at NTC Regional HQ Office Building.

FUTURE TARGET IMPLEMENTATION/ ENFORCEMENT

Creation and Management of Root Certification Authority:

ETO 2002, provides legal sanctity to digital signatures based upon the principle of equivalence to handwritten signatures. For effective implementation/ enforcement it is essentially required that ECAC be equipped with complete infrastructure by creation and management of PKI (Root Certification Authority) as establishment of repository is one of the main functions of the Council with cascaded amendments to several other Acts including State Bank of Pakistan Act; Pakistan Penal Code; Procedures/ Law related to electronic transactions formulated by respective appropriate authorities.

The present Council is in the process of completing the following tasks:

- Renewal of M/s NIFT Accreditation.
- Targeting further Certification Service Providers for Accreditation.
- Registration of Security Auditors.
- Installation of PKI (Public Key Infrastructure) and Establishment of Repository through Pre-deposit work at NTC Datacenter
- Implementation of the Functions of ETO 2002 through regularity bodies like PTA, FBR, State bank, SECP etc.
- To review ETO 2002 and other Regulations and suggest improvement for effective implementation of the functions.

Telecom Foundation

DETAIL OF PROJECTS

Sr. No.	Name of Projects	Value of Contract (M)	Date of Contract Started	Date of work completion	%ages of Completion
1	Laying U/G Cable Network at PAF Base Shahbaz Jacobabad (EST No. 724-D(a)	0.440	29/10/2018	30/11/2018	100%
2	Laying U/G Cable at Quaid -e- Awam University of Engineering Science & Technology (QUEST) Larkana. EST NO. 718-D(a)	3.492	07/09/2017	07/12/2017	100%
	Additional Work	0.598	01/01/2018	31/01/2018	100%
3	Merging of Cabinet No.1 in New Msag No.57 at Greenwich University Misri Shah Exch. Area Karachi under NTP-II Project RGM-I, KARACHI	0.086	22/12/2017	21/05/2018	100%
4	Merging of Cabinet No.40 in New Msag No.51 at Badar Commercial Street Misri Shah Exch. Area Karachi under NTP-II Project KTR-I	0.052	23/12/2017	21/05/2018	100%
	Merging of Cbinet No. 38, 40, 41 IN MSAG Pacca Qila City Exch. Area Hyderabad under NTP-II Project Hyderabad Region	0.103	01/11/2017	10/12/2018	100%
5	OSP/OFC Network for Orange Train Package-I	17.76	20/05/2016	Within 5 weeks of each section on providing of NOC/ROW by NTC	70%

6	OSP/OFC Network for Orange Train Package-II	10.70	20/05/2016	Within 5 weeks of each section on providing of NOC/ROW by NTC	90%
7	Laying of OFC/OSP Network at LDA/NESPAK Lahore	5.31	23/02/2018	15/06/2018	85%
8	Laying of OFC/OSP Network at Grumangat Road Lahore	4.24	23/02/2018	11/06/2018	35%
9	Laying of UG Cable Network at Risalpur (Section-I)	2.183	05/08/2017	17-10-2017	100%
10	Laying of UG Cable Network at Risalpur (Section-II)	2.362	05/08/2017	17-10-2017	100%
11	Laying of UG Cable Network at Rawalpindi (Section-I)	2.238	18/08/2017	10-10-2017	100%
12	Laying of UG Cable Network at Rawalpindi (Section-II)	2.191	18/08/2017	10-10-2017	100%
	Total	51.755			

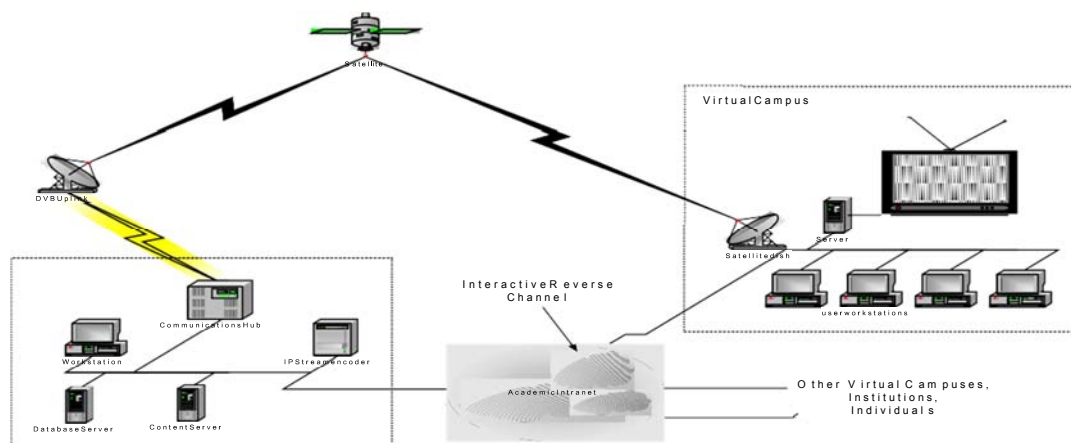
Virtual University of Pakistan

BRIEF INTRODUCTION

The University was established vide Ordinance No. LII of 2002. The honorable President, Islamic Republic of Pakistan is the Chancellor of the Virtual University of Pakistan. The Board of Governors is the apex body of the University that responsible for the general supervision and control of administrative, academic and financial matters and the power to lay down the rules and policies of the University.

The Virtual University of Pakistan is the pioneer in Information and Communications Technology (ICT) based education in Pakistan and is the thought leader in the provision of quality higher education through enabling technologies. It thus aims at alleviating the lack of capacity in the existing universities while simultaneously tackling the acute shortage of qualified professors in the country. By identifying the top Professors of the country, regardless of their institutional affiliations, and requesting them to develop and deliver hand- crafted courses, the Virtual University aims at providing the very best courses to not only its own students but also to students of all other universities in the country and abroad.

Operational Diagram of the Virtual University of Pakistan is given below.



The Virtual University of Pakistan offers a wide spectrum of academic programs. The outreach of the University is stable with a footprint in over 121 plus cities and towns of the country and the gross enrolled student strength hovers around 200,000. The University maintains high academic standards

and students have to work regularly and consistently to get a degree from the Virtual University.

ACADEMIC PROGRAMS

The University is offering programs in different disciplines e.g., Accounting, Business Administration, Biological Sciences, Commerce, Computer Science, Information Technology, Mathematics and etc. These programs are designed for students to enter highly exciting & challenging fields and rapidly evolving 21st century economy. These programs provide graduates with a strong technological base that enable them to capitalize on the increasing career opportunities in the relevant fields. The Virtual University has initiated following study programs in addition to existing during the year 2017-18:

- i. M.Sc. Statistics
- ii. M.Sc. Economics
- iii. MA English Language Teaching (ELT)
- iv. BS Mathematics
- v. BS Economics

STUDENT'S DETAIL

Detail of overall students admitted, graduated, and actively enrolled during the period Year 2017-18 is given in table below.

Sr. #	Year	No. of Students Admitted	Pass Out	Active Enrolled Students	Overall Students
1	2017-18 [Fall 2017 & Spring 2018]	39893	6875	52936	127799

COURSES DEVELOPED

The University owns and operates its own state of the art Television Station. By identifying the top Professors of the country, regardless of their institutional affiliations, and requesting them to develop and deliver hand-crafted courses. Detail about courses developed during the period 2017-18 is as under:

Sr. No.	Courses Developed During the Period 2017-18
1.	28

EDUCATION FOR PAKISTANIS RESIDING ABROAD

The University is transmitting its course contents on satellite television which are being seen in other parts of the world especially middle east and surrounding region. Given the quality and affordability and ease of access, VU Programs have become very attractive for expatriate Pakistanis. In foreign countries where VUTV transmission is not available, students can attend lectures through DVDs, VULMS, open courseware (<http://ocw.vu.edu.pk>) or on YouTube (<http://www.youtube.com/vu>). Admitted students may avail the facilities to study at home. However, their examinations are monitored through webcam and state of the art computer-based examination system. Presently 1785 students are enrolled as overseas Pakistani students residing in the countries listed below are benefiting from VU:

Continent	Countries
Asia	Afghanistan, Bangladesh, China, Hong Kong, Singapore, South Korea, Taiwan, Sri Lanka, Japan, Indonesia, Kyrgyzstan, Uzbekistan, Palestine, Philippines
Middle East	Bahrain, Jordan, Kuwait, Oman, Qatar, Saudi Arabia, UAE, Yemen, Iraq, Turkey

Europe	Austria, Belgium, Denmark, Spain, Germany, Sweden, France Finland, Italy, Ireland, Norway, Switzerland, Netherlands, Cyprus, New Zealand, Portugal, United Kingdom
North America	Canada, USA,
Africa	Jamaica, Sudan, Botswana, Egypt, Libya, Morocco, Rwanda, South Africa, Zimbabwe
Australia	Australia

VIRTUAL CAMPUSES

The University has established its own and private Virtual Campuses with private sector partnership (PSPs) across the country that acts as resource center / study centers. Presently, there are 189 Virtual Campuses (including PVCs + VU owned Campuses) in around 121 cities spread throughout Pakistan. These campuses provide the required infrastructure to VU students for undertaking courses and to conduct proctored examinations. Wherein, VU has established its own 29 campuses at Abbotabad, Badin, Bahawalnagar, Bahawalpur, D.G. Khan, Faisalabad, Ghotki, Gujar Khan, Gujranwala, Hyderabad, Islamabad, Jalalpur Pirwala, Jhelum, Karachi, Lahore, Multan, Muzaffargarh, Nankana Sahib, Patokki, Peshawar, Quetta, Rawalpindi, Sahiwal and Sukkur. These campuses act as a study center for VU students. Summary of Virtual Campuses for the year 2017-18 is as under:

Sr. #	No of Campuses Established Year 2017-18		Total No of Active Campuses Year 2011-18		
	VU Own Campuses	PVCs	VU Own Campuses	PVC	Total
1	1	33	28	161	189

CONVOCATION

During the period Virtual University of Pakistan hold its 9th Convocations for 6173 graduates. The University has arranged six convocation ceremonies in different cities across the Pakistan.

LINKAGES AND COLLABORATION

During the 2017-18 period Virtual University of Pakistan has established linkages and MoUs with national and international universities/institutions for the improvement of education standards in the country. The University is spearheading and coordinating an IDRC funded project on Distance Learning Technologies in Asia wherein research work in many countries including Japan, Mongolia, Malaysia, Indonesia, Vietnam, Cambodia etc. is being carried out under the supervision of VU. Virtual University of Pakistan also provides infrastructure facilities for Pre-Services Training Program for TVET teachers in collaboration with University of the Punjab, Lahore and Kaiserslautern University, Germany. Following is the detail of MoUs established during the year:

- Virtual University of Pakistan signed a Memorandum of Understanding with Bank Alfalah Limited on May 23, 2017. The MoU envisages collaboration between the two institutions on developing specialized courses for banking professionals and VU students as well as sharing of professional expertise towards designing Learning Management System. Their commitment of working together on various fronts includes Bank Alfalah to impart experiential learning opportunities to VU students
- Virtual University Signs MoU with MCB Bank Limited: The MoU envisages collaboration between the two institutions to share professional expertise to help facilitate a shared growth and progress of the industry and academia. Through this MoU, the MCB Bank will provide specialized financial products and services to Virtual University of Pakistan featuring benefits for fee collection of its large number of students. VUP shall also extend technical and professional expertise for MCB employees. MCB will also be able to capitalize on VUP's satellite airtime for extending learning activities to its employees throughout the geographical regions where MCB operates.
- Virtual University Signs MoU with National School of Public Policy: The MoU was signed by Dr.

Naveed A. Malik (Rector, Virtual University of Pakistan) and Mr. Azmat Ali Ranjha (Rector, National School of Public Policy - NSPP) on March 30, 2018. The basic aim to sign this Memorandum of Understanding (MoU) was to create mutual co-operation between Virtual University of Pakistan (VU) and National School of Public Policy (NSPP) in the areas of education, research, training and capacity building.

- Virtual University of Pakistan Signs MoU with Technology Upgradation and Skill Development Company (TUSDEC): Both institutions agreed to share respective strengths, experiences and methodologies for technology upgradation, skill development, advisory and business development services aimed at promoting quality, productivity, value addition and competitiveness in industrial sectors of Pakistan. As per agreement, both organizations will work together in conceiving, designing and executing joint projects focused at technology upgradation and skill development of various industrial sectors, especially with reference to China Pakistan Economic Corridor (CPEC).

CONFERENCES/ SYMPOSIUM/ WORKSHOPS

- 1st International Conference on Social Sciences and Humanities: Virtual University of Pakistan (VU) in collaboration with Lahore College for Women University is pleased to announce its 1st International Conference on Social Sciences and Humanities. The conference will be held on December 14-16, 2017 at Lahore. The main theme of the conference is “Social Sciences and Humanities in the New Millennium: Challenges and Prospects”. The abstract submission is open till July 31, 2017. As the global transformation in political, economic and cultural scenario is shaping the individual and collective human behavior, the conference strives to bring these issues and topics into light because these phenomena are advantageous as well as challenging. Pakistani society also faces the challenges of such transformations; therefore, it is pertinent to critically reflect upon the contemporary socio-global transitions and their implications on individual, social and global levels. In this regard, both universities have taken a step forward to announce its 1st International conference that will provide a platform to discuss and disseminate meaningful messages, values and practices in the subject of Social Sciences and

Humanities.

- Virtual University of Pakistan Organizes a Seminar on 'Freedom from Corruption Improves Quality of Life': A seminar on 'Freedom from Corruption Improves Quality of Life' was organized by Directorate of Quality Enhancement (DQE) and Character-Building Society, Virtual University of Pakistan in collaboration with National Accountability Bureau (NAB) on May 10, 2017. Dr. Khalid Zaheer, an eminent scholar and Dr. Cusrow J. Dubash (Vice Rector, Forman Christian College) were the keynote speakers. Dr. Khalid Zaheer and Dr. Cusrow J. Dubash delivered comprehensive lectures on 'How Corruption Destroys Our Character' and 'What Makes a Good Citizen' respectively. Furthermore, Chaudhry Khaliq-uz-Zaman - Deputy Prosecutor General Accountability (DPGA), NAB reflected upon the topic 'How Societies Fight with Corruption: A Historical Perspective.'
- Virtual University of Pakistan Organizes a Seminar on Water Security Challenges Environmental Protection Society of Virtual University of Pakistan (VUP) and Student Week Core Committee organized a seminar titled as "Water Security Challenges and Options" at M.A. Jinnah Campus, Lahore on Wednesday, August 8, 2018. This seminar was organized to highlight the challenges of water scarcity with special focus on Pakistan to cope with the situation. Delegates and the staff participated in an awareness walk to raise voice for water security. The seminar provided a platform for exchange of experiences and dialogue to address water issues.
- 7th International Conference on Biotechnology and Bioengineering: The 7th International Conference on Biotechnology and Bioengineering (ICBB2017)) & 2017 International Conference on Agricultural and Food Science (ICAFS2017) organized by Asia-Pacific Association of Science, Engineering and Technology (APASET) and Virtual University of Pakistan, took place in Lahore, Pakistan from October 25-27, 2017. New approaches and applications in Agricultural and Food Biotechnology, Animal Science & Biotechnology, Plant Science & Biotechnology, Food Science & Nutrition, Agricultural Resources, Environment & Agricultural Engineering, Agriculture Sustainable, Economic and Management were in-focus at the conference. Further discussions on the latest research trends, innovation and technologies were conducted to establish a research culture in Pakistan.

- Virtual University of Pakistan Organizes the 4th e--Learning and Distance Education Conference: The 4th e-Learning and Distance Education Conference (ELDEC) concluded at the University of Education, Lahore on Tuesday, November 21, 2017. The international conference was organized by VUP in collaboration with the University of Education, Lahore from November 20-21, 2017. Speakers and delegates from academia and corporate world converged during the two-day event. The theme of the conference was "e-Learning and Distance Education: Envisioning the Future: Rethinking, Reshaping, Redesigning Education". A vast number of educationist and delegates from Malaysia and Indonesia participated in the event. Five keynote speeches and thirty technical papers divided over 5 sessions were presented in two days. Prof. Dr. Arshad Ali (Executive Director, Higher Education Commission) was the honorable guest at the inaugural ceremony, and Prof. Dr. Nizamuddin (Chairperson, Punjab Higher Education Commission) graced the event as the Chief Guest of the closing ceremony.
- Virtual University of Pakistan in Collaboration with Lahore College for Women University Organizes the 1st International Conference on Social Sciences and Humanities (ICSSH 2017): Virtual University of Pakistan in collaboration with Lahore College for Women University organized the 1st International Conference on Social Sciences and Humanities from December 14-16, 2017. This three-day Conference was entitled: "Social Sciences and Humanities in the New Millennium: Challenges and Prospects." Prof. Dr. Najma Najam (Advisor Academics, VUP) was the Chair for the Conference, whereas Ms. Ayesha Perveen (HOD, Department of Social Sciences and Humanities) was the Conference Secretary from VUP and Dr. Sarah Shahed (Director, Department of Gender and Development Studies) from LCWU. A large number of foreign and local delegates from USA, Canada, England and Pakistan participated in the mega event, notably Mr. Javed Jabbar, (former federal minister and Senator, Pakistan), Dr. Adil Najam, (ex-Vice Chancellor, LUMS), Dr. Anita Weiss (Researcher, Sociological change in South Asia), Dr. Livia Holden, Dr. Sabrian Ciolfi, Dr. Chok Heiw, Dr. Ishtiaq Ahmad (Vice Chancellor, University of Sargodha), and Mr. Sajjad Imran (Area Director Punjab, British Council). The Conference provided a platform for deliberations and discussions with a specific focus on policy level interventions to be implemented in academia in particular and the society in general.

- Camera Club Conducts the Final Event of Photography Competition 2017: Camera Club of VUP conducted the 4th Photography Competition 2017 at Lawrence Road Campus, Lahore on October 30, 2017. The basic aim of the event was to offer students a platform to showcase their creative skills. Mr. Adeel Chishti (Owner, The Memories Studio) and Mr. Usman Ahmad (senior graphic designer, VUP) were a part of the judges' team. The event was attended by Ms. Saba Munir (Coordinator, Societies/Clubs), Ms. Mehwish Farooqi, Mr. Asif Ali (Member, Camera Club) and Mr. Masroor Ahmed (Convener, Camera Club). Mr. Muhammad Zaheer (Assistant Professor, Management Sciences & Chief Organizer Students' Week'17) attended the ceremony as Chief Guest of the final event. Worthy judges and session chairs acknowledged the students' efforts and gave valuable tips to improve their photography skills. Judges also appreciated VUP for providing a formal channel to the students, where they can exhibit their creativity.
- Virtual University of Pakistan Organizes Biosafety Workshop: Department of Molecular Biology organized a one-day workshop at G-10 Markaz, Islamabad. The workshop was aimed at providing a forum to raise awareness about biosafety among researchers and academicians, and to share the recent developments and emerging trends and standards in the area of biosafety and biosecurity.
- VUP Organizes Workshop on Test Item Development and Scoring (HRD Cycle III): A two-day professional development workshop entitled "Test Item Development and Scoring (HRD Cycle III)" for VUP Faculty members was arranged by VUP's Directorate of Quality Enhancement (DQE) on January 30-31, 2018. The workshop was inaugurated by Dr. Muhammad Mohsin Javed (Director, DQE) who highlighted those innovative reforms in faculty education are the essential element for achieving better and enduring learning outcomes in higher education. He emphasized that professional development of faculty is a continuous process and should begin with the thoughtful selection of aspiring teachers. Dr. Munawar Sultana Mirza (Advisor - Education Department, VUP) was the resource person of the workshop and delivered a comprehensive and thought-provoking lecture on "Course Objectives and Bloom's Taxonomy and valuating MCQs using Bloom's Taxonomy". The workshop was attended by faculty members of various departments of the university.

- Virtual University of Pakistan Organizes Seminar on Entrepreneurship: Student Start UP Business Center (SSBC) of Virtual University of Pakistan organized a seminar entitled “Be your own Boss” at M.A. Jinnah Campus, Lahore. The main purpose of this seminar was to create awareness among the youth about the importance of entrepreneurship and self-employment. Dr. Naveed A. Malik (Rector, VUP) was the chief guest. Featured keynote speakers for the seminar included Mr. Almas Haider (CEO, SPEL Group) Ms. Ashba Kamran (CEO, Cosmos Health Services, Lahore) and Dr. Khalid Iqbal (President, PEP Foundation, USA). All speakers were invited to share their experiences with the students. The guests openly expressed their practices and approaches with the participating students. The seminar provided an opportunity to explain the role of SSBC and Virtual University in fostering entrepreneurial spirit among its students. A large number of students and faculty attended the seminar.
- Virtual University of Pakistan Organizes Workshop on “All about Roses”: Directorate of Quality Enhancement VUP and “Gardening for All” have organized an international training workshop on “All about Roses” on February 24, 2018 at the Head Office, Virtual University of Pakistan. This workshop was specially arranged for all those who have interest in gardening and are keen to grow roses. Mrs. Marriam A. Ghazali, an internationally known rose grower from Kuala Lumpur, Malaysia, and Mr. Izhar Ul Haq Muhammad from Karachi, were the resource persons of the workshop. They provided guidance and in-depth training to rose growers. The Chief Guest of the workshop was Dr. Naveed A Malik (Rector, Virtual University of Pakistan). He highlighted the importance and purpose of organizing this workshop.
- Directorate of Quality Enhancement Organizes a Training Workshop on “Rooftop Gardening”: Directorate of Quality Enhancement, Virtual University of Pakistan has organized a training workshop on “Rooftop Gardening” in collaboration with “Gardening for All” on March 18, 2018 at the Head Office, Virtual University of Pakistan. Dr. Muhammad Mohsin Javed (Director, Quality Enhancement) briefed about the purpose of the workshop. This workshop was particularly arranged for the interested participants in gardening and is keen to utilize free space at commercial and residential areas at the rooftop. Mr. Talha Afzaal (CEO, TDS, Talha Design Solutions), and Mr. Jawad Qadir (Horticulturist) were the resource persons of the

workshop.

- Web-Seminar on "VU Ambassador Program - A Community Outreach Initiative": Gujar Khan Campus (VUP) has developed a Webinar that has been shared with students in order to create awareness among students about VU- Ambassador Program. This is a vital initiative to engage students to reach community and create awareness for VUP E-learning programs. Ambassador Program aims at showcasing best talent of VUP to community as it could develop powerful rapport between University and Community. For fresh graduates, being a part of this Community-lead initiative would be a strong selling point when it comes to employability in the competitive job market. For university, it would be a valuable opportunity to aware people about the fact that a recognized and quality education corridor is available at their door step and would be a Win- Win “scenario for both Virtual University and its students. The Web Seminar has received good response among students and many enrolment requests have received.
- Department of Molecular Biology Organizes International Conference: The Department of Molecular Biology, Faculty of Science and Technology, Virtual University in collaboration with Higher Education Commission, Pakistan held an International Conference on “Hereditary Diseases; Molecular Diagnosis & Prevention Strategies”. The conference explored the vistas and prospects of awareness among the students, scientists and health care professionals regarding the treatment, preventions and molecular diagnoses of hereditary diseases. The population size of Pakistan is around 200 million and it is considered a goldmine of genetic disorders due to its unique geography and history. A number of genetic anomalies include Metal Retardation, Albinism, Thalassemia, Down syndrome, Fragile X syndrome, Congenital Cataract, Deafness and Myopia. Consanguinity is used interchangeably to describe union between couples who share at least one common ancestor. Inbreeding in population genetic term refers to a departure from nonrandom "mating" in which individuals "mate" with those more similar (genetically) to them rather than "mate at random". The closer the biological relationship between parents, the higher is the probability that their offspring will inherit identical copies of one or more detrimental recessive genes. The conference aimed to provide worldwide specialists and scholars, those associated with the field, a chance to exchange the latest research results, learn

the latest technology and build international friendships in particular for domestic academics.

- Department of Management Sciences Organizes One Day Training Workshop on Qualitative Research Designs and Data Analysis Using NVIVO Software: A training workshop was planned and organized by TREND (Training, Research, Education, & Development), an initiative of Department of Management Sciences, to inculcate contemporary teaching and research skills among VU faculty members. It provided an opportunity to participants to learn and build capacity by understanding various designs of qualitative research, and to go through hands-on practice on NVIVO11 for qualitative data analysis. NVIVO is a qualitative data analysis (QDA) computer software package produced by QSR International. It helps the qualitative researchers to organize and analyze non-numerical or unstructured data. The software allows users to classify, sort and arrange information; examine relationships in the data; and combine analysis with linking, shaping, searching and modeling. The need for such training is inevitable as VUP is now focusing more on projects and research article publication to facilitate the faculty for research skill development. 18 VU faculty members from department of Management Sciences, Education, Psychology, Sociology and Mass Communication attended the workshop.
- Virtual University of Pakistan Organizes an Awareness Seminar on “Entrepreneurship: A Journey toward Success”: Student Start-UP Business Center (SSBC) of VU organized an awareness seminar entitled: “Entrepreneurship: A journey toward Success” on April 25, 2018 at the M.A. Jinnah Campus, Lahore. The purpose of the seminar was to create awareness among the youth about the importance of entrepreneurship and self-employment. This seminar was a source to provide an opportunity to explain the role of SSBC and VU in fostering entrepreneurial spirit among its students. The guest speakers at the seminar were: Dr. Shahid A. Zia, (Director, AISEM), Mr. Arsalan Hassan (CEO Tune, PK), and Muhammad Rizwan Saleem Sandhu (Assistant Professor, VU). Dr. Naveed A. Malik (Rector, VU) gave concluding remarks. The seminar was attended by faculty members and students, and different campuses were connected through video conferencing. At the end of the seminar, souvenirs were presented, and refreshment was served.
- One-Day National Workshop on Basic Research Tools of Molecular Biology, Biotechnology &

Bioinformatics: A workshop on basic tools of Molecular Biology, Biotechnology and Bioinformatics was conducted at the Virtual University of Pakistan, Multan Campus on May 3, 2018. The workshop was conducted by the Biology Department of VU Multan Campus. The program started with the recitation of the Holy Quran. Dr. Yasmeen from VU welcomed the respectable speakers, guests and students whereas Dr. Muhammad Safdar elaborated the aims and objectives of the workshop.

MAJOR ACCOMPLISHMENTS

Following are few major accomplishments of the University during the year 2017-18:

- **VUP Launches Smartphone App for Students:** Virtual University of Pakistan has announced “VULMS APP”, a mobile application, that will be available and fully functional from the session Fall 2017. The application was designed in house by the IT department of the University. This application will be available on Google Play Store. By downloading “VULMS APP”, students will be replicating the experience, currently available on desktops, directly to their mobile phones. VULMS App can push customized notifications to keep students abreast of the latest developments of the University. Students will be able to use their smartphones to seamlessly access Learning Management System (LMS), lecture listings, co-curricular activities, event calendars, payment portals and other critical resources. VULMS Mobile App is developed to facilitate the students to receive push notifications, fee alerts, course announcements, videos and discussions. The App will enable the students to remain updated and synchronized with their day-to-day learning and academic activities with ease and mobility.
- **Virtual University of Pakistan Starts New Degree Programs:** Virtual University of Pakistan has introduced four new degree programs (BS Economics, BS Mathematics, M.Sc. Statistics and M.Sc. Economics).
- **Virtual University of Pakistan Develops VULMS Mobile App:** Virtual University of Pakistan has accomplished a milestone of rolling out the production release of VULMS Mobile Android App. This application has been designed and developed in-house by the Department of Information Technology, VUP, and is available on Google Play Store. VULMS Mobile App is developed to

facilitate students to receive push notifications, fee alerts, course announcements, videos and discussions. The app will enable students to remain informed and updated with their day-to-day learning and academic activities with ease and mobility.

- VSpace@VU: The new website “<http://vspace.vu.edu.pk/>” is a research platform which holds a growing collection of Virtual University’s research that includes peer- reviewed articles, technical reports and working papers. This electronic repository contains selected thesis and dissertations of Masters and PhD degree holders from all VU departments. The end users can search, navigate and download these publications. The website further allows potential research partners to search the entire range of expertise provided by VU researchers. It intends to help students and faculty members to explore the wide array of research expertise at VU.
- VU Wall: The website “<http://wall.vu.edu.pk/>” is a platform which will provide an opportunity to VU students to showcase their aptitude and talent. VU students can now share their art or skill, or success stories in form of videos that will be visible to students as well as to the public at large. This interactive portal intends to provide an outlet for the creative expression of VU students.
- VUP Partners with IGNITE to Train 1 Million People - PM Inaugurates "DigiSkills": The Prime Minister Shahid Khaqan Abbassi inaugurated DigiSkills Training Program, aimed at training one million youth through online modules, in Islamabad on PLEASE MENTION DATE. Addressing the ceremony, the Prime Minister said that the present government has delivered in many fields by building motorways, ports, airports and establishing power plants, but the advancement in the information technology sector is the most important contribution in the last five years. The Prime Minister said that the Digiskills program will equip the youth to get online jobs and earn money in a non-traditional way. He asserted his faith in the youth of the country, and expressed the confidence that the girls will, in future, excel in e- commerce. He further said that the government is committed to ensure availability of broadband in every inch of the country. He also appreciated the Ministry of Information Technology & Telecommunication (MoITT) and Virtual University of Pakistan (VUP) for their role in the development of youth through ICT and Digital services.
- VUP - QEC Stands on top in HEC Rating with 91.43% Score: Directorate of Quality Enhancement (DQE) of VUP achieved a score of 91.43% by maintaining its rating in the W category for the period

of one year from July 2016-June 2017 among Phase IV QECs of Pakistani Universities. Quality Assurance Agency, Higher Education Commission of Pakistan, sets targets for QECs of Universities for a period of one year. QECs are evaluated on the basis of accomplishments of targets set by the HEC. On the basis of the scores, QECs are rated in W, X, Y, and Z category, with W being the highest. DQE has maintained its category by improving its score.

- First Issue of Volume II of the Journal of Distance Education and Research (JDER) Published: The 1st issue of Volume II of the Journal of Distance Education and Research (JDER) from the platform of Virtual University of Pakistan has been published and it can be accessed at: <http://journal.vu.edu.pk>. JDER is a peer reviewed, open access and multi-disciplinary journal. It aims at publishing outstanding theoretical and applied research in all academic disciplines with particular emphasis on distance education and e-learning. JDER provides an instant open access to its content holding the belief that making free availability of research to the public supports a greater global exchange of knowledge.
- Virtual University of Pakistan Develops Technical Training Course on Power Planning and Analysis: VUP developed a “Technical Training Course on Power Planning and Analysis through distance learning” for SAARC Energy Centre. SAARC Energy Centre (SEC) was created in 2005 through Dhaka Declaration, as a special purpose vehicle to recognize the vision of SAARC leaders to establish an Energy Ring in South Asia. This distance learning program aims at benefitting all members of South Asian Association for Regional Cooperation (SAARC) including Sri Lanka, Nepal, Maldives, India, Bhutan, Bangladesh, Afghanistan and Pakistan. Through this program, more energy analysts in South Asian countries will develop their skills in integrated energy planning and receive technical guidance for conducting energy studies. Moreover, it will help participants to understand and analyze emerging issues and identify the potential role for various energy technologies.
- VUP - QEC Stands on top in HEC Rating with 91.43% Score: Directorate of Quality Enhancement (DQE) of VUP achieved a score of 91.43% by maintaining its rating in the W category for the period of one year from July 2016-June 2017 among Phase IV QECs of Pakistani Universities. Quality Assurance Agency, Higher Education Commission of Pakistan, sets targets for QECs of Universities for a period of one year. QECs are evaluated on the basis of accomplishments of targets set by the

HEC. On the basis of the scores, QECs are rated in W, X, Y, and Z category, with W being the highest. DQE has maintained its category by improving its score.