Government of Pakistan
Ministry of Information Technology & Telecommunication

E-GOVERNANCE

ICT INFRASTRUCTURE

HUMAN RESOURCE DEVELOPMENT

INNOVATION & ENTREPRENEURSHIP

IT & ITS DEVELOPMENT & EXPORT

FINTECH, E-COMMERCE & DIGITAL PLATFORMS

Privacy & Security

YEAR BOOK
2021 - 2022

Government of Pakistan

Ministry of Information Technology
& Telecommunication

Year Book
2021-2022

Contents

MINISTRY OF INFORMATION TECHNOLOGY & TELECOMMUNICATION

Telecommunication Industry

1. Pakistan is progressing extensively towards the Fourth Industrial Revolution (4IR) & telecommunications sector contributes significantly to Pakistan's economy. The Government of Pakistan has granted highest priority for developing Pakistan's Telecommunications Sector to facilitate sustainable growth in all segments of the economy.

2. Pakistan successfully deregulated its Telecommunications Sector in 2003-04, leading to increased open competition in the fixed line and mobile cellular segments of the Telecommunications sector and resulting in the expansion of telecommunication ICT infrastructure, low tariffs, high revenues, increased tax contributions and employment opportunities. The Telecommunications industry experienced positive growth during the fiscal year 2020-21. The total number of mobile subscriptions (number of active SIMs) reached 184.7 million as at June 2021, as compared to 168.5 million as at June 2020 i.e., 9.6% incremental growth. Total teledensity reached 85.3 per cent as at June 2021 registering growth of 8.09% during fiscal year 2021. The principal reason for this increase in teledensity is the business conducive ICT ecosystem & investment friendly policies with the theme of affordable "Broadband & Smartphone for all" leading towards Digital Pakistan vision. Based on figures updated in June 2021, cellular operators' respective market shares were PMCL (Jazz) 37.9 per cent, Telenor 26.7 per cent, PTML (Ufone) 12.5 per cent, CMPAK (Zong) 22.0 per cent and SCO 0.8 per cent.

3. Other segments of the Telecommunications Industry includes fiberization, balanced space satellite regime , fixed local loop, wireless local loop and long distance international , Internet of things, space of things , autonomous networks , open source networks , data centers, smart device manufacturing are lucrative regimes currently opened for TMT (Technology Media Telecommunications) investments and industrial growth making it an attractive proposition for business due to ample skilled human capital & population market & customer head. The combined

subscriber base of the fixed local loop and wireless local loop segments increased to 2.54 million as of June 2021 as compared to 2.49 million as of June 2020.

4. Mobile and fixed broadband subscriber base experienced strong surge of 22% growth from July 2020 to June 2021. The number of broadband subscribers reached 102.6 million as compared to 83.7 million as of June 2020.

5. The telecommunications industry is among the lucrative & preferred foreign direct investment segment for domestic and foreign investment entities. From FY2005 to FY2021, the telecommunications industry attracted over U.S.$11.7 billion in foreign direct investment inflows, including U.S. $202 million during the FY2021. In addition, telecommunications operators in Pakistan invested U.S. $ 900 million during the FY2021.

6. Furthermore, the Ministry of IT & Telecom, through Universal Service Fund, has spent 31 billion PKR for the ICT infrastructure development in the unserved and underserved areas with sustainable broadband and ICT services in Public Private mode. The Long-Distance International Regime has also been opened for licenses that shall further create international call competitive rates for 09 million overseas Pakistanis and Business.

7. Mobile operators (CMPak, Jazz, Telenor, Ufone and PTCL) have successfully carried out 5G trials in Pakistan for timely inclusion of next generation 5G-6G technologies. Accordingly, 5G Readiness Plan is under final conclusions for commercial launch of 5G Network, covering the aspects of spectrum management, infrastructure development, review of telecommunications regulations and 5G technology applications welcoming incumbent and new technology market players.

8. Authorization for Mobile Device Manufacturing has been awarded by PTA under one window operation and ease of doing business to 26 mobile and smart devices companies. Resultantly, during 2021 (January till August) 13.05 million mobile devices have been manufactured/assembled locally, surpassing the commercial import of 8.52 million mobile devices.

IT WING

1. Overview

MoITT is performing a central enabling role in the emerging dynamics of a knowledge society and knowledge economy. Under vision of digital Pakistan it is vital to take forward all the matters related to Information Communication Technology. IT Wing is responsible to take steps towards the e-government which will digitize intra-government operations and process towards a paperless and efficient environment, and also digitize government services for citizens and businesses for better delivery. To fully metalized the potential of harnessing digital technology for sustainable development. MoITT is working on the vision of Digital Pakistan which can be achieved through these digital transformation objectives:

- Promote a better understanding on the role of the digital Pakistan and transform both business practices and societies.
- Examine how institutions, policies and regulations, and human skills can be transformed to keep up with the quickening pace of digital transformation in Pakistan.
- Exchange views on the current state of the digital space, including issues related to digital flows; e-commerce; financial technology; the role of education, skills, and innovation, digital economy and implications of digital transformation on Pakistan's economic landscape

I. 'Personal Data Protection Bill' (Principally approved by the cabinet)

Achievement:

Successful completion of the draft bill. The bill is currently in review process for cabinet approval.

IT Wing initiated the preparation, stakeholder engagement and internal & external coordination for Personal Data Protection Bill. The preparation of this bill is a landmark achievement and will pave way for evolution of digital ecosystem in Pakistan by bringing in investment in the field of Information and Communication Technologies. IT successfully completed the draft bill.

II.   'Pakistan Cloud First Policy'

Achievement:

The policy is successfully approved by the cabinet during February 2022.

Successfully formulated 'National Cloud Policy' as per the guidelines of Digital Pakistan Policy. This policy will revolutionize the way ICT is procured in Public Sector Entities in Pakistan and will serve as a guideline for private sector. The policy will result in optimized utilization of resources, reduction in ICT expenditure and increased coordination between public sector entities for their ICT related initiatives.

III.   Digital Pakistan Policy 2023

Achievement:

Completion of revised draft Digital Pakistan Policy 2023. The policy is in final stages of review before formal approval of the cabinet.

IT Wing is working on this Digital Pakistan Policy 2023 as an update to Digital Policy 2018 which has been successfully drafted and will aid Pakistan's digital transformation to improve its citizens' quality of life and economic well-being by ensuring availability of modern, affordable and reliable digital services. Civil Society, Private Sector and Public at large are being engaged through various channels, so that the policy draft is updated in the best interests of citizens of Pakistan.

IV.   Artificial Intelligence Policy

Achievement:

Successful completion of the draft Policy. The bill is currently in consultation process with Government & Industry stakeholders.

IT Wing engaged at all levels for the first draft of Artificial Intelligence Policy. Defining implementation procedures, outlining the governance structure and drafting a mechanism for monitoring and evaluation of the particulars of the policy.

V.   Freelancer Policy

Achievement:

Successful completion of the draft Policy. The bill is currently in review process for legal and stakeholders consultation.

Consultation with relevant stakeholders regarding policy content is in progress. Established stakeholder reference group for developing appropriate procedures. This policy will set the outline for freelancing activities in Pakistan and pave the way for hiring of freelancers across Pakistan. Draft Policy has been prepared and in process of consultation.

2. 'PUBLIC SECTOR DEVELOPMENT INITIATIVES'

Achievement:

Conceptualizing, Designing and Drafting of PSDP initiatives

Several key ICT initiatives under Public Sector Development Projects are being initiated by this wing. These projects collectively form the ecosystem for key pillars of Digital Transformation under the umbrella of Digital Pakistan Policy. Some of these PSDP initiatives are:

1. National Data Exchange Layer
2. National Portal and Services Collaboration
3. Digital ID and Vaults
4. Civic Innovation and Technology Lab
5. High Impact Skills Boot Camp
6. Cybersecurity for Pakistan

3. ENABLING AND FACILIATING MOITT DEPARTMENTS

Achievement:

Conceptualizing, Designing and Drafting of PSDP initiatives

IT Wing is enabling and facilitating other departments that fall under the domain of MoITT. Bridging the gap between the needs and responsibilities of these organizations so that all of these departments work in synergy for the achievement of shared targets and goals. Some of the key achievements are:

- Synergizing the efforts of NITB and NTC for efficient working of operations at NCOC.
- Providing expert feedback on the projects of Ignite and PSEB.
- Ensuring that over ICT programs executed by the departments of MoITT are inline with digital Pakistan policy.

4. COLLABORATION ON INFORMATION TECHNOLOGY INITIATIVES

a. Centralized Collaboration Platform

Achievement:

Development of Central Collaboration Platform. The platform is currently in use and have more than 350 projects listed that are open for collaboration among the provinces.

b. Interprovincial Coordination

Achievement:

Coordination with Provincial IT Ministries for roll-out of IT Policies and programs. Successful policies of federal were shared with provinces, moreover a synergy was developed between provinces through execution of deployment of successful IT projects in all provinces.

c. Technical support in Bilateral and Multilateral Coordination

Achievement:

Effective involvement in internal and external coordination for Bilateral and Multilateral engagements. Some of these interactions are:

- Engagement with Russia
- Engagement with Iran
- Engagement with Japan
- Engagement with Egypt
- Engagement with China
- Digital Cooperation Organization (DCO)
- Central Asia Regional Economic Cooperation Program (CAREC)
- Engagement with World Bank
- Collaboration with USAID
- Collaboration with UNDP
- Involvement in the activities of China Pakistan Economic Corridor for Digital Initiatives.

5. INFRASTRUCTURE DEVELOPMENT

Achievement:

Initiated various infrastructure development projects for ensuring the availability of a digital ecosystem for the rapid delivery of innovative digital services, applications and content.

1. National Firewall system
2. Cybersecurity for Pakistan

6. HUMAN RESOURCES SKILLS DEVELOPMENT

Achievement:

Initiated several Human Resources skills development programs that are in line with the vision of Digital Pakistan to create a digitally skilled workforce. Some of these projects are:

1. High Impact Skills Boot Camp
2. Demand Driven Quality and Capacity Enhancement program.
3. Blended Virtual Education program.
4. IT Certification Program
5. 1000 ICT trainings for Government employees

TELECOMMUNICATION WING

Pakistan is progressing extensively towards the Fourth Industrial Revolution (4IR) with readiness of 5th Generation emerging Technologies, & telecommunications sector contributes significantly to Pakistan's economy. The telecommunications industry is still among the lucrative & preferred foreign direct investment segment for domestic and foreign investment entities. From FY-18 to FY-Dec 2022, the telecommunications industry attracted over U.S.$ 6.27 billion investments with 632 million USD from July- Dec 2022. Revenues of Telecom Industry increased from 651.1 billion PKR in 2020-2021 to 694 billion PKR in 2021-2022. Contribution in national exchequer increased from 225.8 billion in FY 20-21 PKR to 325.2 billion PKR in FY 22-23.

Pakistan successfully deregulated its Telecommunications Sector in 2003-04, leading to increased open competition in the fixed line and mobile cellular segments of the Telecommunications sector and resulting in the expansion of telecommunication ICT infrastructure, low tariffs, high revenues, increased tax contributions and employment opportunities. The telecommunications industry experienced positive Internet growth during the fiscal year 2022-23. The total number of Internet subscriptions increased from 118 million internet subscribers from Jun 2022 to 130 million internet subscribers for FY 2022-23. 12 million additional internet subscriptions i.e., 10.17% growth and total Broadband Penetration in Pakistan stood at 54.46%.

In Pakistan, lucrative telecom regimes currently opened for TMT (Technology Media Telecommunications) investments includes fiberization, Cable landing stations, Telecom Infrastructure Providers, Long Distance International, Internet of Things, Autonomous networks, open-source networks, data centers, smart device manufacturing & 5th Generation Mobile Technology making it an attractive proposition for business due to ample skilled human capital, population market & customer head. With the introduction of Right of Way Policy, the fiber penetration increased from 124,000 km to 190,000 km in 2021- March 2023.

Furthermore, the Ministry of IT & Telecom, through Universal Service Fund, has spent more than 100 billion PKR approx. From FY-18 to FY- 2023 including 55.25 billion PKR. In last three years for the ICT infrastructure development in the unserved and underserved areas – specifically Baluchistan & Merged FATA with sustainable broadband and ICT

services in Public Private mode – 65 projects have been expedited. A total of 25 million unserved population shall be served through these projects. The Long-Distance International Regime has also been opened for licenses that shall further create international call competitive rates for 10 million overseas Pakistanis and Business apart from creating investment opportunities in Cable landing station, Data Centers for increase in Optic Fiber proliferation. Multinational mobile operators (CMPak, Jazz, Telenor, Ufone and PTCL) have successfully carried out 5G trials in Pakistan for timely inclusion of next generation 5G technologies. Accordingly, 5G Readiness Plan is under final conclusions for commercial launch of 5G Network, covering the aspects of spectrum management, infrastructure development, review of telecommunications regulations and 5G technology applications welcoming incumbent and new technology market players. Readiness of 5G commercial launch study has been completed in-coordination with World Bank & Industry for soft launch of 5G Technology in Pakistan with the 5G test bed lab established in NUST in collaboration with Jazz. Authorization for Mobile Device Manufacturing has been awarded by PTA under one window operation and ease of doing business to 26 mobile and smart devices manufacturing companies. Resultantly, for during year 2023, 10.67 million mobile devices have been manufactured/assembled locally, surpassing the commercial import of 0.94 million mobile devices.

IC WING ENGAGEMENT (YEAR 2021-2022)

IC Wing is an integral part of the MOITT mandated for the international collaboration with global organizations, states and entities in the field of ICT. Over the period of time, the IC Wing has achieved a number of initiatives leading to socio-economic enhancement of the digital ecosystem, G2G and G2B collaborations and for the mentioned period.

The IC Wing has achieved the following notables:

Vision

A conducive environment for electronic transactions through trust, legal and stringent policy framework in the Country.

1. **South Korea**
   a) Secured the Korean Government's grant (USD 300,000) to establish an Information Access center at the Virtual University, Lahore (Pakistan) December 2021
   b) MoU was signed between Ignite-Pakistan and Born2Global Centre- Republic of Korea on 12 April 2022

The Information Access Centre facilitated the STEM trainings for school kids and for train the trainer. Approx. 400 trainings have been delivered.

2. **China**
   a) The Ministry signed an MOU with China's Ministry of Industry and IT, on cooperation in ICT, in November 2021 and setup a separate JWG in July 2022 for the ICT under CPEC.

3. **Japan**
   a) Secured a dedicated Technical Consultant for Pakistan from Japan for 2 years (JICA)who will further assess and qualify the opportunities between the two countries.
   b) Active engagement & proposals in exchange for securing technical cooperation.

4. DCO (Digital Cooperation Organization)
a) Successful launch of the DCO with Pakistan as the founding member
b) Hosted the visit of Secretary General Digital Cooperation Organization (DCO), Ms. Deemah AlYahya, at Islamabad, in November 2021
c) Secured sponsorship of 7 startups for LEAP 2022 at Riyadh, Saudi Arabia

5. GSMA
a) Secured/distributed over $1 million in funding for the startups in Pakistan
b) Secured support, advocacy, media interviews and free entry to the Ministerial Programme in 2022 and 2023

6. UNDP
a) Digital Readiness Assessment program (for Ignite, PSEB, NTC, MOITT, NITB)- September 2021
b) Secured a grant of $10,000 – June 2021

7. United Nations (ITU)
a) International Telecommunication Union is the ICT agency of the United Nations. It set up the Digital Transformation Centre in Pakistan in March 2022 at Virtual University, Lahore. The centre has Cisco as the primary partner while other partners are HP, and Digital Skills Foundation. The centre had interest and sign up from 40,000 people for the trainings, over 9000 people trained in 2 years.
b) Launched an important event of the " Girls in ICT " Pakistan 2021 supported by the GSMA, Code Girls, Telenor, Cisco, UN Women, UNESCO, ILO, EQUALS Global Partnership, W4.org. A number of trainings were conducted for the girls, in Pakistan particularly the ones from the remote and unserved, underserved areas- December 2021

8. ECO
a) Pakistan virtually hosted the very first meeting of the ECO Working Group on ICT, on 28th September 2021

9. SCO
a) Chaired Pakistani side at Ministerial meeting (MoFA, FIA, DGT team, IT).
b) The Ministry virtually participated in the SCO Starup Forum 2.0, hosted by India.

10.   Secured Foreign Trainings

Secured trainings free of cost, from the following organizations:

a) Asia Pacific Tele-community
b) CAREC
c) GSMA
d) ITU (United Nations)

Several professionals from the MOITT, PTA, SUPARCO, and other organizations got trained

Revised / Final

Annex-I

ACTIVITIES, ACHIEVEMENTS & PROGRESS OF LEGAL WING MOITT

Legal Wing of Ministry of Information Technology & Telecommunication "the Ministry", headed by Member (Legal) is responsible for drafting of primary & secondary legislation as well as its amendment from time to time. The wing also provides legal advices to the organization attached with the Ministry. In addition has key role in development of strategic, legal and regulatory Policy setting for the sector. The details and performance for the FY 2021-22 are as below.

1. Legislation

Responsible for Primary and Secondary Legislation and amendments (as & when required) like:-

i.   Key role in drafting and finalizing of Personal Data Protection Bill in consultation with stake holders. The draft bill is in line with International best practices. The bill is almost ready for sharing with Cabinet.

ii. Review of existing Statutes concerning to the Ministry as below:-

1. Drafted the amendments in Pakistan Telecommunication (Re-Organization) Act 1996 (amended 2006). Draft will further be discussed among stakeholders and once codal formalities are completed the bill will be sent for Parliament approval.

2. Drafted the amendments in Prevention of Electronic Crimes ("PECA") 2016. The draft has been shared with major stake holders and on the basis of same is being finalized. Especially new sections were introduced for sake to national cyber security. Once codal formalities are completed the bill will be sent for Parliament approval.

3. Key participation in National Information Technology Board (ACT) ACT

iii. Preparation of new and Review of existing Rules concerning to the Ministry as below:-

1. Telecom Rules 2000 are reviewed and are in final stage for further proceedings.
2. Key role in preparation and promulgation of rules as per requirement of Section 37(2) of PECA 2016 named as "Removal and Blocking of Unlawful Online Content (Procedure, Oversight and Safeguards) Rules 2021". The said rules have been Gazette Notified on October 12, 2021. These rules have provided legal mechanism for regulating social media.
3. Universal Service Fund (USF) Rules are also under review and in final stage.
4. Electronic Certification and Accreditation legal instruments modified
5. Redrafted/ Modified APT Rules
6. FIA Investigation rules under PECA 2016 were reviewed

iv. Drafting and Processing of Policies in the Sector till notification
1. A policy Directive on Public and Private Right of Way for Telecom operators as per requirement of Section 27(7) of PTRA 1996 (amended 2006) was drafted, shared with stake holder and sent to Federal Government for approval. After approval the Policy has been Gazette Notified.
2. Policy Directives for Auction of Spectrum as per requirement of Section 8 of PTRA 1996 also issued after due process.
3. National Cyber Security Policy was prepared and got approved
4. Cloud computing policy was prepared.

2. Legislation

i. The Legal Wing is responsible to handle all court case (throughout) Pakistan where MoITT is party and follows up till logical conclusion.

ii. The Legal Wing drafts Para-Wise Comments/ written statements against cases being proceeded in the Courts and submits accordingly.

iii. The Legal wing attend the courts and assists the AAGs, DAGs and AG office on case-to-case basis. A summary of cases is annexed with this report.

iv. In the cases pending Quasi-Judicial forums, the wing prepares replies and appears on behalf of the Ministry the as departmental representative as and when required.

3. Providing legal assistance to Ministries/ Departments pertaining to IT and Telecom

i.   The Legal Wing provides advice to different organs (Departments/ Divisions/Companies/ Regulator etc.) of the Ministry as and when required as per Rules of Business 1973.

ii.   The Legal Wing also provides legal input/ feedback to the relevant organizations of the Ministry as per

iii.   Legal wing extends support to all internal wings of the Ministry, specifically Telecom Wing, ICU wing.

iv.   Assisted appropriate government in adjudicating the cases of Right of Way (RoW) in compliance to section 27A of PTRA 1996 and policy on the subject.

4. Coordination

i.   Legal Wing of MoITT keeps close liaison with Ministry of Law and Justice and other stake holder in the legal matters

ii.   Legal wing coordinates all matters relating to PTRA 1996, PECA 2016, ETO 2002 etc with/ among different stakeholders.

iii.   Dealing with the matters pertaining to National Information Technology Board which is in process of being given status of an autonomous organization through IT Board ACT which is under approval with Senate of Pakistan.

iv.   Represented MoIT& T in different forums and seminars local as well as International level

v.   Coordinated with big digital platforms like google, YouTube, Facebook etc to resolve legislative as well as operational issues.

vi.   Main organizations with whom Legal wing provides legal assistance and coordination are as below:-
    1. National Information Technology Board (NITB).
    2. National Telecommunication Corporation (NTC).
    3. Electronic Certification and Accreditation Council (ECAC)
    4. Universal Service Fund Company (USF Co).
    5. Ignite (National Technology Fund), (NTF)
    6. Telecom Foundation (TF).

7. Pakistan Telecommunication Company Limited (PTCL).
8. Pakistan Telecommunication Authority (PTA).
9. Pak Data Com Ltd. (PDCL).
10. Virtual University (VU).
11. Pakistan Software Export Board (PSEB).
12. Special Communication Organization (SCO).

Courts Wise Breakup for the Year 2021-2022

Sr #	Courts	Status at MOITT	In Progress	Disposed of
1	Supreme Court of Pakistan	3	3	-
2	Islamabad High Court	29	3	26
3	Lahore High Court	20	5	5
4	Peshawar High Court	17	14	3
5	Sindh High Court	9	9	-
6	Balochistan High Court	5	2	3
7	Gilgit Baltistan Chief Court	1	1	-
8	Others Court Cases	4	4	-
Total		**88**	**51**	**37**

National Information Technology Board (NITB)

Vision

In an era of technological revolution, robust digital strategy, tech tools and applications play a key role in stability of economic growth and consistency of social development in any country. Determined to empower the citizens of Pakistan, National IT Board (NITB) under Ministry of Information Technology and Telecom (MoITT) intends to take digital initiatives and provide technical support system to all federal and provincial ministries and divisions to boost up work productivity in the government offices and convert them into digitally empowered organizations. Keeping up the vision of ruling government of Pakistan Tehreek-e-Insaf (PTI), the ministry envisions a digitally developed and IT-equipped Pakistan in the next five years with impeccable IT consultancy services.

Where we were

While other developing countries used IT to strengthen their economy and safeguard their nation's future, Pakistan's successive governments failed to come up with a long-term and committed approach to digital economy. Beyond the photo-ops and blog posts government performance in IT sector has been dismal. Government policies in the past 5 years are characterized by competition with private sector and maintaining control in a decentralized and fragmented environment. In absence of sponsorship and direction from highest level, each department at federal and provincial level created its own digital strategy competing with each other to have maximum share of resources, budgets and control whereas leading governments around the world (Singapore, India etc.) have worked in close partnership with the IT industry to help them develop capabilities and eventually compete at global level.

Instead of creating holistic and long-term strategy to solve the core issues facing the IT industry the government departments focused on redundant projects with limited and short-term impact such as startup incubators and internships/short-training programs.

Objectives

- To create an enabling environment for development and improvement of IT and telecom sector in Pakistan through formulation and implementation of policies and legal framework

- To provide robust ICT infrastructure for enhancing productivity in public sector organizations.
- To facilitate good governance in the country.
- To improve conditions for public service delivery by empowering, contributing towards the overall socio-economic growth of the country.

National Information Technology Board is mandated by the government of Pakistan to provide new revenue and value-producing opportunities to the public sector associations, with a wide range of technical guidance along with advisory services, for the recognition of specific areas such as automation, design, development, and implementation. NITB is one stop for all the Federal Ministries/Divisions. The board will be responsible for the Ministries/Divisions' operations to run efficiently. To strengthen the government processes NITB is responsible to provide technical assistance, facilitating the Federal Ministries/Divisions with the e-governance programs, helping ministries with the respective IT operations, frameworks, assessment-based training, managed Services, providing Software/Hardware Security. Implementing ICT Governances Policies and making National Strategic Plan(s) of all Federal Government workplaces is one of the touchpoints of NITB.

Key Projects Updates

NITB has efficiently produced many websites, web portals web and mobile applications. 11 Mobile Applications, more than 71 websites, and portals.

Projects Name	Downloads	Description / Services
City Islamabad App	407,100	40+ Citizen Centric Services Revenue Collected 1,205,134,583.00 **More than 60,000 Active Users** Linked with Excise, CDA, Police & District Management

Kamyab Jawan	---	Loan Disbursed (27.8 Billion) Jobs Created (36582) Loan in Process (472,506) Number of Applicants Applied for Loan: 1,274,812 Request Counts Gender wise as follows: Female:15.9 % Male: 84.0 %

Sr.	Total Eligible	Total Disbursed
Tier 1	17298	14131
Tier 2	5639	3980
Tier 3	791	619

Covid-19 Mobile App	2,422,000	Shows real-time statistics of all corona patients in Pakistan Other features are Radius alert & public awareness videos **No. of active users: 171295**
DGSE App	1601	Creates awareness among citizens regarding the education, training, and rehabilitation of disabled children Serves more than 30,000 specially-abled children **No. of active users: 230**
Pass Track App	759,000	Total Registered users: 1899100 Total Passengers Travelled: 3232251 Symptomatic: 22234 Asymptomatic: 3110022 **No. of active users:**
Baytee App	8140	The app is developed to empower women by providing them information like hostels, law & order, police stations, hospitals, jobs,

		scholarships, vocational courses, beauty parlors, universities, etc. with just one click. **No. of active users: 415**
Durust Daam	189,290	Enables citizens of Pakistan to know about the official rates of goods defined by the ICT District Administration **No. of active users: 14,049**
Pak Neghaban App	2860	Helps Pakistan citizens locate the nearest lab/ hospital in the vicinity and check the availability of beds/ ventilators. **No. of active users: 389**
National Jobs Portal	---	Total Registered Candidates: 158,705 Total Job events: 51 Total Jobs: 344 Total Vacancies: 727 Total Job Applications: 178,903 Total Employers: 37

Portals

1. Automation of Cabinet Procedures

A centralized portal powered by National Information Technology Board to automate manual system for Cabinet agenda meetings. This portal is facilitating e-governance and promoting paper free culture for enhanced efficiency.

2. Raabta Aasaan

NITB has been offering services to citizens with Rabta Aasaan Chatbot by presenting them with answers to their instant queries. The chatbot is available on every government department's website with ".gov.pk" domain where citizens can ask quick questions and get fast and satisfactory replies.

3. Freelancers Facilitation Hub

Free launching hub is a web portal, an initiative of ministry of information technology and telecom and developed by NITB. Primarily the sole purpose behind this portal is to register and assist those who have lost their jobs due to coronavirus pandemic. This hub provides assistance, maintains record and promotes free launching occupations. Free launchers can register themselves you this web portal.

4. National Security Division Portal

This portal is developed for registration of think tanks, who will submit initiatives, policies and proposals which will be operated by SAPM.

5. NITB Web Queries Portal

NITB web support portal improves internal efficiencies through an electronic administrative system and aids in resolving concerns.

6. Automation of Performance Agreement

A portal designed by NITB, primarily this portal will help to automate newly taken initiates and their detail by various federal ministries.

7. Foreign Minister Portal

FM Portal will play a phenomenal role in resolving public concerns raised by the overseas Pakistani community and foreign nationals.

8. Central Dashboard of NITB

NITB developed a central dashboard where summary sheets of all portals and applications are available. This portal can be publicly accessible and can also be presented in meeting where we are showing achievements of NITB.

9. Bank Account Info Portal

NITB created a dynamic platform with back-end portal, where all ministries will update their account balance info quarterly, which will bring transparency and visibility on financial account status and their current details.

10. Sindh Mining Portal

Portal automates whole system of coal mines from entry to truck exit.

11. IBCC Portal

This portal consists on a central repository and a dashboard which will be used for certificate verification and equivalency certificate issuance till Intermediate Level.

12. NOC Portal

NITB developed this portal for employees working under Establishment division & for the issuance of NOC, which is required for studying abroad, deputation, abroad missions, umrah, foreign visit or any other activity.

13. One Window Operational Portal

Portal for online registration and issuance of licenses to those seeking license from DTS. Portal helps in inter office file movement.

14. DOE Portal

This portal has been developed with a purpose to grant license for Petrol pumps, depots & lorries, CNG stations & lorries, LPG plants and & lorries through digital mechanism. Portal aids in providing online facility to Oil Manufacturing Companies, Contractor and Individual users and highlights expired licenses, application updates with OMC, contractor and individual users.

15. MORA Portal

Mora Portal assists in online registration of Madrasas, Management of Teachers and Students, Funding Resources etc.

16. PEHL 911

An integrated platform with call center where any call received on 911 can be traced and forwarded to concerned department. The purpose behind is to provide Public services and facilitation to Citizens of Pakistan via single helpline number.

Applications

1. Pass Track

This App provides ease in tracking international passengers who are facing "Symptomatic" health issues regarding Covid-19. With this app, it's convenient to track the infected patient and quarantine them in a specific place. For smart phone users, use of this app is mandatory as implemented by Pakistan Civil Aviation Authority.

2. Covid 19 Mobile App

In a wake of curbing the spread of COVID-19, NITB has developed the application "COVID-19 GOV PK" which shows real-time statistics of all corona patients in the country. It also has some important features of radius alert, public awareness videos, chatbot and activity alarm.

3. DGSE App

DGSE App, a practice of educating students who are faced with physical, developmental or neurological delays. App provides an incredible support for children with disabilities living in Islamabad. App also notifies about the status of submitted application for enrolment of Special children in the nearest school.

4. MOFA HRMIS App

An app where employees of MoFA can create their Profile to help create a central repository of all employees.

5. Click ECP App

A smartphone application, providing all relevant information regarding Election Commission of Pakistan and enabling citizens to view notifications, updates and every other general information available on website of Election Commission of Pakistan.

6. E-Taleem

E-Taleem is an online education app which holds online classes for the students of kindergarten till matric and delivers online lectures during COVID-19 situation.

7. Panagah App

An app consisting of central dashboard displaying all information related to Panagahs along with all available funds of donors and Govt. along with details of needy people who have already applied or willing to apply for any welfare service through Pakistan BaitulMall.

8. Project Management System

An app where employees can mark attendance online when they are in the office defined radius. Also inventory, store and POL record will be incorporated in the said App to issue any store item and vehicle requisition from specific project.

9. Kamyab Jawan App

Kamyab Jawan App provides a platform addressing issues of young generation of the country for promoting gender equality, rights-based youth empowerment and development.

PSDP Projects

1. E-Office

New version of E-office has replaced the previous versions and 4-day capacity building training session has been arranged by NITB for facilitation of nominated government employees from relevant ministries on the IC & HR Module. E-office is an electronic system which has shifted the official work from manual to paperless methods. It is aimed at improving internal efficiencies in an organization through electronic administration. The e-filing system in the e-office program enables the electronic movement and tracking of files and the archival and retrieval of data. It is not only easy but also safe and will save a lot of time and stationary. In addition to this, the paperless administration methods have been helping a lot in carrying smooth official works without any risk amid COVID-19 pandemic.

2. Beep Pakistan, A Technology for Smart Collaboration & Communication

In response, to growing digital demand and fast-tracking digital transformation for safe and secure businesses collaboration and communication National Information Technology Board under the leadership of the Ministry of IT & Telecom, is working on the Beep application for government employees only. This application aims to enhance robust internal communication and collaboration at the federal government level. It will be integrated with secured messaging, audio, and video conferencing capacities to remain engaged with staff and other stakeholders while working from offices or remotely.

What beep Pakistan will offer?

- Unified communication and collaborative mobile application
- Smart messaging (text, voice, video)
- Secured Communication platform (audio & video)
- Content management System
- Advance research filters
- Integrated e-Office Mobile App
- End to End Encryption
- Social feeds & much more

3. Presidential Initiative for cyber efficient Parliament

Honorable President of Pakistan has directed to launch a major programme "President Initiative for cyber efficient Parliament" to enable Senators and Members of the National Assembly to conduct Parliamentary business through State of the art cyber tools and techniques. Ministry of IT & Telecom will design and implement cyber solution to the Parliament and nominations from Senate and National Assembly is underway.

Consultancies

- **Automation of Survey Of Pakistan**
- **Automation of Ehsaas Program**
- **Blended Learning**

- **E-Portal for Establishment Division (HRMIS)**
- **ECP Data Centre**
- **Blended Learning**
- **Health Management and Information System**
- **Pakistan Post CSS**
- **Islamabad Traffic Police**

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 Departments. 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

Information technology has assumed an enabling role in the emerging dynamics of a knowledge-based/driven society and knowledge economy. It is a key lever of economic development. Pakistan's IT sector has a promising future, brimming with talent, and with a potential to become the largest export industry of the country. There has been a consistent

growth in IT & ITeS export remittances over the last 3 years with a compound annual growth rate (CAGR) of 25.76%, the highest growth rate in comparison with all other local industries. Historical ICT industry exports data as per State Bank of Pakistan is as under:

Financial Year	IT Remittances (US$)-Billions
2018-19	1.19
2019-20	1.44
2020-21	2.12

ICT export remittances, including telecommunication, computer and information services for the period July 2021 to May 2022 during FY2021-22 have surged to US $2.31 billion at a growth rate of 25.45 % in comparison to US $1.89 billion during the same period in FY 2020-21.

Net exports for the period July 2021 to May 2022 during FY2021-22 were US$ 1.809 billion which is 75.98% of US$ 2.38 billion in ICT exports. Last year, for the same period the net exports were US$ 1.425 billion which was 75.08% of US$ 1.89 billion in ICT exports. Pakistan's ICT 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 ICT industry exports to 169 countries and territories. Top 15 export markets for Pakistan's ICT industry in the order of export revenue are: USA, UK, UAE, Singapore, Ireland, Switzerland, Canada, Malaysia, Germany, Norway, Sweden, China, Australia, Saudi Arabia and Japan.

Pakistani freelancer exports remittances grew by 4.49% from July 2020-March 2021 to July 2021- March 2022:

Period	Freelancer Exports US$ (Million)	Composition of Exports	Total Exports- ICT Sector (US $-Billions)
July 2021–March 2022	303.97	IT: $213.131m + Non-IT: $90.842m)	1.948
July 2020-March 2021	290.89	IT: $271.116m + Non-IT: $19.781m	1.5

Well-developed infrastructure, even in the remote areas of Pakistan such as Gilgit Baltistan, has resulted in the development of gig economy in the far-flung areas of the country thus providing viable opportunities to Pakistani freelancers. These freelancers are earning valuable foreign exchange and are thus having a major, oversized impact on their remote, rural communities as they contribute to the expansion of the economic eco system through their white-collar earnings. The aforementioned earnings would not have been possible without taking the freelancer route due to limited livelihood opportunities in rural parts of Pakistan for the educated youth.

Pakistan is the 2nd most financially attractive location in the world for offshore outsourcing services according to Kearney Global Services Location Index 2021. Several international companies including Global enterprises like Bentley®, Ciklum®, IBM®, Mentor Graphics®, S&P Global®, Teradata®, and VMware®have established global consulting services centers, research & development facilities and BPO support services centers in Pakistan.

Pakistan is ranked as the 2nd largest supplier of Online Labor in Software Development and Technology as per International Labor Organization Flagship Report 2021. The government considers the startup community, freelancers, developers and IT graduates an important pillar of its strategy.

In line with the present government's focus on ICT sector, the Ministry of Information Technology and Telecommunication and ancillary organizations are extending maximum facilitation to the IT industry. As a result, the number of IT & ITeS companies registered with Pakistan Software Export Board increased to 4,329 by June 2022 compared to 3,494 in June 2021: a growth rate of 24%. The increase in the number of companies is particularly noteworthy as it is not mandatory for IT companies to register with Pakistan Software Export Board.

There are 19,000+ IT & ITeS companies registered with Securities and Exchange Commission of Pakistan (SECP) comprising of both domestic and export-oriented enterprises, reflecting strong growth of IT sector. There are 600,000+ English-speaking IT & BPO professionals, with expertise in current and emerging IT products and technologies, and over 30,000 IT graduates are being produced each year. The number of IT companies

is expected to surge with the rise of entrepreneurship in the younger population of the country.

EcommerceDB, a subsidiary company of Statista, said that Pakistan was the 37th largest market for e-ecommerce with revenue of $6 billion in 2021. eCommerce businesses like Daraz.pk, Pakwheels.com, Foodpanda.com, Zameen.com and others are generating significant business in Pakistan and growing at a fast pace. The biggest player in the Pakistani eCommerce market is Limelight.pk. The store had a revenue of $50 million in 2021. Limelight.pk is followed by Gulahmedshop.com and Khaadi.com as the second- and third largest stores with $48 million and $29 million, respectively.

Pakistani startups are gaining international recognition and investment, and SME businesses are driving innovation, economic growth and job creation. The start-up ecosystem has come of age rapidly in Pakistan. There are both public and private sector entities supporting the startups by providing both financial and mentoring support. One of the reasons for this change is widely published success stories of startups both in Pakistan and internationally. Another reason for this change is a strong/robust telecom sector in Pakistan that allows Pakistanis, even those residing in remote areas, to access the international market. The current situation is such that a budding entrepreneur has a choice of which incubator would he/she prefer. The option include IGNITE's National Incubation Center, PITB's Plan 9 & PlanX, Nest I/O, LUMS Centre of Entrepreneurship, i2i, Microsoft Innovation Center among several others. The Federal Ministry of IT & Telecom runs IGNITE which funds startups and innovative projects in health, education, energy, agriculture, telecom, finance and other verticals. Ignite has a national network of incubators across Pakistan nurtures startups and engages them with investors and corporations.

Pakistan's startup sector witnessed the best year in 2021, as 81 deals worth $350 million were made, according to a Deal Flow Tracker by Invest2Innovate (i2i). The amount raised is more than 5x of what was raised in 2020 i.e. $65 million. The top three biggest deals of 2021 were: Airlift ($85 million), Bazaar ($30 million), and Tajir ($17 million).

According to publicly available information, from 2015 to 2021, Pakistani startups raised $563.5 million, out of which 62% was raised last year alone showing the extent of shift in the funding landscape. Similar to other emerging markets, e-commerce, fintech and logistics attracted the most funding in 2021.

E-commerce emerged as the top-funded sector in 2021, attracting $202 million of funds raised in the year. Fintech was second on the list with $95 million funding raised in 2021, followed by trucking & logistics that grabbed $17.4 million.

Pakistani ICT companies are providing a broad set of products and services to world's largest companies. State of the art development on latest technologies such as AI, Robotics and Driverless cars is being conducted in Pakistan and large IT companies, including US companies have setup R & D centers in Pakistan.

Pakistan's ICT industry counts world's largest entities among its regular clients. Several international companies including Global enterprises like Bentley®, Ciklum®, IBM®, Mentor Graphics®, S&P Global®, Symantec®, Teradata®, and VMware®have established global consulting services centers, research & development facilities, and BPO support services centers in Pakistan thus generating jobs, contributing to the development of soft image of Pakistan, and attracting FDI.

Pakistani ICT industry has among the youngest workforce in Pakistan and arguably the highest proportion of women as company founders and startup owners. The IT industry arguably has among the highest proportion of women working in technical, managerial and executive level positions.

The Government of Pakistan (GOP) continues to facilitate the IT industry through numerous sustainable developments and accelerated digitization projects, research and innovation, software technology parks, subsidized bandwidth, international marketing, international certifications, internships and trainings.

Pakistan is an attractive investment hub for Tech investors and businesses desiring to expand their businesses. Investment Opportunities in Pakistan's IT & ITeS Sector include but not limited to:

- IT parks & BPO complexes
- IT global consulting centers
- Tech research and development centers
- Technology incubators
- High growth IT startups

- Gaming and animation studios
- Company acquisitions and mergers
- Venture capital funds
- Data Centers
- Contact centers

Pakistan has improved its position in areas such as people skills and availability, digital skills, business environment, legal adaptability, and corporate activity making Pakistan a preferred Tech outsourcing destination. Savings of 50-70% in annual operational costs can be gained by outsourcing to Pakistani IT companies, setting up R&D centers, tech support/customer support services & sales/marketing centers in Pakistan.

Incentives for the Industry Growth

The Ministry of Information Technology & Telecommunication supports all credible private sector initiatives aimed at bolstering the local IT industry and attracting foreign investment. Government realizes that it has an important role in terms of providing a conducive environment to IT industry through infrastructure and HR development. Government's incentives for IT industry include:

- PSEB registered companies and freelancers would pay only 0.25% on export proceeds
- 100% tax credit on profits and gains derived by the IT start-ups for the tax year in which a start-up is certified by Pakistan Software Export Board (PSEB) and for the next two years.
- 100% equity ownership allowed to foreign investors, 100% repatriation of capital and dividends allowed, and tax holiday for venture capital funds till June 2025.

Steps Taken To Enhance ICT Industry Growth & Exports

1. To increase outreach to secondary and tertiary cities and towns, PSEB extended registration fee waiver for companies, call centers and startups from underserved areas for a limited duration. The waiver has significantly increased the number of registered companies and startups from underserved areas including Daska, Chakwal, Khanewal, Chenab Nagar, Mithi, Lasbela, Pir Mahal, Hazro, Vehari, Okara, Chitral, Gojra, Rajjana and Pakpattan. The geographical membership footprint of ICT companies registered with Pakistan Software Export Board has

increased from 24 cities in June, 2019 to 58 cities by June 2022 through focus on secondary and tertiary cities to enable the growth of the tech industry across the country.

2. PSEB is executing Tech Destination Pakistan campaign to market Pakistan's IT industry in the international markets and to facilitate Pakistani IT companies to connect with overseas Pakistani professionals. The campaign is aimed at marketing Pakistan's ICT Industry to executives of international companies. This would put Pakistan on the radar of the executives of major global companies and is likely to create a multiplier effect in terms of significant investment and business into Pakistan and is in line with the Government's priority on enhancing exports of Pakistan's technology exports.

3. PSEB Techleads portal focuses on creating linkages between Pakistan's ICT industry and Pakistani diaspora. The online match making tools provided on techleads portal would provide Pakistani ICT companies an opportunity to solicit the services of Pakistani expatriates in multiple countries and thus can potentially enhance the probability of closing sales orders for Pakistani IT companies since overseas settled Pakistani IT professionals are well versed with local culture and business norms and have the necessary connections in their respective countries of residence. It is expected to contribute significantly to the efforts of enhancing Pakistan's IT exports and at the same time develop Pakistan's image as a tech destination for outsourcing and investment.

4. PSEB has arranged online B2B sessions for Pakistani IT/ITeS companies with entities in many countries such as Mexico, Spain, Jordan, Bahrain, South Africa, Japan, Korea, Netherlands and Saudi Arabia, Lagos, Netherlands, Japan, Argentina, Hong Kong, Sweden among others. The purpose of the webinars was to provide collaboration cooperation and networking opportunities to Pakistani IT/ITeS companies.

5. PSEB is promoting Pakistan as a competitive choice for outsourcing work is vital to bolster the local IT industry. Participation in international events strengthen Pakistan's brand image and provide a platform to the local IT companies to interact directly with prospective customers. 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. International marketing and participation in trade shows is one of the most effective way of projecting a country or a company and its products to potential customers/investors. During FY 2021- 2022 (up to June 2022), PSEB extended subsidies and facilitated participation of PSEB member IT companies in international events in United Kingdom, Canada, Denmark, Nigeria, Dubai, Saudi Arabia, Spain, USA and Japan.

a. MWC Barcelona, (Barcelona, Spain -July 2021 & Feb 2022),
b. Digital Tech Summit (Copenhagen, Denmark - Nov 2021)
c. GITEX (Dubai -Oct 2021),
d. LEAP 2022 (Riyadh, Saudi Arabia - Feb 2022)
e. 2nd Pakistan Africa Trade Development Conference (Lagos, Nigeria – Nov 21)
f. GDC (San Francisco, USA-March 2022)
g. Japan IT Week (April-2022)
h. London Tech Week (June 2022)
i. Collision Canada (June 2022)
j. Expo Dubai 2020

6. PSEB has also published 15 Industry White Papers, hired a social media management company to promote Pakistan's ICT Industry, organized webinars for IT industry, published a Coffee Table Book to celebrate achievements of Pakistani freelancers and launched a campaign to highlight success stories of IT companies among other activities. PSEB also sponsored a number of local events and trade fairs geared towards ICT Industry, arranged multiple industry feedback sessions in various cities and sponsored events focused on Pakistan's tech sector.

7. National Freelance Facilitation Policy is being finalized in consultation with the stakeholders. The policy is intended to facilitate the growth of freelancers in Pakistan and enhance exports. The Government is targeting US$1 billion in export remittances inflow from Pakistani freelancers in three years and is accordingly taking all possible measures to facilitate the growth of gig economy in Pakistan.

8. Keeping in context the importance of Freelancers for growth of ICT industry exports, all possible efforts are being undertaken to facilitate freelancers. PSEB in partnership with State Life Insurance Corporation has developed insurance packages for ICT sector professionals and freelancers The packages would cover including health &

life insurance, employer and employee liability insurance at subsidized rates. This would mitigate the general lack of health and life insurance for IT industry workers. In addition, PSEB would work with financial entities such as banks to provide collateral & interest free business loans to SMES, MSMEs, freelancers and tech startups and which shall help in growth of IT Industry eco system in Pakistan.

9. PSEB has launched a project to provide high-end training/international certifications either free of cost or at highly discounted rates to over 10,000 IT professionals, young graduates and freelancers. International certifications are supremely important in establishing the technical prowess of ICT professionals and making them employable while at the same time meeting the requirements of IT companies. The trainings would be conducted through third parties.

10. The growth of Pakistan's ICT Industry is directly correlated to the ample availability of a manpower pool trained in state-of-the-art technologies. Arguably more important than offering subsidies or any other policy interventions, ensuring the availability of a strong talent pool guarantees long term sustainable development of Pakistan's IT Industry. PSEB has launched multiple projects aimed at enhancing quality and quantity of the talent pool to ensure the long-term growth of the IT industry by providing options to the IT professionals and young graduates to continuously improve their skills. For instance, PSEB is working with principal vendors such as IBM, VM Ware, PMI, AWS, Huawei, Microsoft, CISCO, Oracle, Red Hat and others to develop a pool of highly skilled IT professionals by imparting high-end training/certifications either free of cost or at highly discount rates.

11. ICT companies and freelancers in Pakistan are generally technically savvy but may lack soft skills that are equally important for growth of a tech company. In order to address this shortcoming, PSEB has developed Soft Skills Program to help IT companies' employees, entrepreneurs and freelancers develop requisite soft skills. It is expected that proliferation of soft skills within the IT Industry would help ensure sustainable growth of IT Industry and enhance exports.

12. PSEB had 18 Software technology Parks in just four cities in Islamabad, Rawalpindi, Lahore, Karachi in Year 2020. This number increased to 26 STPs as of June 2022 with additional STPs established in Gilgit, Lahore, Faisalabad, Swat, Quetta, Gujranwala, Sialkot, Abbottabad, Mansehra, Gujrat, Jamshoro and Khuzdar.

Furthermore, PSEB is setting-up 25 Software Technology Parks under PSDP Project "Establishment of 25 STPs in Pakistan with Rental Subsidy Phase -1" in secondary & tertiary cities. Under this project, PSEB is providing 25% rental subsidy and free of cost bandwidth to IT & ITeS companies for the 1st year of tenancy. PSEB has so far made progress towards setting up 10 STPs in the following underserved areas under the aforesaid Project till June 2022 and further are in process:

Details of STPs				
S. No	Name of STP	Location	Address	Area offered for STP
1	Shah Tower	Abbottabad	Mansehra road, adjacent KPIT Park	5,700
2	Vertex	Swat	G.T Road Amankot	17,990
3	Hazara University	Mansehra	Directorate of IT, 2nd floor Academic block No. 3 Hazara University	14,074
4	World Star	Islamabad	Plot #134 Street 9 Industrial Area i-10/3	50,000
5	Aden IT Center	Gujrat	Main G.T road, Opposite to Science College	9,664
6	Sialkot Business and Commercial Center	Sialkot	Paris Road adjacent to Sialkot Chamber of Commerce & industries	15,276
7	Salaar Center	Lahore	Salaar center, main boulevard Garden Town, Barkat Market, Lahore	50,000
8	Gujranwala Business Center	Gujranwala	Gujranwala Chamber of Commerce & Industries, Aiwan-e- Tijarat Road	15,000

9	Sapphire Jamshoro Data Center	Jamshoro	A-28, Sindh University road	5,000
10	BUET Khuzdar	Khuzdar	Balochistan University of Engineering &Technology, Kuzdar	5570

13. PSEB has also launched a special project to convert unused, defunct public sector buildings into state-of-the-art Software Technology Parks under PSEB project titled "Conversion of Public Sector Building into STPs and Upgradation of the facility" by providing Capital Expenditure (CapEx). Following public sector buildings have been selected/in process through a standard procurement process to provide CapEX for capital works and other facilities to upgrade the infrastructure like flooring, false ceiling, partitioning, refurbishment or extension of the existing structure (washrooms, canteen up-gradation, etc.), backup power arrangements, heating & cooling arrangements, fiber optic, Wi-Fi, etc., wherever the designated committee deems necessary. This will make buildings readily available and well-equipped IT enabled workspaces with reliable power arrangements, secure infrastructure and high-speed internet facility, in to become STPs.

S. No	Name of University	Location
1	Women University of AJK	Bagh
2	University of Balochistan	Quetta
3	University of Engineering and Technology,	Lahore
4	University of Agriculture, Faisalabad	Faisalabad
5	Quaid-e-Awam University of Engineering, Science & Technology (QUEST)	Nawabshah
6	Special Communications Organization -	Konodas
7	Balochistan University of Engineering and technology.	Khuzdar

14. A loan agreement was signed between Economic Affairs Division and EXIM Bank of Korea worth US$158 Million for establishment of Pakistan's largest IT Park in Karachi. The total cost of the project is estimated at US$186m and would take 48 months to complete. The IT Park building would have 14 floors with a gross floor

area of 106,449m2 Park with latest state of the art facilities to ensure that IT companies can operate 24/7 providing services to clients around the globe. In addition to office space, the park would have software testing labs, business incubation centers, technology commercialization centers, exhibition halls, auditorium, day care center and other ancillary facilities and would take 48 months to complete. The IT Park would address the shortage of space for technology companies in Karachi and would thus help bolster the competitiveness of the technology industry eco system in Pakistan.

15. Several Memorandum of Understandings (MoUs) have been signed with multiple entities. The MOUs covers multifaceted cooperation in establishing a software technology parks, capacity building, online training, developing academia/industry linkages, and facilitating IT industry, startups, and freelancers. All these components are extremely important for holistic growth of Pakistan's IT Industry.

16. Reduced the cost of bandwidth by 30% tariff for IT companies. The bandwidth tariff was slashed by 50% for the BPO sector. These reductions are significant in improving the competitiveness of IT sector and would therefore contribute to IT Industry growth.

17. A skilled manpower, trained in latest state of the art technology domains, is essential for the growth of IT industry in Pakistan. No industry is arguably more dependent on trained manpower than IT industry. PSEB has assisted 1700 IT Professionals with capacity enhancement through professional certifications during the year 2021-22.

18. During FY-2021-22, financial and technical assistance has been extended to 09 - companies for CMMI level-2, Level 3 and Level-5 certifications. Assistance has also been extended to 06 companies to achieve ISO27001/ISO20000-1. These international certifications greatly improve the competitiveness of IT companies, thereby, making it easier to solicit business from international customers. They also help in delivery of products and services as per customer expectations.

19. PSEB has collaborated with international and national cloud service providers to offer subsidized cloud services to IT professionals and companies helping them in increasing their productivity and lowering costs. The international cloud service vendors on board with PSEB, includes the following:

- AWS

- Huawei
- Google
- IBM

On the national front, PSEB has the following companies as their cloud service providers:

- Rapid
- PTCL
- RDS

With the availability of cloud services, IT professionals, companies, organizations, and freelancers would be able to benefit from quick deployment, automatic software integration, swift updates, high efficiency, cost reduction, increased data security, and massive scalability.

A portal for provision of these services has been created where interested individuals and companies can apply for these discounted cloud-based services,

https://cloud.techdestination.com/

20. PSEB is working with banks, Kamyab Jawan program and other available credit schemes to develop mechanism for offering collateral free loans to IT professionals, startups and IT companies in order to enhance of industry growth.

21. **Following PSEB Projects, geared towards the growth of IT industry are in various stages of implementation**
    a. **Certification of IT Professionals:** A skilled manpower, trained in latest state of the art technologies, is essential for the growth of IT industry in Pakistan. No industry is arguably more dependent on trained manpower than IT industry. PSEB has assisted 3,850 IT Professionals with capacity enhancement through professional certifications during the year 2021-22.
    b. **Enhancing IT Exports Through Industry Support Program:** During FY-2021-22, financial and technical assistance has been extended to 09 companies for CMMI level-2, Level 3 and Level-5 certifications. Assistance has also been extended to 06 companies to achieve ISO20000-1. These international

certifications greatly improve the competitiveness of IT companies, thereby, making it easier to solicit business from international customers. They also help in the delivery of products and services as per customer expectations.

c. **Enlisting of IT companies on GEM Board:** MoITT is working on listing Pakistani IT companies on GEM Board of Pakistan Stock Exchange. The goal is to increase the number of listed technology companies on PSX Main Board & GEM Board which would in turn help to strengthen the financial ecosystem for IT/ITeS sector growth and contribute to efforts for building cloud strong brand image of Pakistan's IT/ITeS industry in the international markets. Pakistan Software Export Board (PSEB), being the apex body of the MoITT, to provide an enabling environment and take measures for growth of Information Technology / Information Technology Enable Services (IT/ITeS) exports and thus support IT/ITeS industry, is implementing a PSDP funded project to enlist the IT/ITeS companies on GEM Board of PSX. Under the project the PSEB has signed agreement with AKD Securities Limited for provision of financial advisory services for enlisting of 8 IT/ITeS Companies under lot 1 and selection process of the companies applied for enlisting on GEM Board of PSX is under process. The companies selected by the Committee will be listed on GEM Board of PSX accordingly. Agreement with second financial advisor, i.e. M/s JS Global Capital Limited selected by the project's committee, is going to be signed in July 2022. There is a significant advantage particularly for Pakistani tech companies as it makes it easier to solicit overseas customers due to increased credibility that comes from being listed on a reputed platform such as Pakistan stock exchange. Listing on Stock exchange also improves corporate governance and companies can maintain more autonomy and control through ability to rapidly raise low-cost capital compared to banks, venture capitalists or private investors.

d. **ICT Internship program:** To develop a human capital talent pool for the ICT Industry which is in line with PSEB's objectives of capacity building of ICT industry and increase the labor pool available. This project contributes to PSEB objectives of providing on job training to 3500 to young IT graduates out of which 500 seats are reserved for Baluchistan Province. 1023 interns have been placed in the IT/ITeS companies including 107 from Baluchistan in FY 2021-22.

e. **GDPR Compliance:** PSEB shall assist 50 IT & ITeS companies in ICT industry to acquire GDPR compliance through securing ISO27001 and ISO27701 certifications. PSEB shall bear 70% of the cost of the total certification, while selected IT & ITeS companies shall bear 30% cost of ISO27001 and ISO27701 certifications. In FY 2021-22, 20 companies have been selected for this certification, and consultancy of these companies is in progress.

f. **Establishment of 25 STPs in Pakistan and a IT park in Karachi:** PSEB would establish 25 Software technology Parks in KLI (Karachi, Lahore, Islamabad) as well as in secondary and tertiary cities and towns of Pakistan by converting public/private owned dilapidated or defunct office buildings, factories and warehouses to provide IT-enabled office space to IT & ITeS companies at affordable rates. Tenant companies will receive 100% internet and 25% rental subsidy during the first 12 months of the establishment of the STP throughout the concurrency of project life. PSEB would also establish a US$186m IT park in Karachi which would significantly contribute to the growth of IT industry in Pakistan. Establishment of STPs in secondary and tertiary cities will contribute in the development of the local economy. Already mentioned in Point #12?

g. **Marketing Export Project:** A Marketing Export project has been developed and would contribute significantly to project Pakistan as a viable and feasible destination for outsourcing and investment. The PC2 of the Project has been approved by DDWP.

h. **Capacity Building of Higher Education Institutes:** The project aims for 500 IT industry trainings of HEC's ICT faculties (TOT) and revamping of 200 courses in consultation with IT industry experts.

i. **Gaming & Animation industry Development:** The project has been approved by DDWP and would encompass marketing collateral development, media campaign and sponsoring of the overseas delegations of game development companies. Global Animation, VFX & Video Games Market was worth 261 billion in 2020 thereby making this segment a lucrative opportunity for Pakistan's tech and creativity sector.

j. **Standardization of IT Industry:** PSEB is in the process of certifying 100 call centers and software companies through reputed local/international firms. PSEB

has already engaged companies for ISO consultancy and auditing services, respectively. Second component of the project is to conduct an international research study titled, "Potential of IT/ITeS Industry of Pakistan" for which two consultancy firms have been hired. Third component of the project is to conduct a research study titled. "Impact of International Certifications for Pakistan IT/ITeS Industry" for which a consultancy firm has been hired to conduct the research study. Both research studies are expected to be completed during current financial year.

USF

Sr. No.	Item	Contracted/ Commitments	Completed/ Served/ Disbursed Achievements
1	Population	4.84 Million	9.6 Million
2	Projects	36	23
3	Subsidy	Over PKR 30.2 Billion	PKR 19.6 Billion
4	Total OFC Length (km)	3,598.25	3,267
5	UCs/ THQs/ Towns	336	378
6	Target Mauzas	4,980	4,516
7	Un-served Road Segments (km)	299.77	372.89
8	Milestones Achieved	-	84

Programs

1. NG- BSD Program

Through the Next Generation Broadband for Sustainable Development Program, USF provides voice and high-speed mobile broadband (at the minimum rate of 512 kbps) to the un-served and under-served mauzas across Pakistan. These projects have a notable role in the socio-economic progress of the people at the grassroots level and opening the doors of opportunities for marginalized communities.

In FY 2021-22, USF has completed 16 projects and provided access and connectivity to approximately 9.6 million people residing in un/under-served areas across the country. These projects include 7 small lots. It is noteworthy to mention that 4 small lots were contracted and completed within this year.

Moreover, USF has contracted 23 new projects worth over PKR 18.6 billion for the provision of voice and high-speed mobile broadband services to over 4 million people living in 4,300 mauzas of Sindh, Baluchistan, Khyber Pakhtunkhwa, and Punjab.

Significant progress was made in the following projects: Chagai, Chitral, DG Khan, Jaffarabad, Jhelum, Kech, Mastung, Panjgur, and Shikarpur. USF is committed to the timely delivery of its projects in all respects.

Contracted Projects

Sr#	Project (Lot)	Target Districts	Target Mauzas	Target Population	SP	Contracted Subsidy (PKR)
1	Small Lot B-5	Killa Saifullah	6	12,704	PTML	136,361,000
2	Attock	Attock, Rawalpindi	306	345,978	Jazz	308,924,164
3	Bannu	Bannu, Lakki Marwat	117	165,413	Jazz	201,531,669
4	Sahiwal	Okara, Pakpattan, Sahiwal	749	506,519	Telenor	681,284,742
5	Small Lot P-5	Gujrat, Sialkot	2	7,774	Telenor	23,880,315
6	Small Lot P-6	Toba Tek Singh	1	6,301	Telenor	12,727,210
7	Small Lot P-7	Vehari	1	6,243	Telenor	16,597,305
8	Kambar Shahdadkot	Kambar Shahdadkot, Larkana	359	494,968	Jazz	246,405,845
9	Naushahro Feroze	Naushahro Feroze, Shaheed Benazirabad	438	166,457	Jazz	451,645,455
10	Lasbela	Lasbela, Awaran	223	154,083	PTML	1,773,747,000
11	Mianwali	Mianwali, Khushab	186	376,518	Jazz	1,599,130,467

12	Small lot S-5	Naushahro Feroze, Khairpur	9	37,671	Jazz	17,506,346
13	Buner	Buner, Shangla	102	95,840	Telenor	2,037,810,752
14	Small lot P-9	Bahawalnagar	2	3,500	Telenor	49,593,870
15	Killa Saifullah	Killa Saifullah, Zhob	111	115,287	PTML	3,572,973,000
16	Jhang	Jhang, Bhakkar, Toba Tek Singh	722	1,035,188	Telenor	2,256,599,207
17	Small Lot P-10	Mandi Bahauddin	1	2,984	Jazz	2,260,194
18	Small Lot I-2	Islamabad	5	7,700	Jazz	11,023,710
19	Lodhran	Lodhran, Vehari	300	377,996	Jazz	1,189,934,567
20	Small Lot S-6	Sujawal, Tando Mohammad Khan, Hyderabad, Thatta, Badin, Umerkot, Tando Allah Yar	31	19,624	Telenor	366,416,006
21	Nankana Sahib	Kasur, Nankana Sahib, Sheikhupura	305	498,333	Jazz	468,897,727
22	Sialkot	Narowal, Gujrat, Sialkot	232	255,276	Jazz	624,802,198

| 23 | Loralai | Loralai | 143 | 82,953 | PTML | 2,600,000,000 |

2. BSD PROJECTS

During this year, USF completed the Kohistan project and enabled 3G connectivity in districts of Kohistan, Battagram, Kohistan, Haripur and Abbottabad under the Broadband for Sustainable Development Program. Implementation milestones were also achieved in Mohmand, North Waziristan, and South Waziristan projects.

3. NG-BSD FOR NATIONAL HIGHWAYS & MOTORWAYS PROGRAM

USF aims to provide voice and high-speed broadband data services to commuters on un-served road segments of National Highways and Motorways in Pakistan. The program is the first of its kind as it targets commuters and offers a unique feature of National Roaming, which means commuters will get continuous services in USF served areas, irrespective of their subscribed networks. Broadband connectivity on highways and motorways is broadening digital access, boosting the economy, and laying the foundation for an intelligent transportation system in Pakistan.

In the FY 2021-22, USF has provided seamless 3G/4G connectivity to commuters on un-served road segments of NH25 (RCD Highway), NH65 (Quetta –Jacobabad Highway), NH50 (Quetta-Sherani border) and NH70 (South-eastern border Barkhan–Qilla Saifullah City). The total covered road segment is approximately 1,025 km.

Under this program, 4 new projects were contracted worth approximately. Rs715 million to provide 3G/4G connectivity on approximately. 300 km of un-served road segments on M3 (Lahore-Abdul Hakim Motorway), M5 (Multan-Sukkur Motorway), M-14 (Hakla- DI Khan Motorway) and M-4 (Faisalabad-Pindi Bhattian Motorway).

Contracted Projects

Sr#	Project (Lot)	Target Un-served Districts	Target Un-served Road Segment (Km)	Service Provider	Contracted Subsidy (PKR)
1	Lot 7 (M-14)	DI Khan, Lakki Marwat, Mianwali, Attock, Rawalpindi	95.33	Jazz	375,356,871
2	Lot 8 (M-4)	Hafizabad, Faisalabad, Toba Tek Singh, Khanewal, Multan	70.67	Jazz	44,927,050
3	Lot 5 (M-3)	Sheikhupura, Nankana Sahab, Faisalabad, Toba Tek Singh, Khanewal	54.92	Jazz	140,238,734
4	Lot 6 (M-5)	Multan, Bahawalpur, Rahimyar Khan, Kashmore, Ghotki, Sukkur	78.85	Jazz	154,790,091

4. NG-BSD FOR TOURIST DESTINATION PROGRAM

USF has embarked on a new program that aims to provide voice and high-speed mobile broadband services in tourist destinations and their respective un-served / under-served routes to promote tourism in Pakistan. The provision of ICT services will help the visiting tourists, local citizenry and support them in income generating activities. It will also play a significant role in sending timely responses to the concerned agencies in case of an emergency. The tourist locations include Babusar

Top, Lake Saif Ul Malook and Sharan Forest in Mansehra district, Kumrat Valley in Upper Dir district, Mahodand Lake in Swat district and Galiyat.

Contracted Projects

Sr#	Project (Lot)	Target Un-served Districts	Target Un-served Route Length (km)	Target Tourist Locations	Service Provider	Contracted Subsidy (PKR)
1	Tourist Destination - K1	Mansehra, Abbottabad	97.95	23	Jazz	1,172,958,500
2	Tourist Destination - K2	Swat, Upper Dir	55.88	4	Jazz	883,360,268

5. NG-OF NETWORK AND SERVICES PROGRAM

Optic Fiber cable connectivity to Union Council is essential for bridging the digital divide in Pakistan and is considered integral across the globe for paving the way to provide ICT services. These projects will open avenues for access to digital apps and will guarantee their maximum utilization. Moreover, optic fiber will also help Pakistan in preparing for 5G. Our extensive fiber optic cable networks allow us to typically deliver redundant, end-to-end connectivity in un-served union councils of Pakistan.

During the year, USF has contracted 7 projects worth approximately. PKR 8.8 billion to extend 3,598 km of optic fiber cable into union councils of Sindh, Baluchistan and Punjab provinces. These projects will provide backhaul connectivity to 336 UCs of Pakistan. Furthermore, USF also completed two projects, and laid approximately. 3,200 km of optic fiber cable and connected approximately 378 UCs across the country.

Contracted Projects

Sr#	Project (Lot)	Target Un-served Districts	Target Un-served UC/Towns	Target OFC Length (km)	Service Provider	Contracted Subsidy (PKR)
1	OFC-UC-PB-Lot 8	Mianwali	45	390.24	PTCL	614,000,000
2	OFC-UC-SD-Lot 10	Dadu, Jamshoro	70	743.3	PTCL	1,429,000,000
3	OFC-UC-SD-Lot 12	Hyderabad, Badin	67	787.46	PTCL	1,988,914,000
4	OFC-UC-SD-Lot 11	Larkana, Kambar ShahdadKot	70	660.65	PTCL	1,610,000,000
5	OFC-UC-BL-Lot 13	Gwadar	21	397	PTCL	1,995,482,850
6	OFC Small Lot 3	Islamabad, Haripur	6	106.6	PTCL	235,000,000
7	OFC-UC-PB-Lot 7	Layyah, DG Khan	57	513	PTCL	950,000,000

Milestones & Achievements

1. **Contract Signing of Optic Fiber Cable Projects in Naushahro Feroze, Shaheed Benazirabad & Haripur Districts - 12th July 2021 – Karachi Chief Guests:** President of Pakistan, Dr. Arif Alvi, Federal Minister for IT and Telecommunication, Syed Amin Ul Haque, Federal Secretary IT, Dr. Sohail Rajput.

2. **Contract Signing Ceremony of High-Speed Mobile Broadband Projects in Nowshera, Mardan, Swabi, and Charsadda Districts of Khyber Pakhtunkhwa - 12th August 2021 – Islamabad Chief Guests:** Federal Minister for IT and Telecommunication, Syed Amin Ul Haque, Federal Minister for Defense, Pervez Khattak.

3. **Contract Signing Ceremony of High-Speed Mobile Broadband Projects in Chagai and Nushki Districts of Baluchistan- 15th September 2021– Islamabad Chief Guests:** Federal Minister for IT and Telecommunication, Syed Amin Ul Haque, and Chairman Senate, Sadiq Sanjrani.

4. **Contract Signing Ceremony of High-Speed Mobile Broadband Projects in Kambar Shahdadkot, Larkana, Naushahro Feroze & Benazirabad – 7th January 2022 – Karachi Chief Guests:** Federal Minister for IT and Telecommunication, Syed Amin Ul Haque, and Federal Minister for Planning and Development, Asad Umar.

5. **MWC Barcelona GSMA Event - 2nd March 2022 Attendees:** Federal Minister IT & Telecommunication, Syed Amin Ul Haque, CEO USF, Haaris M. Chaudhary, Huawei Delegates, MD PSEB, Osman Nasir, Member IC, Ajmal Awan.

6. **Contract Signing Ceremony of Optic Fiber Cable Projects in Dadu, Jamshoro, Larkana, Kambar Shahdadkot, Hyderabad and Badin Districts - 2nd June 2022 – Karachi Chief Guests:** Sindh Chief Minister Syed Murad Ali Shah and Federal Minister for IT and Telecom Syed Amin-Ul-Haque.

7. **International Recognition by GSMA.**

8. **Formulated USF Pillars to help set high standards for our business practices.**

9. **Defined USF Brand Guidelines and Code of Conduct.**

10. **Increased female participation by 15% in the workforce.**

11. **Formed Risk Management Committee.**

12. **Launched a new website.**

NATIONAL TELECOMMUNICATION CORPORATION

Background

The Pakistan Telecom Corporation (PTC) was split into five entities such as PTCL, NTC, PTA, FAB and PTET through the Pakistan Telecommunication (Re-Organization) Act, 1996, in accordance with implementation plan for deregulation of Telecom sector.

As such NTC a Fixed Line operator in the Public Sector was then established through enactment with a specific mandate.

NTC Mandate

NTC has been legally mandated for provision of telecommunication services within Pakistan to the armed forces, defense projects, Federal Government, Provincial Governments or such other Governmental agencies or Governmental institutions as the Federal Government may determine.

Mission

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

Strategic Performance

Accordingly it aligned itself with International Standards and deployed emerging technological platforms. NTC started developing its telecom network, built up state-of-the-art switching system and a consolidated platform for ICT services. At present, NTC has extended its ICT infrastructure using emerging technologies including Fiber Optic Network Systems, metro networks (1,395Km) and Long-Haul (4,300Km) with 462 exchanges equipped with IP based Next Generation Network (NGN) technology at 99 Districts/Cities throughout Pakistan. The total line capacity of switching network is 379,142. NTC has also established the Data Center Infrastructure through its limited resources with the design to host only govt. websites, emails services and some applications like e-office suit for Government as part of digitalization of Government business processes. NTC managed the launch of the Prime Minister's office emergent digital initiatives such as HELPLINE 1166, Track and Trace, City App, Auto Survey along with Invest Pakistan, e-Cabinet Services, Immigration and Passport application, PM Delivery Unit (PMDU), Pakistan Citizen's Portal, YARANEWATAN, BISP, LMIS for Ministry of Health etc.

Operational Performance

Services Portfolio

Telecom Services	Data Network Services	Transmission Services
• Basic Telephony	• Data Center Services	• Dark Fiber
• ISDN-Integrated Service Digital Network	• Broadband Internet Access	• Media Junction
• BRI-Basic Rate Interface	• Intranet Solutions	
• PRI-Primary Rate Interface	• Customized Data Solutions	**Co-Location**
• Supplementary Services	• Web Hosting facility	• Space (Open, Covered), Dishes/Antennas on NTC Towers and AC/DC Power Supply
• Network Solutions for valued subscribers	• Virtual Private Networking (VPN)	• Servers
• M2M	• Leased Line Services	
• P2P	• Mail platform	
Value added Services:	• Video Conferencing facility	**Around the clock Call Center Services**
• Caller line identification	• Robocall	
• Call waiting	• 3G/4G Services	
• Call transfer	• Skype for business	
• Wakeup timer	• SMS gateway	
• Don't disturb	• Co-Location	
• Abbreviated dialing	• DDP, ISDN	
• Switched Hotline	• Radio/Wireless Networking Solution	
• Three Parties audio Conferencing		

Subscribers Growth

The overall subscriber's growth of Telephone and Broadband during the year is as under:

Telephone

Regions	Presence as on 30th June, 2021	Presence as on 30th June, 2022
North	64326	68154
Central	45922	47655
South	41196	43273
Total	**151444**	**159082**

Telecom & Data Services During COVID-19 Crises

NTC has also diligently maintained the COVID-19 Helpline 1166, COVID related websites and mobile Applications of GoP and NCOC. Video Conferencing facilities round the clock to government Hospitals/ offices/ Corona Control and Isolation Centers throughout Pakistan, conducting Video Conferencing sessions with PM House, President House and other associated departments as required.

Pakistan Emergency Helpline (Pehel)

NTC has established and operatinolized the PEHEL a universal emergency telephone number (911) being sponsored by Ministry of Interior on the directions of the Federal Government.

The Helpline-911 is providing one window access to all emergency services such as fire brigade, police, health assistance, disaster recovery, motorway police etc.

Under the project the person in need dials only 911 and the call centre forwards the call to relevant government agency for mobilizing the dispatch setup. The Pakistan Telecommunication Authority has allocated the code 911 to the PEHEL.

In the first phase control rooms with more than 300 call agent seats have been provided all across the country including GB and AJK as per need and operate round the clock.

The Project is not only facilitating the citizens in distress/emergency but also created around 900 job opportunities for youth including both genders.

NTC Services for NDMA

The NDMA has been provided required Telecom & Data, Call Centers and Video Conferencing facilities. For this purpose, fiber-based connectivity has been deployed for un-interrupted services around the clock.

Financial Performance

During the F.Y 2021-22, NTC made a financial profit of Rs. 429.43 Million upto 31st May, 2022 before taxation. NTC is not a Commercial entity, however, it endeavors to maintain its sustainability with the given restricted mandate and limited resources.

Development Activities & ADP Utilization

To meet the Government needs more than 76% progress has been achieved in ADP 2021-22. The same is made possible by adopting proper projects Management practices, timely decisions and proactive behavior of its HR.

Major Ongoing Development Activity

Following are the major ongoing projects for F.Y. 2021-22 of NTC for extending and upgrading its Telecom, IT and Cyber Security Infrastructure:

- Expansion of National Data Centre at Islamabad
- TDM to IP Migration of MSU Cantt Peshawar, Upgradation of M/W Links from Peshawar to Timergara along with laying of OFC/UG cable networks.

Future/Planned Projects

Following development projects have been initiated/planned for Financial Year 2022-23.

NTC Funded Projects

- Installation and Commissioning of Session Border Controller in Central Region at Lahore.
- Up-gradation / Replacement of Session Border Controller Installed at Islamabad.
- Expansion of the Secondary OSP Network at Different Sites at Islamabad.
- Installation of Mini-MSAG alongwith Laying of Underground Cable Network at Commissioner Office & Gomal Medical College D.I. Khan.

- Installation of MSAG alongwith Laying of Optical Fiber & Underground Cable Network at Small Industrial Development Board (SIDB), Benevolent Fund Building & DG Commerce Office Rano Garhi, Peshawar.
- Installation of Mini-MSAG alongwith Laying of Underground Copper and Optical Fiber Cable Network at Bacha Khan Medical College Mardan.
- Up-gradation of Optical Fiber Cable from 12 to 96 Fiber Core Ring VVIP Area Islamabad.
- Installation of MSAG at MSU KRL Rawalpindi for TDM to IP Migration of ZTE Exchange.
- Provision of ICT Services to University of Swat and Peshawar High Court Mingora Bench.
- Installation of GPON OLTs along with laying of FTTH Optical Distribution Network (ODN) at PMO & HIT, Taxila.
- Installation of Mini MSAGs along with Laying of OFC & UG Copper Cable Network at CPO Office Peshawar & KAPRA Office, ANF Office Hayatabad.
- Provision of Professional Fire Suppression System at Green Exchanges NTC RHQs (North Building F-5/1, Islamabad and MSU Cantt Rawalpindi).
- Installation of GPON OLTs along with laying of FTTH Optical Fiber Cable Distribution Network ODN at City Police Office (CPO), Police Lines Rawalpindi Cantt.
- Under TDM to IP Migration replacement of Zxj-10 Exchanges along with Laying of OFC & OSP Network with Multi Services Access Gateways/Networks.
- TDM to IP Migration Multan and Dera Ghazi Khan.
- TDM to IP Migration at Gujranwala Gujrat and Daska.
- TDM to IP Migration of Faisalabad Airport, Sargodha, Bhalwal, Samundari, Jhang, Chiniot, Gojra, Joharabad & KCP along with Establishment of DRS Links between Sargodha - Jauharabad-KCP and Deployment of Telecom Infrastructure at Jaranwala, Khushab and Ghulam Muhammadabad Faisalabad.

Projects for Pakistan-China Information Technology Joint Working Group under CPEC

- Deployment of Submarine Cable between Karachi and Gwadar along with Cable Landing Stations at both sites.

- Establishment of Internet / Cloud Exchange Point at Karachi.
- Replacement /Up-gradation of NTC's Long Haul DWDM Core Transmission Equipment along with Laying of Optical Fiber Cable Network along with Eastern and Western CPEC Routes.
- Establishment of Security Operations Centre (SOC) in NTC Data Center, Islamabad.

SPECIAL COMMUNICATIONS ORGANIZATION (SCO)

General

1. During last 46 years of continued devotion, SCO has been able to extend comprehensive Communication and Information Technology (C&IT) services to the people of the most harsh terrain of AJ&K and Gilgit Baltistan. During this journey, SCO has always strived to further improve the C&IT eco system. Moreover, quality of C&IT services being extended to the local populace are comparable to those being provided in other parts of the country. C&IT is an important facet of infrastructure of any country, especially in developing countries, as it escalates the growth process. Development in the telecommunication sector not only helps individual's social uplifting but also helps in increasing the productivity both in public and private sector.

2. Growth in SCO subscribers during 2021-22 is highly encouraging in the face of cut-throat competition with multinational cellular giants under deregulated telecom environment. Today, SCO stands out as the largest telecom network / service provider equally focusing on urban and rural areas development. It has a unique distinction of providing all brands of telecom services from voice to data under one platform, i.e Landline, GSM, 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 Microwave & Satellite networks and launched NGMS 3G / 4G services in its area of responsibility. However, Implementation of projects in 2021-22 have been severely affected due to stretch caused by COVID-19 pandemic. SCO extensive footprint has cutting edge innovative solutions that has improved network coverage and capacity across different areas of AJK and GB. SCO has always endeavored for connecting people in remote areas by accelerating cellular and data connectivity growth and deepening the engagement with customers while driving the network and customer centric strategy based on following:-
   a. Expansion of 3G / 4G cellular services in whole area of responsibility including KKH.
   b. Compatibility / adaptability with futuristic 4.5 / 5 G techniques.
   c. Provision of cellular services along major highways (especially CPEC routes).

d. Migration from traditional DSL to Fiber to Home in major cities.

e. Setting up of Technical Training Institutes, Technology Parks and Incubation Centers to ensure digital inclusivity of under developed areas.

f. Transformation of legacy power systems with Hybrid / green energy system.

g. Undertake strategic communication projects like Pak China connectivity.

h. Establishment of regional Data Centers to promote Digital Pakistan Vision.

i. Upgradation of transmission network to 100 G Dense Wavelength Division Multiplexing (DWDM) technology.

3. **Achievements during FY 2021 - 2022** Some of the milestone achievements are appended below:-

   a. **Network Deployment in AJ&K and GB**

      I. SCO is providing telecommunication services to 4.5 Million people of AJ&K and 1.48 Million of GB. The tele-density in GB is less as compared to AJ&K due to low population density of the area, however SCO has reached out to far-flung underserved and un-served areas. SCO is the only organization providing all types of telecom facilities to its users. Currently, SCO is serving over 2.3 M users with details appended below:-

Serial	Service	Subscribers Type
(a)	Mobile services (GSM / NGMS)	**2,412,225**
(b)	Fixed Line Exchanges (PSTN)	**57,106**
(c)	DSL (Digital Subscriber Line)	**17,471**
(d)	Wireless Local Loop	**2400**
(e)	Virtual Private Network (VPN)	92 (For Corporate Customers)
(f)	Digital Cross Connect (DXX)	48
(g)	GPON	16,122
	Total	**2,505,464**

      II. For provision of robust and redundant communication facilities, SCO maintains sizeable infrastructure across AJ&K and GB. Details are as under:-

Serial	Service	Subscribers Type
(a)	Mobile services (GSM / NGMS)	**2,412,225**

(b)	Fixed Line Exchanges (PSTN)	**57,106**
(c)	DSL (Digital Subscriber Line)	**17,471**
(d)	Wireless Local Loop	**2400**
(e)	Virtual Private Network (VPN)	92 (For Corporate Customers)
(f)	Digital Cross Connect (DXX)	48
(g)	GPON	16,122
	Total	**2,505,464**

b. **Fixed Line Subscribers:** Fixed line market in mainland Pakistan as well as in AJ&K and GB continues to shrink 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 subscriber stood at 38,375 in AJ&K as compared to the last year which was at 40,707, showing a declining trend at approximately 5 % per year while in GB the subscriber count stood at 15,117 in 2020 as compared to the last year 15,159 showing a negative trend. It is expected that after deployment of GPON project phase-I by SCO in 9 major cities of AJ&K and GB, the negative trend will improve in both the regions. SCO will be additionally covering another 30x cities/towns of AJ&K and GB through GPON phase-II project by June 2022.

c. **Broadband Subscribers:**

I. **Fixed Broadband:** DSL dominates the fixed broadband market. Its market share has been rising over the past five years. Mobile broadband subscribers continuously on the increase while fixed broadband growth is comparatively less. Pakistan has seen a mobile broadband penetration at 27.2% while fixed line broadband penetration is at 1.1%. The same trend seen in AJ&K and GB where mobile broadband is on the rise. DSL subscribers are improving which stood at 25,539 in 2021 while the same was 22,471 in previous year showing a positive trend. The fixed broadband penetration with respect to the population stands at 0.36% as compared to Pakistan telecommunication market, which stood at 0.82%. The numbers will be further increased with the adoption of GPON technology, currently undergoing on fast track basis.

II. **Mobile Broadband:** The mobile broadband is on the rise since the launch of 3G/4G services (August 2018) in AJ&K and GB area. The current SCO mobile broadband subscribers stand at 1,357,491 i.e. 81.83% of the total active subscribers, which is encouraging. The mobile broadband subscribers have been increased with the completion of of SCO NGMS Phase-lll. Currently 501x BTS sites are operational including 20 x 2G sites, 101 x 3G sites and 380 4G sites.

d. **Cellular Subscribers**
   I. **AJ&K** SCO is one of the leading telecom operators in AJ&K with 206 BTSs installed with active subscriber.
   II. **GB** SCO is leading in terms of subscribers and BTSs installed in GB region. Total number of installed SCO BTSs are 295 and subscriber base stands at 1 Million.

e. **Revenue** Revenue realized by SCO is deposited in Government exchequer through Federal Consolidated Fund (FCF). In, FY 2021/22, SCO has deposited Rupees 4.184 B in Government exchequer. Details is below:-

Serial	Years	Target (Rs in M)	Gross Revenue (Rs in M)
(1)	2018-2019	2,500	3,362
(2)	2019-2020	2,300	5,474
(3)	2020-2021	2,500	5,094
(4)	2021-22	4,200	5.477

4. **Progress of Development Activities**
   a. **Establishment of SCO Technical Training Institute (STTI) at Gilgit:** Project was for Establishment of SCO Technical Training Institute was approved, however, the project has been dropped / closed by GoP due to scope matching with STP & Incubation Center in the area.
   b. **Expansion of Broadband Internet Services in AJ&K and GB:** SCO is providing ICT services in AJ&K and GB. With growing demand of broadband services coupled with high speed data, the existing infrastructure is unable to fulfill the requirements of subscribers, due to dependence upon old PSTN and

Copper (Outside Plant) Networks. A project for provision of Triple Play Services (voice, data and video) initially in 9 major cities of AJ&K and GB was been approved by Govt. Project has been completed and 15,000 connections have been provided to the locals.

c. **Expansion of Cellular Services in AJ&K and GB Phase-III:** Project for expansion of cellular services at tourist spots and in un-served / under-served areas of AJ&K and Gilgit Baltistan was approved by CDWP on 6 August.

d. **Upgradation of Transmission Network in AJ&K and GB:** Project is proposed for laying of 855 Km OFC and up-gradation of transmission networks upto 100 G in AJ&K and GB for future requirements of 3G/4G/5G and triple play services as well as for other mobile operators. Contracts for installation of installation of Optical Transmission Network (OTN) and Deployment of OFC have been awarded, deployment of OFC and installation of equipment is in progress, 350 km OFC has been deployed.

e. **Expansion of Broadband Services in cities & towns of AJ&K and GB:** The fixed line technology migrated from Time Division Multiplexing (TDM) to Internet Protocol (IP). Phase-I of the project for provision of Multi / Triple Play Services in 9 major cities of AJ&K and GB is being implemented. A project for provision of Multi / Triple Play Services in another 30 major cities of AJ&K and GB was approved by GoP. Deployment of access network and installation of equipment is in progress, project will be completed by 30 June 2023.

f. **Upgradation of TDM Microwave with IP Based Microwave:** Project for Upgradation of existing TDM based backhaul microwave network (63 E1s and 620 Mbps) in GB with high-capacity IP based backhaul microwave radio networks (up to 2 Gbps) to enhance SCO backbone connectivity was approved by DDWP on 6 April 2020. After hiring of consultant contract for installation / up-gradation of microwave links along with civil work has been awarded on turnkey basis. Installation of equipment is in progress. Project will be completed by 30 June 2023.

g. **Protection and Upgradation of Pak-China Phase-I:** A project for protection and upgradation of Pak-China OFC Phase-I by Laying of 270 Km OFC from Dassu to Chilas was approved. After hiring of consultant, contracts for

installation / up-gradation DWDM and deployment of optical fiber from Dassu to Danyore have been awarded, WMS and Transmission equipment have been installed and operational. Optical Fiber Cable are being deployed. Project will be completed by 30 June 2023.

h. **Establishment of Data Centre for providing Cloud Based Services:** A project for establishment of SCO Data Centre for cloud based services in AJ&K and GB capable of providing infrastructure As-A services and backup As-A services to populace of AJ&K and GB at Rawalpindi was approved by DDWP on 6 April 2020. Contracts have been awarded for construction of infrastructure and installation of public cloud. Construction of infrastructure is in progress. Project will be completed by 30 June 2023.

i. **Hybrid Power Solution (Solarization) in AJ&K and GB:** ICT services will be provided round-the-clock to customers in remote areas of AJ&K through availability of uninterrupted 24/7 telecom services to customers in AJ&K. Scope of project is Hybrid Power Solution (730 KW) of 200 remote telecom sites of AJ&K and GB through installation Photovoltaic System, Battery Bank, Generator Sets, Charge controller module and Power management Modules. Contracts has been awarded for installation of hybrid power system, delivery of equipment and construction of civil work is in progress.

5. **Approval of New Projects:** Following new projects (PC-I & PC-II) have been approved by DDWP meeting held on 21 June 2022: -

a. **Expansion of GPON FTTH Services in Existing Cities:** PC-I of the project approved for expansion of triple play services in existing 3 cities of AJ&K and up-gradation of IP / DR Core.

b. **Up-gradation of Optical Transmission Network:** PC-II of the project approved for survey, consultancy and feasibility study for expansion and up-gradation of Optical Transmission Network of AJ&K and GB.

c. **Implementation of Critical Telecom Data and Infrastructure Security Regulations (CTDISR):** PC-II of the project approved for survey, consultancy and feasibility study for Implementation of Critical Telecom Data and Infrastructure Security Regulations.

TELECOM FOUNDATION

Introduction

Telecom Foundation's vision of 'Transforming Communities' underlines bringing changes for better in the communities. These transformations are brought about through implementation of:

1. Telecom Foundation Schools

State of the art teaching methods to the students from the underprivileged parts of the society.

2. Institute of Professional Trainings

Professional trainings on technical skills and handholding the trainees leading to landing a job and ensuring sustainable income through employment. This can be extended to export of human resource to the world, through its Overseas license.

3. Network Development through laying Optic Fiber in the country

Development of Optic Fiber Networks that would enable the communities in accessing the internet at better speeds to make their earnings and contribute to the world through their skills.

4. Operations through its subsidiary organizations

i.   Telecom Foundation Pipes manufacturing
ii.   Pak Datacom Limited

5. Development of New Sustainable Development Goals Oriented Business

New Business initiatives that have been developed by Telecom Foundation in partnership with Gallup Pakistan in order to achieve the UN Sustainable Development Goals Targets of Pakistan:

i.   Smart Cities & IOT
ii.   Green Construction
iii. Green Energy
iv.   IT Development

Performance & Achievements

Being a welfare organization, Telecom Foundation has taken remarkable initiatives through its various initiatives that have been undertaken to be developed and expanded in each of the areas listed above.

1. Telecom Foundation Schools

As a forefront of the welfare mandate give to Telecom Foundation. Schools are operational in 12 cities across the country, that have been serving children from the underprivileged communities for over 20 years and thereby reducing the inequality gap between the 'haves' and the 'have nots' of the society. Telecom Foundation schools host around 3000 students from the 12 schools being run in different cities of Pakistan at subsidized fee. Telecom Foundation has initiated a SEED (Schools Expansion, Enhancement & Digitalization) project whereby it has undertaken several activities like

i.   Expansion to two new schools in the underserved areas of Karachi and Hyderabad.

ii.   Telecom foundation has launched the first Google CS-1 under collaboration of the Ministry of IT&T, where its underprivileged school children in Karachi, Lahore and Islamabad have been taught how to code and develop software programs which can enable them to become part of the digital economy by earning from their coding skill. Next phases of the CS-1 program are being carried out on the remaining schools of Telecom Foundation. This initiative was taken to provide professional education to the children going to class 4 and above, enabling them to develop coding skills that will enhance their professional skill, leading to income generation.

2. Institute of Professional Training (IPT)

Telecom Foundation has trained more than 37,000 professionals in Pak Air Force, Pakistan Navy, Police, Pak Army, NTC, Atomic Energy Commission, CDA, PTCL, NDC, Pakistan Computer Bureau, I.L.O, LT Engineering Services, Pak Aeronautical Complex Kamra, etc. In the post Covid pandemic, Telecom Foundation is undergoing transformation of its training institutes that will cater to online courses

directed in developing the Pakistani nation for generating its income through online employments and earnings.

The main IPT institute was sealed by CDA in 2019 due to an ongoing dispute on the ownership of plots in sector I-9 Islamabad. Despite the inadvertent closure, IPT operations were kept active in the small plaza in I-9 Markaz.

Under the able management of TF it was renamed from Manpower and Training (MNT) to IPT, New Development Plans were made and the entire unit was restructured.

Currently IPT is devising new training plans in collaboration with Google and deploying state of the art training equipment.

Recently IPT has procured state of the art splicing machines for training on the GPON Optic Fiber Network, backed by the Overseas License, TF is geared to provide trained HR to the world.

3. Network Development through laying Optic Fiber in the country

i. PTCL Frame Contract for Development of 1.4 Million GPON lines

Telecom Foundation has a running Frame Agreement with PTCL for development of Optic Fiber Network for 1.4 Million GPON turnkey projects. The projects Undertaken till date under this Frame Contract are:

b. Hyderabad Latifabad GPON project (Completed)
c. Sialkot Cantt GPON Project (In progress for ROW acquisition by PTCL)
d. Sialkot SITE GPON Project (In Progress – Survey Completed)
e. Quetta Saryab Road GPON Project (In Progress for ROW)

ii. Orange Line, Metro Project Lahore

b. Laying Re-routing of UG and OFC Network along with Orange, Line Metro Project Package-I, Lahore,
c. Laying Re-routing of UG and OFC Network along with Orange, Line Metro Project Package-II, Lahore,
d. Laying of OFC for Proposed MSAG at Audit & Accounts, Training Academy Grumangat Road Lahore.
e. Laying of OFC/ OSP Network at LDA Complex Lahore.

4. Operations through its Subsidiary Organizations

i. **Pak Datacom Limited (PDL)**

Pak Datacom was founded by Telecom Foundation and it commenced its operations in year 1994. The company specializes in long haul Data Communications services globally. PDL pioneered VSAT network in Pakistan, Bangladesh and Afghanistan. PDL has the honour to represent two Of the world's Forune 500 companies in Pakistan namely British Telecom and Orange Telecom. "In the 2022 financial year the Company continued to operate in very challenging conditions. High inflation, depreciation of the Pakistani rupee against the US dollar, and tightening of monetary policy and fiscal policy, were the hallmarks of the financial year. Nevertheless, despite the Company carrying out operations in such challenging conditions, during the year it achieved revenues of Rs. 1.239 billion compared to Rs. 897.207 million last year, up by Rs. 342 million. The net profit after tax increased from Rs. 15.367 million to Rs. 231.298 million. The net profit translated into Earnings per Share (EPS) of Rs. 19.50 as against Rs. 1.30 (restated) of last year. These phenomenal financial results of the Company were only possible due to:

b. The commitment of the management and the dedicated efforts of the employees under the guidance of the Board to meet the targets that had been set out in the 5-year Strategic Master Plan.

c. The management and the employees continuing to maintain strong focus on the Company's niche market.

d. The management and the employees being able to adapt to challenging circumstances and proactively taking necessary timely measures to complete ongoing communications projects while keeping costs contained."

ii. **Telecom Foundation Pipes**

TF Pipes is a public Ltd industry with PTCL and Telecom Foundation as their shareholders and its core technology is Polymer Pipes since 1992. The unit was sealed by CDA in 2019 due to an ongoing dispute on the ownership of plots in sector I-9 Islamabad. After the closure of the premises, the work had stopped and

the employees were laid off. The matter is close to resolution as the Ministry of IT&T has claimed the legal status of the plots and has asked CDA to issue notification for resumption of operations.

Despite the inadvertent closure of the premises, the status of the industry has been kept intact. Business development and research work is ongoing whereby, TF Pipes has achieved the following during the current year:

a) Five Year Master Plan in line with the parent company's Vision
b) Pursuing Tax refunds from FBR through Banking Courts and IHC
c) Feasibility Report from Gallup Pakistan for reviving and thriving operations
d) Strategic Restructuring in line with the Five-Year Master Plan
e) Winning Orders for delivery of products from PTCL
f) R&D on development of Composite Handholes

5. New Business Activities

Telecom Foundation is currently registered with Pakistan engineering council. Telecom Foundation undertake business and commercial ventures mostly in cable laying projects to generate adequate resources to carry out its welfare activities. Despite general recession prevailing in the country. TF has been able to procure some projects through competitive bidding during the last two years. Brief details of projects obtained / undertaken by TF is given below:

The planned and expected funds through various new projects will help materialize this vision and aim of the new foundation management.

The sustainable business that are in line with the sustainable development goals are:

i.   Green Construction
ii.   Smart Cities & IoT
iii. Renewable Green Energy
iv.   IT development

PAKISTAN TELECOMMUNICATION EMPLOYEES TRUST

Progress & Achievements

Pakistan Telecommunication Employees Trust (PTET) is one of the larger pension funds disbursing pension to around 40,000 pensioners across the country. PTET is continuously achieving the Information Technology milestones of automation, digitization and development of secured software. Following are the noteworthy achievements:

1. Pension Management System

For secure and automated pension disbursement, an in-house software Pen-Pro was developed and deployed at Head Office. This facilitates in system-generated pension disbursement list, routine backups and disaster recovery plans.

2. Pension Through Banks

Trust has successfully completed the drive to shift 100% pensioners from Pakistan Post to banks. A special project was started in second quarter of FY 2021. The in-house teams have completed this project and achieved the target of shifting all the pensioners to banks.

3. Faster Communication With Pensioners

- PTET website has been revamped to contain important view-only information in Urdu & English
- Universal Access Number (UAN) helpline is installed with dedicated staff available in office hours
- A text message facility has been initiated for better communication with pensioners.

4. ISO Certification

The Trust has obtained ISO 9001:2015 certification. This is in continuation of our strategy to bring operational excellence and is a recognition of our standards in line with international best practices.

5. NADRA's VeriSys System Installation

This has facilitated in verification of pensioners' CNICs, conversion to family pension and data cleansing.

6. Computerized Pension Books

For fresh pensioners we have started issuing computerized pension books in line with process automation.

7. Digitization of Records

Pension payment records have been digitized in the form of scanned copies.

ELECTRONIC CERTIFICATION ACCREDITATION COUNCIL (ECAC)

ECAC has been established by the Federal Government of Pakistan under Section-18 of the Electronic Transactions Ordinance (ETO), 2002 as an autonomous body and operates under the Ministry of Information Technology & Telecom (MoITT), 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 (wet) signatures. ECAC is mandated to grant accreditation to any Certificate Service Provider who intends to work as an Accredited Certificate Service Provider. All companies, individuals or firms engaged in the business of electronic services are required to get themselves accredited with ECAC in their own business interests. The Certificate of Accreditation aims to make electronic transactions more secure, more reliable and worldwide acceptable.

Vision

A conducive environment for electronic transactions through trust, legal and stringent policy framework in the Country.

Mission

Establishing trust and acceptability in digital transactions.

Objectives

1. To facilitate secure E-Commerce.
2. To ensure security of the E-Commerce / E-Governance through enforcement and regulation of Encryption/PKI (Public Key Infrastructure).
3. To establish TRUST through use of Accredited Digital Signatures.
4. To advise all Regulators and Appropriate Authorities such as SBP, NADRA, SECP, FBR, PTA, ECP, etc. using Digital Identity for integrity of electronic transactions as per guidelines spelled out in ETO-2002 and global best practices.

Role & Functions of ECAC

ECAC being a regulatory body have enforcement powers to regulate electronic transactions in Public and Private sectors. It grants and renew certificates issued to Certification Service Providers (CSPs) including their cryptography services and security

procedures. Moreover, ECAC also endeavors for keeping the nation abreast with the ever-changing trends of e-commerce while protecting the interests of related stakeholders.

ECAC understands the importance of international collaborations for development of internationally acceptable regulations and mechanisms for secure electronic transactions. In the context, ECAC's delegation participated in-person in 62nd UNCITRAL (United Nations Commission on International Trade Law) Session held in Vienna, Austria for the first time. Pakistan's representation depicted a strong commitment to develop a strong platform to secure and protect the Electronic Transactions rapidly growing under Digital Pakistan policy of the Ministry of IT & Telecom (Govt. of Pakistan).

The inaugural session was attended in person by several nations including Pakistan, India, Russia, Algeria, Qatar etc. and rest through virtual participation. The sessions focus was on reliability of 'IdMS' (Identity Management System) and TSPs (Trusted Service Providers) consisting of managing identity proofing or electronic identification and verification of persons in electronic form. Taking benefit from the platform, ECAC included the ongoing latest subject of Identity Management & Cross Border Recognition in the amendments of ETO-2002.

Establishment of National Root Certification Authority

Accreditation of Certifications Service Providers (CSPs), is one of the main functions of the Council, to provide legal sanctity to digital signatures based upon the principle of equivalence to handwritten (wet) signatures. For effective implementation/ enforcement, creation and management of PKI (Public Key Infrastructure) is in process and is expected to be operational in August 2022.

Members of the Council

Federal Government appointed the following Council members on 30th November 2021:

1. Engr. Miraj Gul (MD NTC)   Chairman
2. Brig. (Retd.) Shahzad Sami (Zong)   Member
3. Mr. Ghulam Mustafa (Advocate)   Member
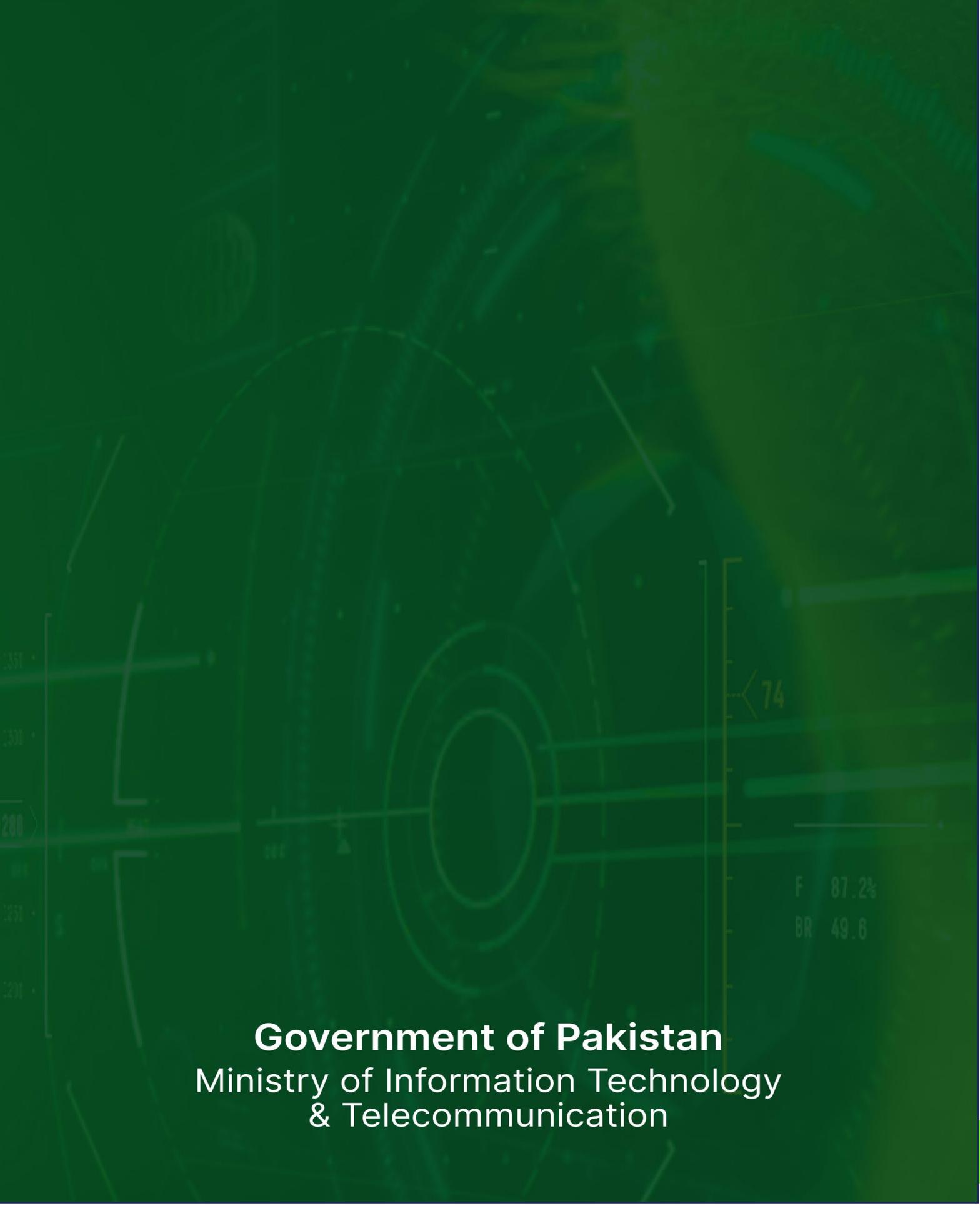4. Mr. Abdul Wahid Khan (Zigron)   Member

Achievements During FY 2021-22

1. **Revision of Regulations:** Following draft regulations of ECAC, for efficient functioning, have been finalized and are in process of approval:
   - The Certification Service Provider's Accreditation Regulations.
   - ECAC Information Security Auditor's Registration Regulations.
   - ECAC Service Provider Audit Regulations.
   - ECAC Service Regulations.
   - ECAC Business Regulations.
   - ECAC Crypto Apparatus Accreditation Regulations

2. **Registration of Information Security Auditors:** After following the prescribed procedures stated in the ECAC Information Security Auditors Registration Regulations, the Council registered/ renewed M/s Risk Associates as an Information Security Auditor w.e.f 3rd December 2021.

3. **Recruitment:** HR recruitment process of ECAC of 15 positions has been completed in the Financial Year 2021-22 for full-time availability of man-power for day-to day ECAC operations. ECAC at present is undertaking its functions with a team of around twenty-four (24) officers /officials.

4. **Launch of New ECAC Website:** ECAC is about to launch its new website https://www.ecac.gov.pk The new website will provide a secure user-friendly interface for all updated information regarding ECAC.

The website provides details about the ECAC Mandate & functions, Information regarding Council & Executive Management, ECAC Laws & Regulations, Tenders, Job Opportunities, ECAC Clients, News & Events, etc.

Future Endeavors-FY 2022-23

ECAC is going to enter a new phase after the operation of National Root CA and will start services of PKI by end of 2022. Following are the planned activities of ECAC for the year 2022-23, along with recruitment at a few important positions for PKI operations, registration of more auditors, accreditation of potential CSPs, training and certifications of its officers and conducting seminars to engage all stakeholders:

Government of Pakistan
Ministry of Information Technology
& Telecommunication