



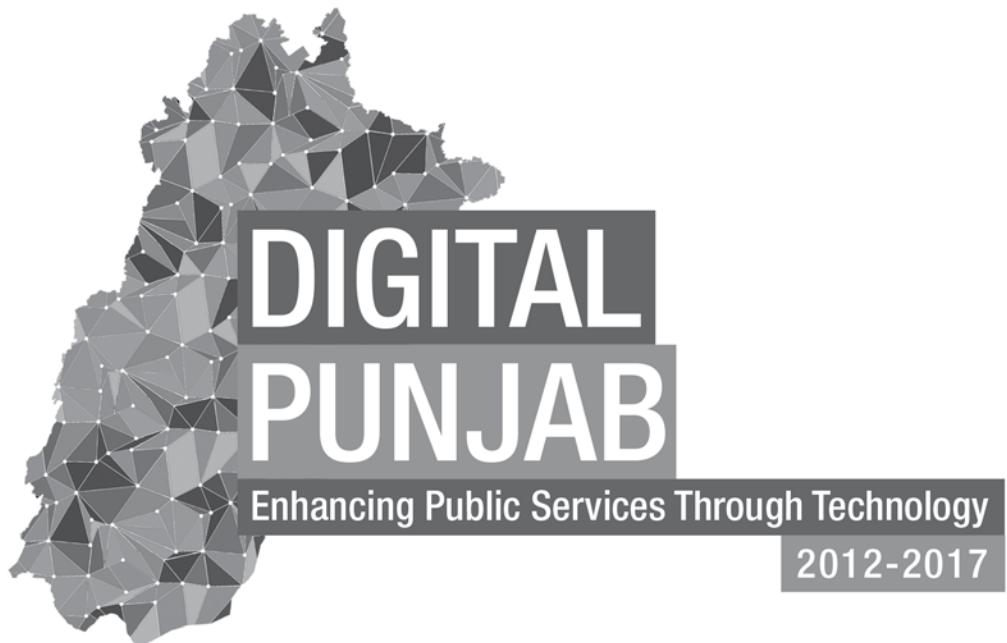
# DIGITAL PUNJAB

Enhancing Public Services Through Technology

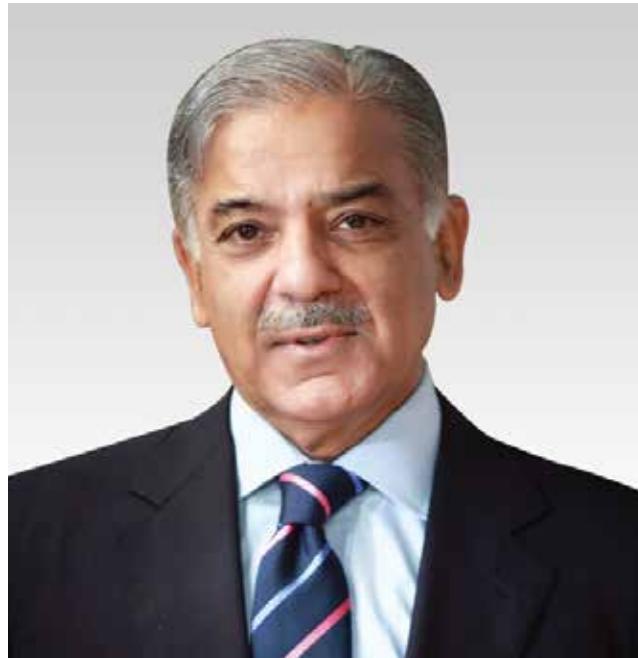
2012-2017



Punjab Information Technology Board



Punjab Information Technology Board



## Muhammad Shehzad Sharif Chief Minister of the Punjab

I have always believed in the role of technology to improve governance and institute a system of accountability through real time monitoring and collection of data. Effective use of technology can ensure efficiency and transparency to the government and cut out corruption. Therefore, during my earlier tenure as the Chief Minister of Punjab in 1999, I established the Punjab Information Technology Board (PITB) to enable a modern IT-led public infrastructure in the province.

Over the subsequent years, rapid proliferation of information and telecommunication technologies has opened new avenues with the potential of revolutionising public service delivery. Since 2008, I have ensured that all major projects in Punjab government are enabled by Information Technology. Since its inception, PITB has grown from a small organization of less than a 100 people to its current size of over 1,000 professionals.



The foundation of PITB was laid in 1999. Merger of the PITB and the IT department of Punjab led to consolidation of all the IT initiatives in one organization. During this time, the construction of the iconic Arfa Software Technology Park was also completed after a delay of several years.

Since appointment of Dr. Umar Saif as the Chairman, the Punjab Information Technology Board (PITB) has established itself as a centre of excellence in the public sector. In the past six years, under Dr. Saif's leadership, PITB has performed extremely well in terms of heightened pace of delivery, as well as expanding the portfolio of projects.

PITB projects have already started bearing fruit. We have documented improvement in service delivery outcomes across key social sectors like Education, Healthcare, Municipality Services and Law and Order. Our projects in sectors such as Agriculture, Irrigation, Land Revenue, and Public Transport have laid the foundation of a modern, technology-enabled government.

I can safely say that Government of the Punjab is well on its way in its mission to transform service delivery and revolutionise citizen-government interface using Information Technology. Such is the sophistication and impact of our systems that other provincial as well as foreign

governments have regularly sought our help on their IT projects.

Furthermore, the successful deployment of IT-enabled solutions has helped improve transparency, efficiency and efficacy in service delivery. These solutions have also provided effective tools for accountability of public servants, especially at the grassroots level where the citizen-government interface realises.

Punjab Government's effort in IT-led reforms have received widespread international recognition from publications such as The Economist, Time, NPR, New York Times, Forbes, South China Post, Hindustan Times etc.

On the back of PITB's initiatives, the Government has laid the foundation for a modern public-sector infrastructure in the province that is efficient, responsive and accountable. The task now is to ensure its effective usage as well as constant evolution through deployment of innovative solutions.

I want IT-led interventions not only to ensure citizens' participation in the business of the government but also improve the health of our democracy by ensuring transparency and rooting out corruption.

I wish the PITB all the best in its endeavors and hope that it will continue to set higher standards of performance and efficiency.



## **Dr Umar Saif** **Punjab Information Technology Board Chairman**

I joined the Government of Punjab as Chairman of the Punjab Information Technology Board (PITB) during my sabbatical year from the Lahore University of Management Sciences in 2011.

At that time, I had just received a Google Faculty Research Award and had also been named among the top 35 innovators in the world by the MIT Technology Review. Before joining the PITB, I was planning to spend my sabbatical year to teach at some university in the USA. Even as I started serving as the Chairman of the PITB, I did not expect to work for more than a few months. In fact, the only reason why I agreed to work for the

PITB was that I had the assurance of returning to my teaching job at LUMS anytime during the sabbatical year. Besides, almost all my colleagues in Pakistan and abroad were dissuading me from working for the public sector in Pakistan.

Six years later, I am happy to report that not once have I regretted my decision to work for the government. The PITB has since grown from an organization employing around 100 people to one with a staff strength of close to a 1,000 people. It has completed over 240 IT projects in Punjab and has assisted other provincial governments as well as foreign governments. In Punjab, the PITB has established a partnership with vari-

ous line departments, helping them conceive, implement and institutionalize IT-driven reforms. In many instances, these projects have entailed a significant re-working of old processes, requiring patience and resolve at all levels of government to ultimately achieve successful implementation.

There is hardly a major initiative in the province which has not been enabled by PITB's systems. What is even more encouraging is that because of the impetus provided by the PITB initiatives for IT-driven reforms are now increasingly emanating from line departments themselves.

Organizationally, PITB has been structured along the lines of a management consultancy. Each of its four wings is focused on one or more domain areas and is run by a Director General concerned. All four wings use resources from a common pool for their software design, development, and testing needs.

A large part of software development at PITB is carried out by a central software development team which never ceases to amaze me with its ability to execute at an unreal pace. At the same time, large enterprise systems - such as the e-Stamping project or the Automatic Fare Collection for metrobuses - are often implemented using licensed platforms and are outsourced for development to private firms.

PITB's core teams are supported by dedicated wings for Finance, Procure-

ment, Administration, Human Resources and Audit. Additionally, the organization is audited twice every year, once by a commercial audit firm, followed by the audit carried out by the Auditor General's Office. I take a lot of pride in these processes and checks and balances we have established at PITB.

This report summarises key projects implemented by the PITB. Each project's description covers details about its conception, implementation, and, most importantly, impact. For me, the most exciting aspect of PITB's work has been its scale. Our systems serve a province with a population of over 100 million. Therefore, when successfully adopted, these systems result in usage and data that is often unprecedented anywhere in the world.

Over these years, the PITB has also developed a close liaison with the IT industry. It has established a bi-annual consultative forum with representation from the IT industry and relevant stakeholders in the government. These roundtables are attended by close to 150 IT companies from throughout Pakistan. These roundtables have led to the formulation of Pakistan's first ever provincial IT policy in Punjab, and triggered a nationwide survey of IT companies.

PITB's work in supporting technology entrepreneurship has played a critical role in bootstrapping startup ecosystem in Pakistan. In 2012, we established Pakistan's first public-sector startup incubator, Plan9, and followed it by setting up

a business accelerator, PlanX. Together these have facilitated growth of hundreds of startups and dozens of private-sector incubators modeled after Plan9. Since their inception, Plan9/PlanX has incubated 160 startups, with a collective valuation of close to \$60 million.

None of this could have been possible without the inspiration and support of the Chief Minister Punjab, Shehbaz Sharif. It was his vision that led to the establishment of PITB in 1999, when understood the power of IT for transforming governance and fuelling the economy. CM's legendary work ethic has ensured that we do not just set ourselves high standards but also achieve them in unrealistically short deadlines.

I want to also thank all present and past Chief Secretaries, Chairmen of Planning and Development Board, Inspector Generals of Police, Secretaries and officers of line departments who have supported us, collaborated with us and helped us institutionalise IT-driven reforms in the government. This report is a testament of the efforts of these champions of reform in the government.

Finally, I would like to thank my team at PITB. I am truly honored and privileged to work with such a dedicated and committed group of people. Each one of them is a rock star! I hope some of the projects documented in this report will one day become bedtime stories for children telling them about how we played our part in making Pakistan great.



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#### Team Directory

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**Waqr Naeem Qureshi**  
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Director (Development & Procurement)  
Irtaza Hashmat Shami  
Director (Audit)  
Nadia Riaz  
Chief Financial Officer/ Director Finance

**Aquil Khan**  
Joint Director (Admin)  
**Bilal Naeem**  
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Zeeshan Asghar  
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**Muhammad Mahmood**  
Senior Program Manager  
**Hammad Ulleb**  
Program Manager

SW

Support  
Wings

# CONTENTS

## SECTION 1: HEALTH

Tracking Vaccinators	002
Disease Surveillance System	004
Dengue Tracking System	006
Biometric Attendance System for Health Facilities	010
Monitoring System for Polio Campaign	012
Drug Inspection and Monitoring Evaluation System	014
Drug Testing Laboratory Automation	016
Medicine Procurement	017
Electronic Medical Information Management System	019
BHU Clustering	021
Ensuring Health Service Standards Through MEA Health	022
Maintenance and Cleanliness System	024
Health Watch	025

## SECTION 2: LAW AND ORDER

Electronic FIR	028
Punjab Police HR Management Information System	029
Computerisation of Police Stations	030
Criminal Record Management System	032
Criminal Identifier	033
<i>IG Khuli Kachehri (8787)</i>	034
Automation of Lahore High Court	035
Hotel Eye	036
Tenant Registration System	037
Crime Mapping	038
Anti-Vehicle Lifting System	039

Smart Police Facilitation Centre	040
Reforms in Motor Vehicles Registration	042
Legal Disputes Tracking System for Punjab Police	043
Call Data Records-Based Crime Analysis	044
CTD Geotagging	045
Beat Book for Punjab Police	047
Punjab Police Toolkit	048
Citizen Biometric Verification System	049
Prisons Management Information System	050

## SECTION 3: EDUCATION

Real-time Monitoring of Public Schools Across the Punjab	054
School Information System for Public Schools	056
Measuring Student Learning Outcomes – Cost Effectively	058
Automation of Large-Scale Examination Systems	060
College Admissions – Online, Not In-line!	061
e-Learn Punjab – Localised Ed-Tech Solutions	062

## SECTION 4: PROCESS AUTOMATION

e-Filing and Office Automation System	064
PITB Data Centre	066
PITB's Videoconferencing Facility	068
Smart Monitoring of Development Projects	069
e-Payment Gateway	071
Automated Fare Collection	072
Punjab Floods Disaster Management System	073



Ease of Doing Business (Registration Portal)	074	Potassium and DAP Subsidy	106
IT Based Profiling	075	Wheat Procurement	107
Province-Wide Connectivity of the Punjab	076	Kissan Card	108
Transport Department Automation System	077	Modern Farmer Extension Services Through AgriSmart	109
Punjab Online Procurement System	078	Restaurant Invoice Monitoring System	110
Imparting ICT Based Trainings to Civil Servants	079	Smart Food Licensing System for Punjab Food Authority	111
National Highway and Motorway Police Ticketing System	080	Fertiliser and Pesticide Monitoring System	112
Anti-Corruption Case Management System	081	Agriculture Market Information Application	113
Punjab Residency Programme	082	Bulldozer Booking Management System	114
Job Portal	083	District Management Price Control	115
Data Warehousing	084		
Improving Web Presence for Government	086		
<b>SECTION 5: CITIZEN-CENTRIC SERVICES</b>		<b>SECTION 7: ENTREPRENEURSHIP</b>	
e-Khidmat Markaz	088	Plan9	118
Revamping of Stamp Duty Collection Through e-Stamping	090	Herself	120
Punjab Free WiFi Hotspots	092	PlanX	121
Citizen Contact Centre	094	TechHub Connect	122
Citizen Feedback Monitoring Programme	095	Chief Minister's e-Rozgaar Training Programme	124
Driving License Information Management System	098	<b>EXTERNAL PROJECTS</b>	
Domicile Management System	099	Waseela-e-Taleem	128
e-Challaning and e-Testing in Punjab	100	Benazir Income Support Programme	129
Complaints Management for Overseas Pakistanis	102	Hajj Operations: End-to-End Automation	131
		Arfa Software Technology Park (ASTP)	132
		Peaceful Pakistan	134
<b>SECTION 6: AGRICULTURE &amp; FOOD</b>			
Agriculture e-Credit Scheme	104		

# Foreword

This report is a comprehensive compilation of cross-sectoral initiatives pioneered by the Punjab Information Technology Board (PITB) to modernise governance processes since its restructuring in 2011.

It lists down sector-specific projects as well as cross-sectoral initiatives. The latter have been pioneered with a holistic approach towards modernisation of governance infrastructure and transformation of citizen-government interface in the public sector of the province. The subsections explain the need for individual projects, the interventions enabled by the PITB and the impact of those interventions.

The bulk of the sector-specific initiatives have been implemented in Education, Public Health and Law and Order - three sectors crucial to the Sustainable Development Goals (SDGs) set for countries across the globe.

In Education, the PITB has developed Information Technology-enabled solutions to longstanding problems concerning monitoring and evaluation of staff and enrollment and retention of children at education institutes. These solutions have not only served to improve quantitative indicators in public education sector but have also been deployed to attain qualitative changes in learning outcomes of enrolled students.

Interventions in the Health sector

have enabled the Government to strengthen preventive health care mechanisms as well as to improve allocation of scarce human and financial resources. IT-enabled solutions have helped make a foolproof national programme for immunisation against preventable diseases like polio. The successful campaign against vector-borne dengue fever has culminated into a comprehensive disease surveillance system in the province.

In Law and Order, the PITB has helped the Police and Prisons departments strengthen their information management systems. The policing culture at the police station level has undergone a transformation. With large amount of crime data now gathered and stored in digital form, the department has documented improvements in its crime prevention and investigation capabilities.

Two other sectors benefiting from PITB's IT-enabled solutions are Agriculture and Food. An unprecedented restaurant information management system is helping the Food Department monitor and assure quality of food available at restaurants and hotels in the province. Similarly, interventions in the Agriculture sector are enabling collation of essential crops data to be used for better planning and enhanced food security in the province.

The cross-sectoral initiatives have

been guided by the goal of transforming public infrastructure as well as citizen-government interface.

The e-Stamping and e-Khidmat Markaz projects pioneered by the PITB have made available online as well as under a single roof multiple government agencies responsible for issuance and certification of documents needed by citizens on a regular basis. The e-Rozgaar project serves as a unique solution to the needs of unemployed and self-employed youth of the province.

A flagship Citizens Feedback Monitoring programme is bridging the physical divide between the citizenry and government departments. It has laid the foundation for transparent and efficient delivery of municipal services.

PITB has also successfully deployed IT-enabled solutions for longstanding issues in a range of other public services. Automated systems have streamlined the government's Hajj programme, Lahore High Court's operations, and driving licence issuance and management of vehicular traffic on national highways.

As an autonomous body serving under the Planning and Development Department of the province, PITB's approach remains guided by the need for constant evolution of the public sector through application of innovative and IT-enabled governance techniques.



# HEALTH



The Specialized Healthcare Department has had the pleasure of working with the PITB on multiple initiatives. Throughout the course of our collaboration, the PITB team displayed utmost professional dedication - from inception to planning to execution and implementation of the projects. They took great care in understanding our requirements and developed their projects accordingly. The PITB's technical capability has been very helpful as it has enabled us to envision the bigger picture. The Health Reporting System is an exemplary project initiated in 2013 and has been implemented across the Punjab at all levels of healthcare facilities. The PITB's commendable efforts have tied them in a very strong relationship with the Specialized Healthcare Department which we would always like to maintain for our future endeavors.

## NAJAM AHMED SHAH

Secretary Specialized Healthcare & Medical Education Department



The dedication and the positive attitude of the PITB team made it possible for us to successfully deliver all health initiatives. They helped us develop, refine, document and deliver important initiatives. An exemplary project is the Anti-Dengue initiative which has been operational since 2012. The monitoring system for the polio vaccination campaign is another project which enabled the local administration and partner organizations such as WHO and UNICEF to access real time field data. I look forward to working with the PITB as a valued partner for all our future endeavors.

## ALI JAN KHAN

Secretary Primary & Secondary Health Department

# Tracking Vaccinators (e-Vaccs)

Improvement in vaccination services through information technology

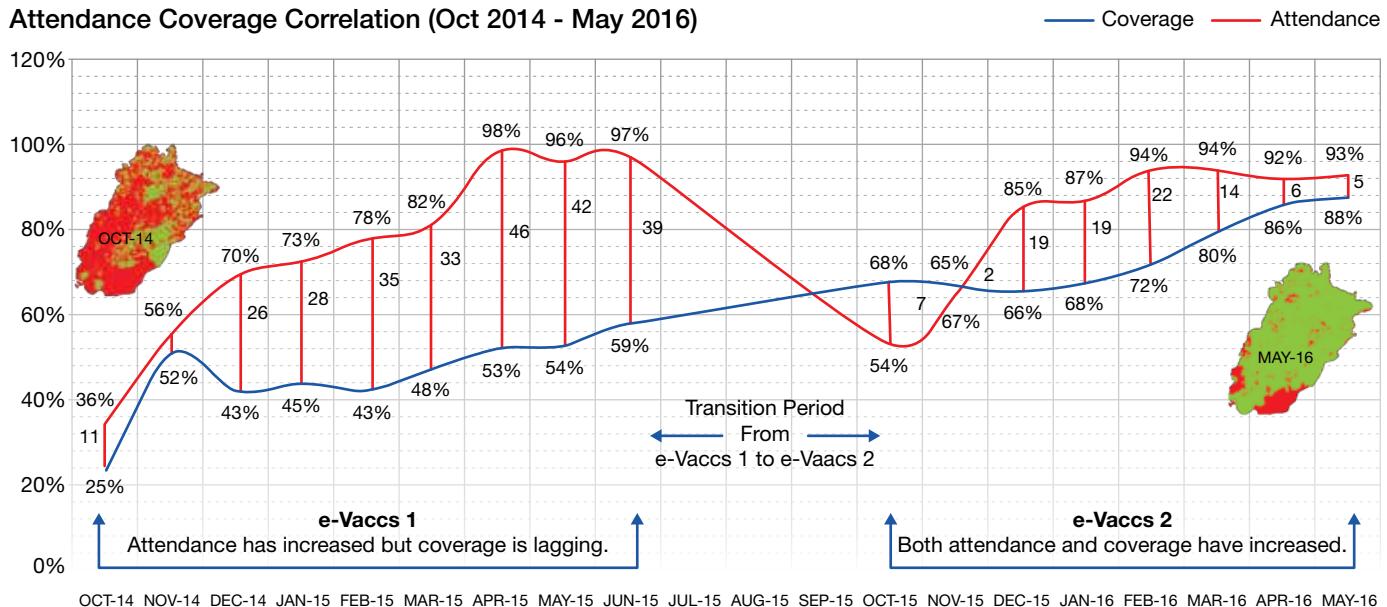
**A**ccording to Pakistan's Expanded Programme on Immunisation (EPI), 27% deaths among children under five years are caused by diseases that could be prevented through vaccinations. These diseases include Poliomyelitis (also known as Polio), Neonatal Tetanus, Measles, Diphtheria, Pertussis (whooping cough), Hepatitis-B, Hib Pneumonia, Meningitis and Tuberculosis. As part of their mission to eradicate polio, the EPI enlisted the help of the PITB to address vulnerabilities in the programme. These relate to less geographic coverage and performance of field vaccinators.

The PITB provided vaccinators smartphones with applica-

tions to digitise their fieldwork and monitor attendance and performance. The smartphones were used to enter real-time immunisation records that were then sent to a centralised database.

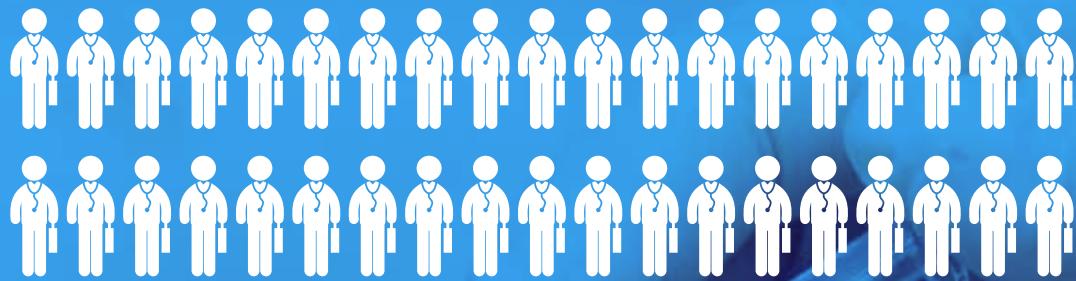
Attendance of field workers in the Punjab rose from 36% in 2014 to 94% in 2016 and geographical coverage improved from 25% to 88% in the same period as a result of this intervention. The PITB also replicated this programme in Khyber Pakhtunkhwa (KPK) and Balochistan. In KPK, vaccinator attendance improved from 34% in August 2016 to 75% in May 2017. Currently, the project is functional in three out of five Pakistani provinces.

Attendance Coverage Correlation (Oct 2014 - May 2016)



**3,767**

VACCINATORS



**2.75M**

CHILDREN  
VACCINATED



**33.5M**

VACCINES  
ADMINISTERED





# Disease Surveillance System

In recent years, Pakistan, especially the province of the Punjab, has recorded an upsurge of vector-borne diseases like dengue fever. Unavailability of historical data in an organised form hindered preemptive detection of outbreaks, limiting the government's capacity for emergency response and preparedness. The implementation of the Disease Surveillance System (DSS) was found necessary so that future epidemics could be prevented and coordinated action could be taken.

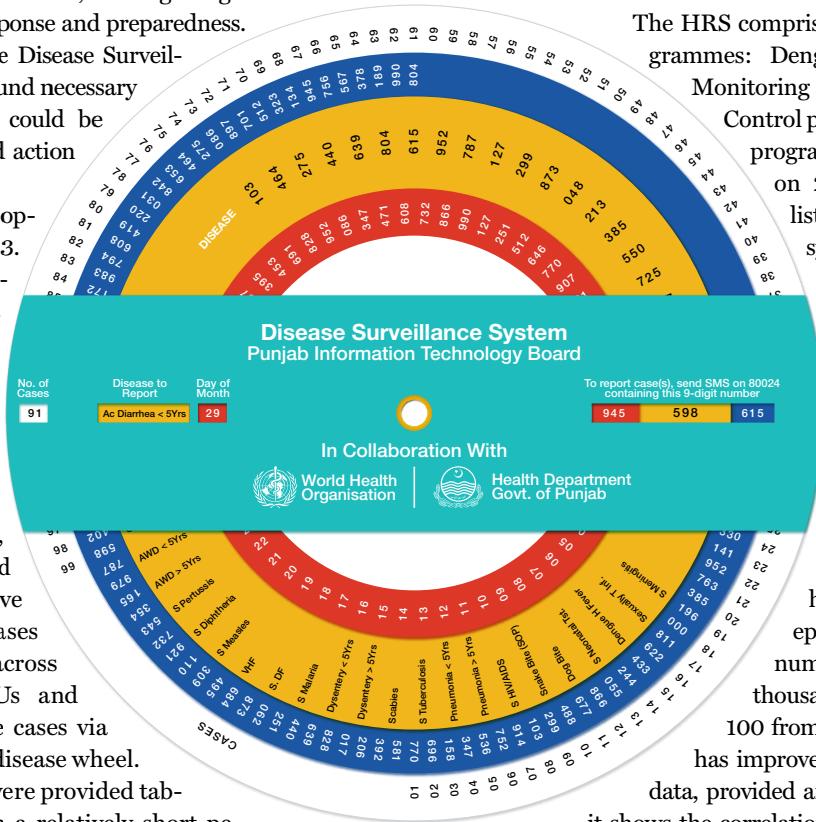
The system has been operational since July 2013. Data for surveillance is being captured from across the Punjab and from all levels of healthcare facilities i.e. primary (2,828 RHCs and BHUs), secondary and tertiary (147 hospitals). Dedicated data entry operators, equipped with laptops and internet connectivity, have been tasked to report cases from public hospitals across the province. The BHUs and RHCs also report disease cases via SMS with the help of the disease wheel. Recently, these facilities were provided tablets to ensure that within a relatively short period, the disease wheel would be phased out.

The information is then stored on an HRS-centralised server. A committee comprising representatives of the World Health Organisation (WHO), the Institute of Public Health (IPH), King Edward

Medical University (KEMU), University of Agriculture Faisalabad, Specialised Health & Medical Education Department and the PITB reviews the data and publishes weekly disease bulletins and disease alerts.

The HRS comprises the following allied programmes: Dengue Patients Surveillance, Monitoring System for Polio, Hepatitis Control programmes and TB Control programmes. It currently focuses on 26 communicable diseases listed by the WHO but the system is being updated to monitor 81 diseases in total on the request of the Primary and Secondary Healthcare Department.

The surveillance system helped health authorities control an outbreak of Influenza N1H1 late in 2015 and curb a measles epidemic in 2012. It also helped control the dengue epidemic, bringing down the number of confirmed cases from thousands in 2011 to less than a 100 from 2012 onwards. The system has improved availability and quality of data, provided an early warning system and it shows the correlation between disease data and geospatial mapping. More than 11.8 million patient consultations have been recorded in the HRS central server to date. As many as 203 editions of the disease bulletin have also been published since June 2013.



## Disease Calendar

█ Alert Months   █ Peak Months

Disease	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Acute Diarrhoea				█	█	█						
Acute Viral Hepatitis (A&E)			█	█	█	█						
CCHF							█	█	█			
Cholera			█	█	█	█						
Dengue		█				█	█	█	█	█	█	█
Diphtheria	█							█	█	█	█	█
Dog Bite												
Dysentery (Shigellosis)				█	█	█	█	█	█			
Heat Stroke / Sunstroke				█	█	█	█					
Infantile Diarrhoea				█	█	█	█					
Leishmaniasis				█	█	█	█					
Malaria				█	█	█	█					
Measles	█	█	█	█								
Meningitis	█							█	█	█	█	█
MERS-COV	█	█	█	█	█	█	█	█	█	█	█	█
Naegleria / (Primary Amoebic Meningoencephalitis)			█	█	█	█	█	█				
Neonatal Tetanus	█	█	█	█	█	█	█	█	█	█	█	█
Pneumonia (SARI)	█	█	█					█	█	█	█	█
Scabies									█	█	█	█
Seasonal Influenza A H1N1	█	█	█					█	█	█	█	█
Snake Bite							█	█	█	█		
Typhoid				█	█	█	█	█	█			
Whooping Cough (Pertussis)	█	█	█						█	█		█
<b>Diseases With Global Health Concerns</b>												
Ebola Virus Disease	█	█	█	█	█	█	█	█	█	█	█	█
H5N1	█	█	█	█	█	█	█	█	█	█	█	█
MDR / XDR Tuberculosis	█	█	█	█	█	█	█	█	█	█	█	█
Poliomyelitis	█	█	█	█	█	█	█	█	█	█	█	█
Zika Virus Disease	█	█	█	█	█	█	█	█	█	█	█	█

Based on data historically available in Disease Surveillance System, Health Department has put together disease calendar. The calendar highlights alerts of peak months for all communicable diseases.



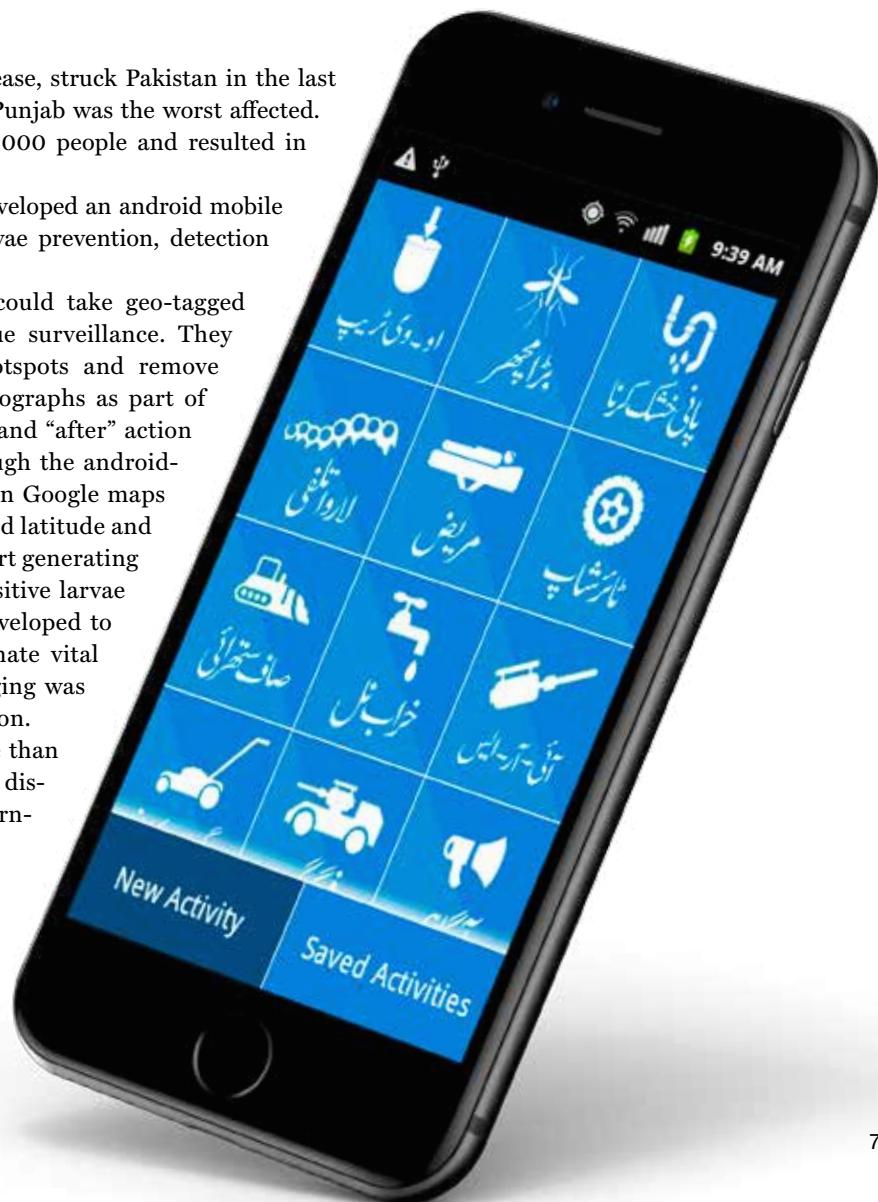
# Dengue Tracking System

**D**engue Fever, a hitherto unknown disease, struck Pakistan in the last quarter of 2011. The province of the Punjab was the worst affected. The epidemic affected more than 21,000 people and resulted in over 300 deaths.

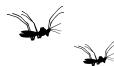
To prevent another outbreak, the PITB developed an android mobile application for real-time information on larvae prevention, detection and public hygiene activities.

With these applications, field officials could take geo-tagged photographs of designated areas for dengue surveillance. They were asked to identify larvae breeding hotspots and remove them. They were asked to submit two photographs as part of this process, showing the situation “before” and “after” action was taken. The data stream submitted through the android-based mobile application would be plotted on Google maps in real time as the mobile application captured latitude and longitude along with the photographs. An alert generating solution that looked at key variables like positive larvae presence, humidity and temperature was developed to generate warnings proactively and disseminate vital information to all stakeholders. Patient tagging was also carried out through the mobile application.

The system has been operational in more than 25 government departments and across 36 districts as well as the ICT & CDA (Federal Government) since 2012.



**21+**  
**MILLION** Anti-dengue surveillance activities have been conducted since March 2012.



## Anti-Dengue Android Application



**6,000+**  
Smart phones are in circulation with entomologists, CDC supervisors, environment inspectors, vaccinators, and other officials.



District governments and departmental heads review performance of daily basis.



**100,000**  
Hotspots have been added to the system for weekly surveillance throughout Punjab.

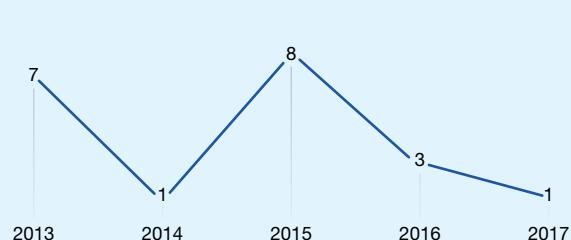
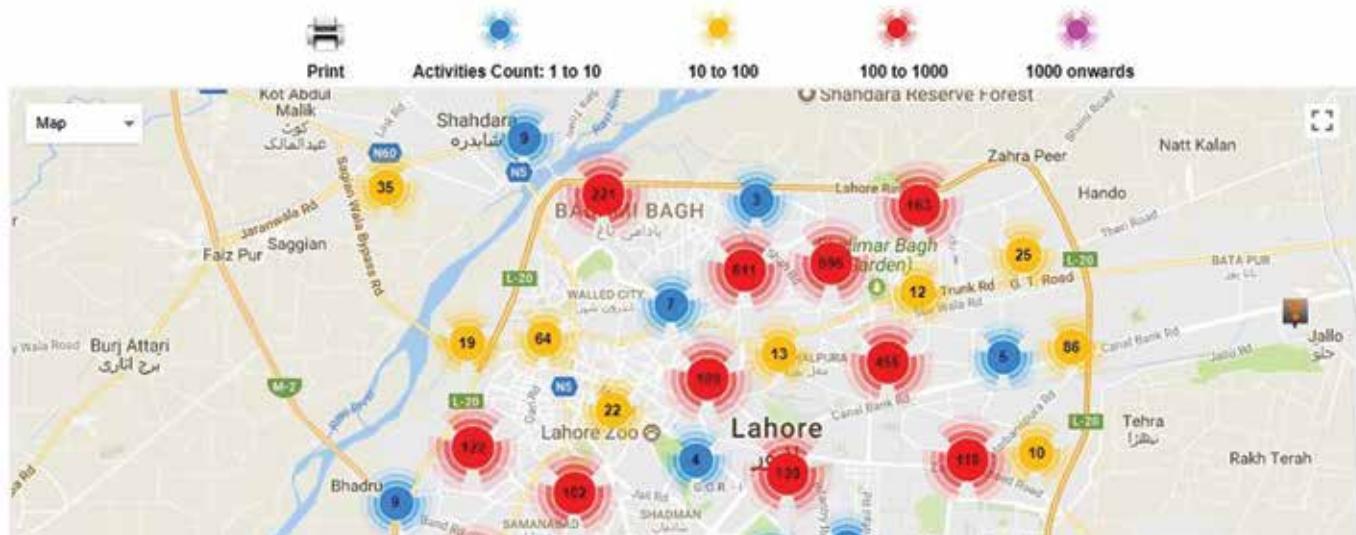


**50,000**  
Houses have been geo-tagged as patient hotspots for weekly surveillance via the Dengue Tracking System.



**147**  
Hospitals have been equipped with data entry operators for patient reporting via the Dengue Patient Reporting System.

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# Biometric Attendance System for Health Facilities

This initiative sought improvement in public healthcare services by ensuring presence and punctuality of doctors and other staff during duty hours. A biometric attendance system was needed to ensure that all employees in health facilities mark their attendance on a daily basis, promoting a culture of health workers checking-in on time across the province.

The PITB initiative was introduced in 27 district headquarters hospitals (DHQs) and 101 tehsil headquarters hospitals (THQs) across the Punjab by

July 2015. CCTV cameras

were also installed for surveillance purposes.

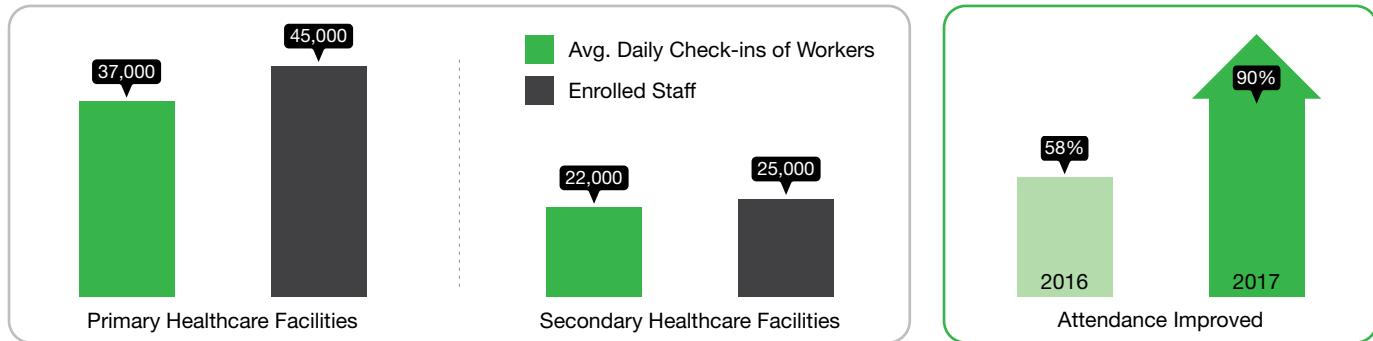
Biometric-enabled tablets were also distributed among 2,667 basic health units (BHUs) and rural health centres (RHCs) by August 2016.

All staff members now have to mark their daily attendance through these devices.

Clinical and non-clinical attendance has improved significantly, from 58% in August 2016 to 90% in July 2017, across the Punjab. The system provides real-time data about attendance of all cat-

egories of government staff. It has improved services and strengthened the health delivery network. There are now 37,000 daily check-ins at all BHUs and RHUs and over 22,000 daily check-ins at DHQ and THQ hospitals. District coordination officers and district health authorities are also able to monitor the attendance of each healthcare facility.





## Biometric Attendance System Ensuring Presence of Hospital Staff

### Primary Hospitals



**2,828**

BIOMETRIC DEVICES INSTALLED

**37K+**

DAILY CHECK-INS

### Secondary Hospitals



**790**

BIOMETRIC DEVICES INSTALLED

**22K+**

DAILY CHECK-INS



# Monitoring System for Polio Campaign

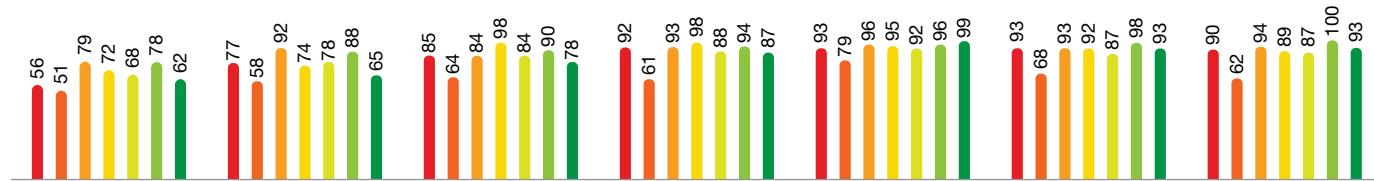
**P**akistan is one of the only two countries in the world where polio is still prevalent. This has serious implications for the country's public health sector.

Usually, field officers are tasked with a door-to-door inoculation campaign. A key requirement for the polio vaccination drive was a mechanism to track the movement of field workers so that vaccination targets could be met. This need prompted the development of a mobile application for supervision of polio campaigns. This application allows supervision of field officers through geo-tagging techniques and categorisation of field data of children for intra-campaign reporting as well as post-campaign analysis.

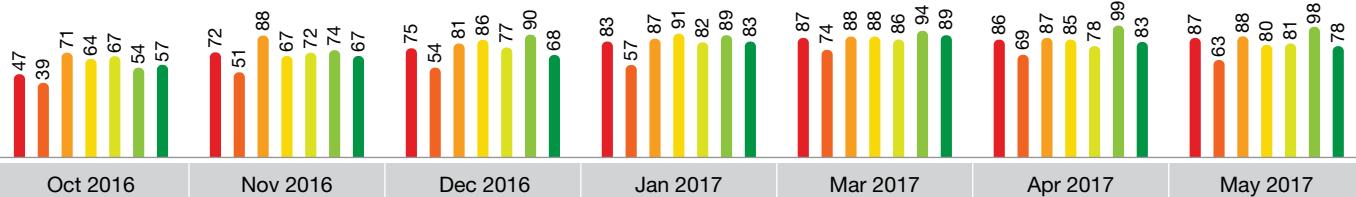
The application enables the local administration as well as partner organisations, such as WHO and UNICEF, to access real time field data, for example, the number of children vaccinated, refusal cases, zero dose children and children not available during, as well as, after the campaign. The current system is active in seven high-risk districts of the province. The implementation of the system resulted in improved quality of supervision of field officers. The system enabled real time monitoring of field staff as per digitised micro plans. Heat maps were also made to highlight high and low coverage areas to relevant district authorities and partner organisations.

## UCMO Polio Campaign Usage

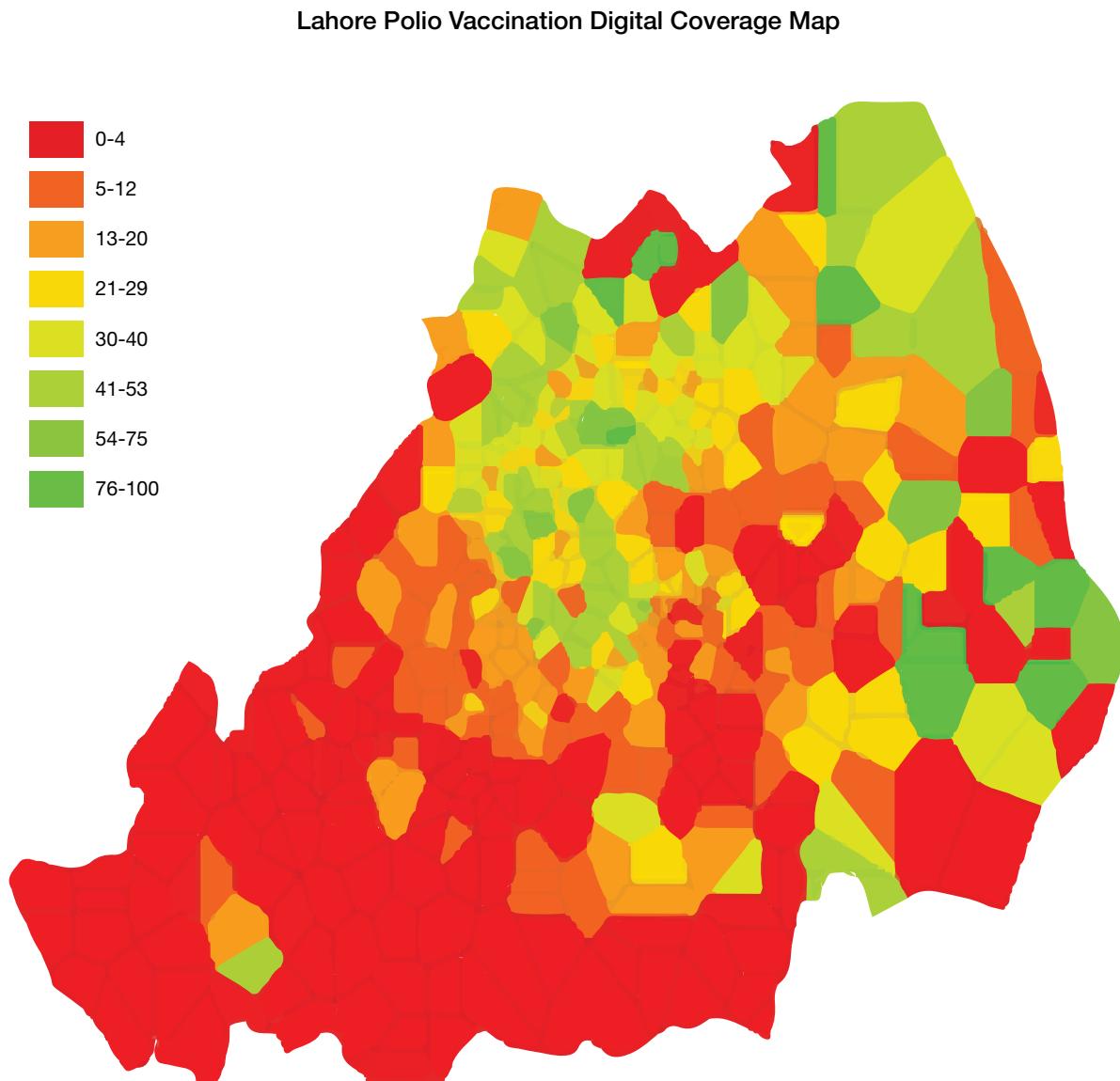
Lahore Rawalpindi Multan Muzaffargarh Rahim Yar Khan DG Khan Rajanpur (Percentage)



## Area In charge Polio Campaign Compliance



The graph depicts supervisory activities conducted by union councils medical officers (UCMOs) and area in-charges. Said activities are geo-tagged and contain pictorial evidence with date and time.



Lahore map with vaccination coverage as a consequence of the door to door campaign. The map helps district authorities focus on low coverage (red areas) to improve outreach. The map shows coverage in October 2016 which has improved since.



# Drug Inspection and Monitoring Evaluation (DIME) System

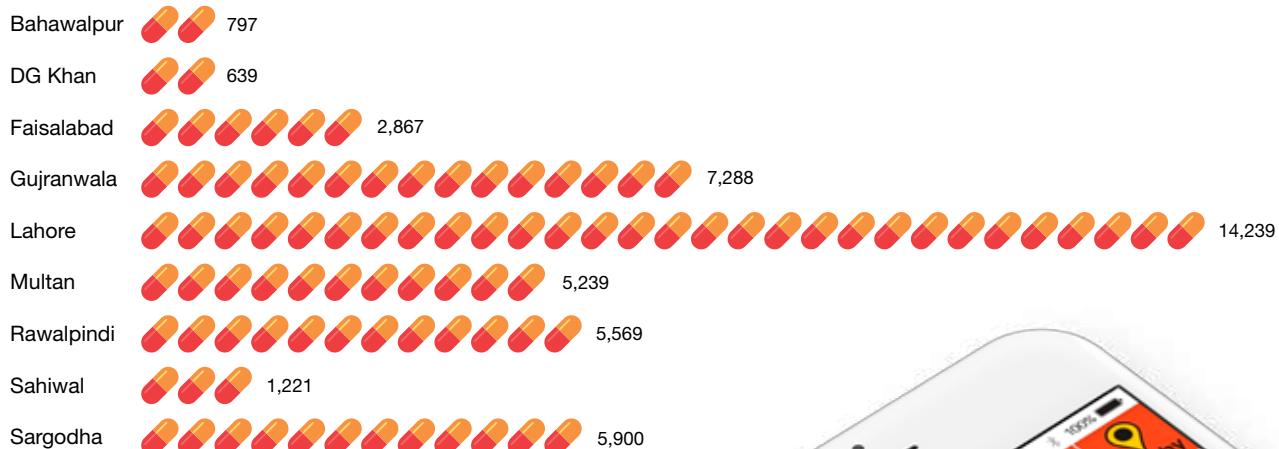
The Punjab Health Department required a quality control programme to ensure availability of life-saving drugs and keep track of quality and affordability of these medicines. It also wanted to rationalise drug usage in accordance with the National Drug Policy. The department, therefore, wanted a system that would be effective, efficient and transparent. The system already in place, unfortunately, had collapsed due to lack of transparency and a proper check and balance mechanism.

Launched in 2013, the Drug Inspection Monitoring and Evaluation (DIME) is a smartphone application developed by the PITB for the Health Department. The application facilitates drug inspectors to carry out basic functions like inspecting pharmacies, recording contraventions and tak-

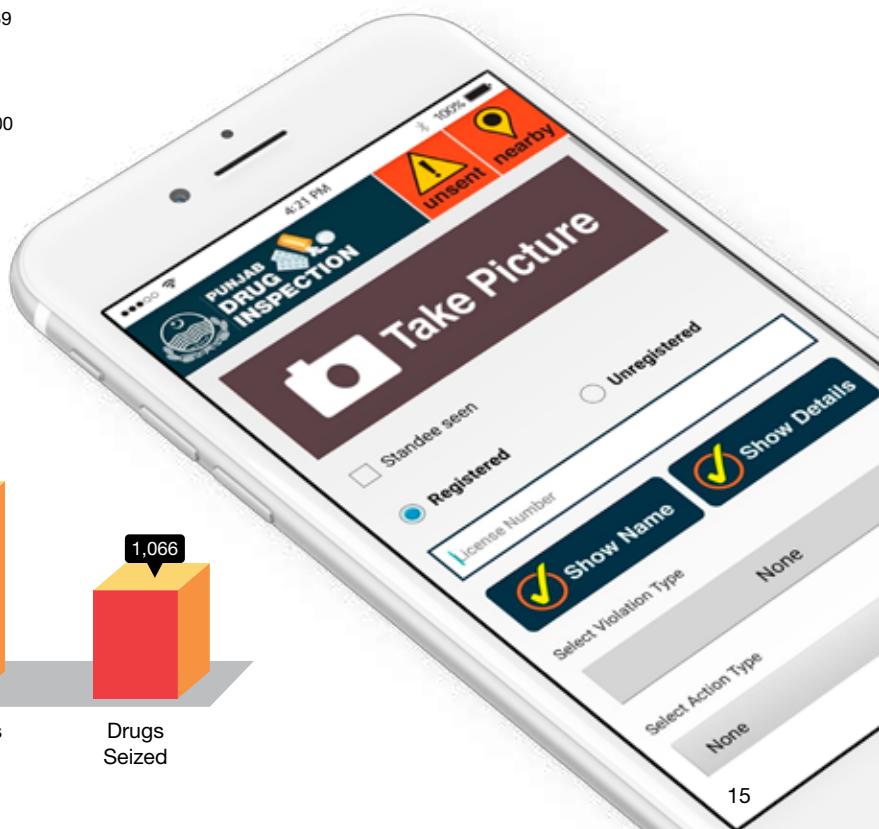
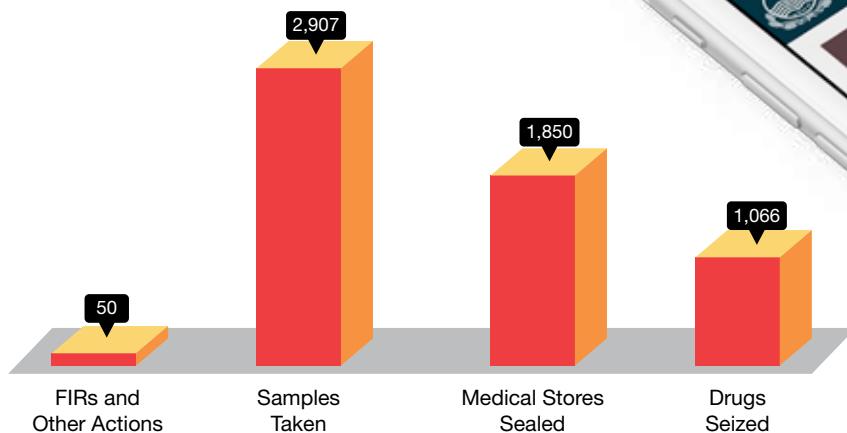
ing corrective actions against offenders. It also helps them monitor and check registered and unregistered pharmacies, availability of standard drugs at these pharmacies and to ensure compliance with relevant laws. The DIME has geo-tagging options and facilitates authorities to monitor the performance of drug inspectors. The initiative was made operational in all nine divisional headquarters.

As of July 2017, over 26,350 medical stores and 1,802 medicine distributors have been inspected. As many as 6,152 violations were recorded and more than 3,202 medical stores were found in violation of the law. As a result, 1,729 medical stores were sealed and the stock of 999 others was confiscated. As many as 322 manufacturing units across the Punjab were also geo-tagged.

## Division Wise Inspections



## Actions Taken





# Drug Testing Laboratory (DTL) Automation Programme

The Drug Testing Laboratory (DTL) automation programme is an initiative taken by the government of the Punjab to improve authenticity of tests performed on various drugs. Before the automation of this process, there was no transparency in manual drug testing.

A secure web application has been developed to digitise all processes related to drug testing. The application has customised dashboards and provides statistical analysis. Transparency is maintained through use of barcodes, photographs and biometrics. A barcoding technique has been introduced to maintain anonymity of the drug source so as to eliminate the possibility of any tampering in the results. The reports are available online.

The system is now operational in all DTLs of Punjab including Lahore, Bahawalpur, Rawalpindi, Faisalabad, and Multan.



## Transformations

Receipt of sample using system

Sample is assigned for testing to lab assistant based on rule based algorithm

Anonymity is maintained throughout the process

Results are printed from the system on a security paper

# Medicine Procurement

Initially, medicine procurement was done manually, with a yearly budget of approximately Rs5 to Rs6 billion, which moved through various departments based on specific conditions. The paper-based system lacked traceability and faced time delays in approvals and hampered audit activities.

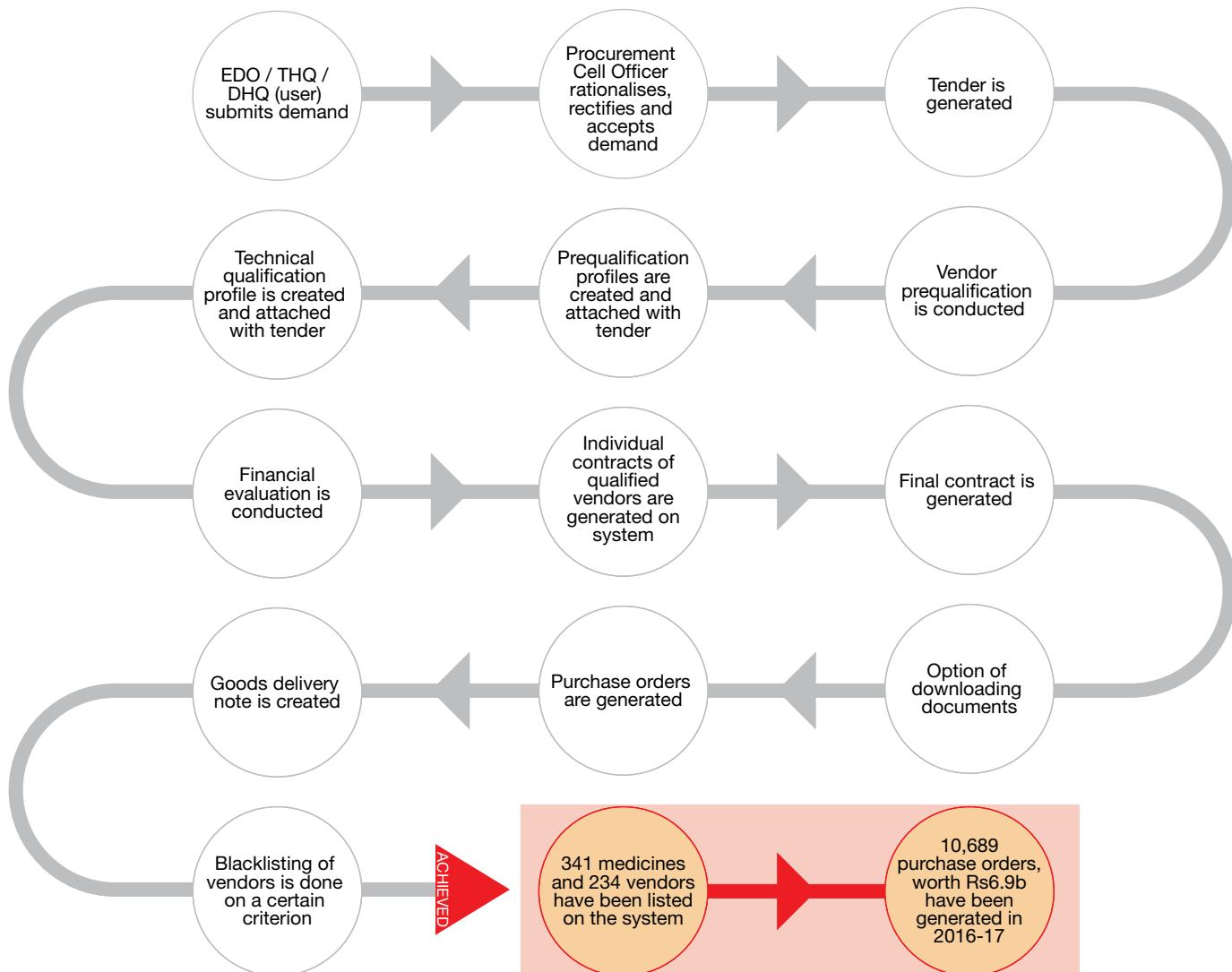
Automation of the medicine procurement system aims to address problems in the manual method by creating a structured workflow based e-Procurement system.

The system manages submission of bids and prequalification of vendors. The system is designed to facilitate demand for medicines by various healthcare facilities. Procurement professionals validate it. The system will automatically calculate the lowest bid and the award system will generate contracts to successful vendors according to these parameters. The system promotes transparency and the data can be used to inform policy decisions in the future.



Medicine Procurement System Dashboard

## Medicine Procurement System Process Flow

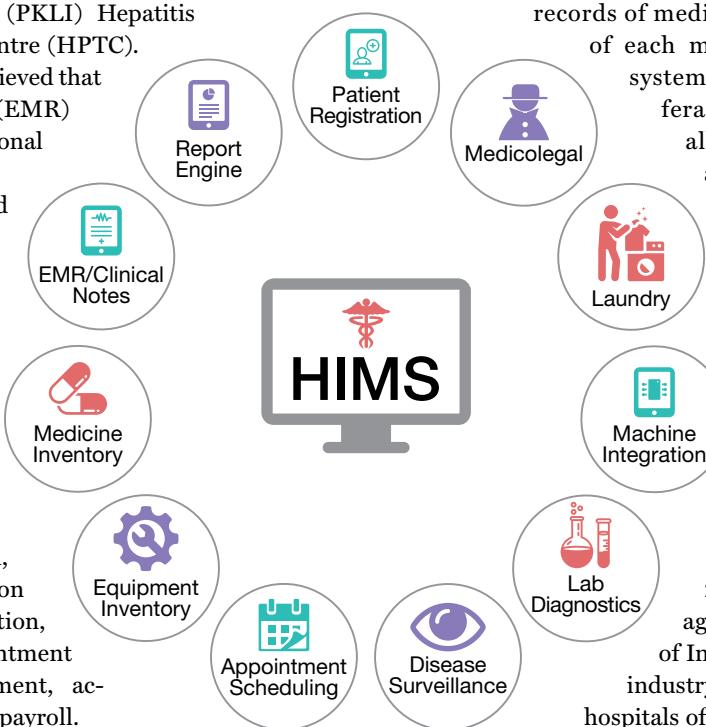


# Electronic Medical Record & Hospital Information Management System

A state-of-the-art hospital information management system (HIMS) was required for Pakistan Kidney and Liver Institute's (PKLI) Hepatitis Prevention and Treatment Centre (HPTC). Stakeholders in the project believed that electronic medical records (EMR) were necessary for professional patient care.

A heavily-customised EMR/HIMS was provided to PKLI-HPTC to cover the needs of this specialty clinic. Areas covered included patient registration, financial assessment, billing of consultation and diagnostic services, nursing, medical records, e-prescriptions, investigations orders, diagnostic machinery integration, templates for investigation reports, pharmacy automation, inventory control, an appointment mechanism, waste management, accounts, human resources and payroll.

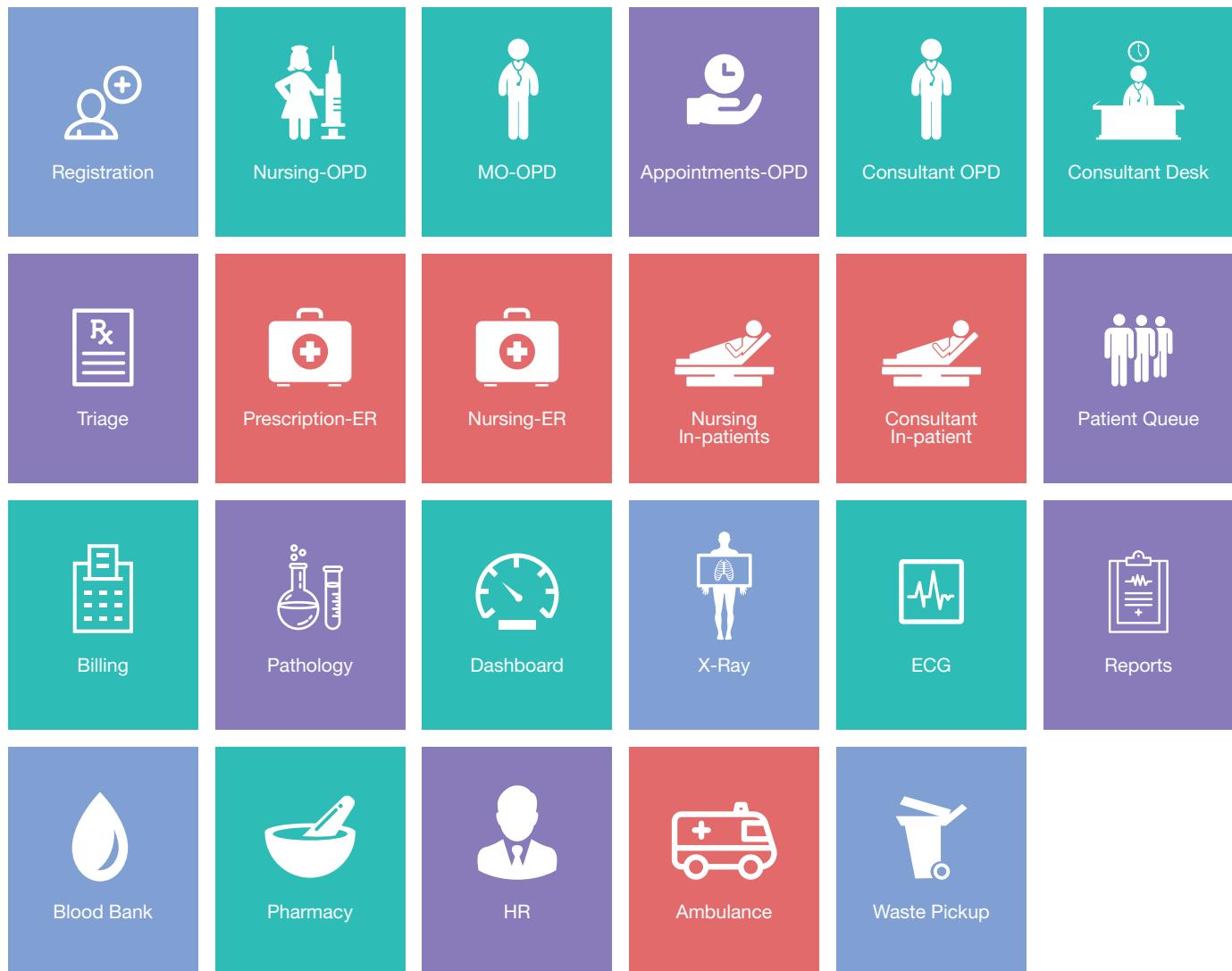
Since its inauguration at PKLI-HPTC in March 2017, the system has recorded 11,573 consultations with 4,620 patients. A complete electronic medical re-



cord of each patient is maintained which helps doctors provide the best possible treatment. A complete inventory records of medicines and dispensation details of each medicine is maintained in the system to avoid stock-outs and pilferage. Overall, the system covers all aspects of clinical operations and is promoting an efficient and paperless environment. The patient data will, in due course, be mined for research and policy formulation purposes.

The Primary and Secondary Healthcare Department (P&SHD) has approved plans for implementation of the HIMS solution at 33 district and tehsil headquarters hospitals in 2018. The PITB has signed an agreement with the management of Indus Hospital to incorporate best industry practices at DHQ and THQ hospitals of the Punjab. The PITB will work closely with the P&SHD to roll out a software solution that has been modified to mimic Indus Hospital processes. The project is expected to be completed by mid-2018.

## HIMS Admin Dashboard

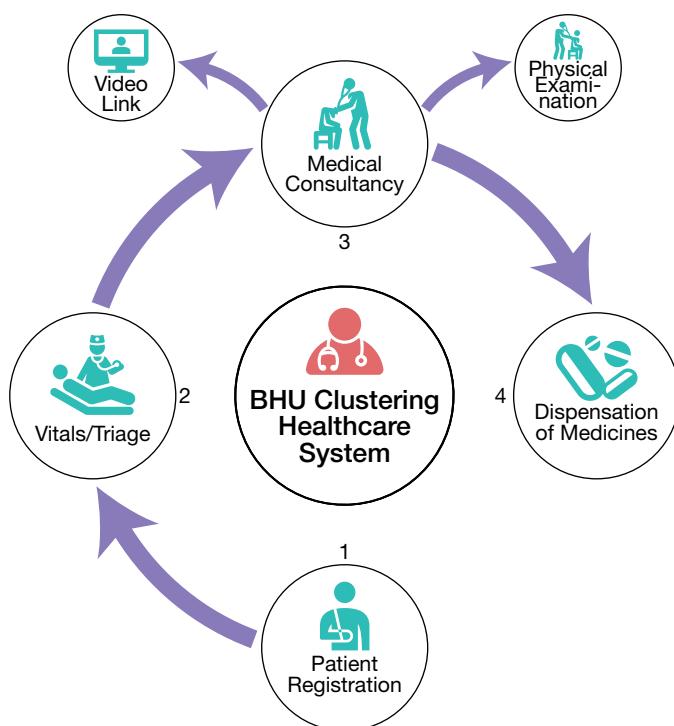


# BHU Clustering

**M**ajor problems encountered by basic health units (BHUs) across the province include lack of quality healthcare services, absence of qualified doctors in remote areas and absence of an electronic medical record.

The government of the Punjab wanted to form BHU Clusters to resolve these issues. Each cluster would include two BHUs situated close to one another. They would have one doc-

tor present, who would rotate between the two facilities on alternate days, maintaining the presence of a medical officer in the cluster. The BHUs are also connected through video link to provide services remotely if required. Complete medical histories of patients is kept in the EMR which also shows the total number of patients examined and records of medicine prescribed to them.



Till date:

**123,819**

New patients have been registered through EMR.

**79,814**

Patients have been checked by doctors.

**17,227**

Patients checked via video link.

# Ensuring Health Service Standards Through MEA Health

The monitoring and evaluation assistants (MEAs) visit BHU, BHU24/7, BHU+, RHC, THQ and DHQ hospitals to gather information related to these health facilities, such as delivery of medical services, attendance of paramedical staff and physicians. Filling out data on paper forms was a tedious process and compilation of this information was a time-consuming process.

The PITB and the Health Department devised a system through which the information could be collected on a mobile application which would then be integrated with a central database.

The Monitoring and Evaluation Assistants (MEAs) health programme was launched in December 2014. A team of 180 MEAs was hired to conduct visits to health facilities under primary health. These newly inducted MEAs were retired army officers familiar with areas of their visits.

Each MEA was given a mobile device with the application installed in it. The MEA gathered information about the availability of medicines, supplies, equipment, attendance of staff etc. To improve the performance and efficiency of assistants,

they were sent to each facility in pairs to check key performance indicators. The MEAs also take images and their location is captured by a built-in GPS system in the device. The system allows the user to see a list of all hospitals visited and their data captured. Monthly statistics can also be viewed on a dashboard.

The data gathered by MEAs is analysed and presented in a monthly meeting chaired by the Primary and Secondary Health secretary. The data is presented in the form of 'Data Packs', which comprise consolidated reporting for each indicator, comparisons within districts, and other infographics. The departmental forecasts, plans and important decisions are based on this information.

Overall performance at health facilities has tremendously improved as a result of this intervention. For example, availability of medicines at hospital pharmacies has improved. This project has also led to the development of another programme called Maintenance and Cleanliness System (MACS) which monitors cleanliness at hospitals. So far, data from 5,041 inspections have been uploaded on the MSH portal.



**MEA**  
**Secondary Health**



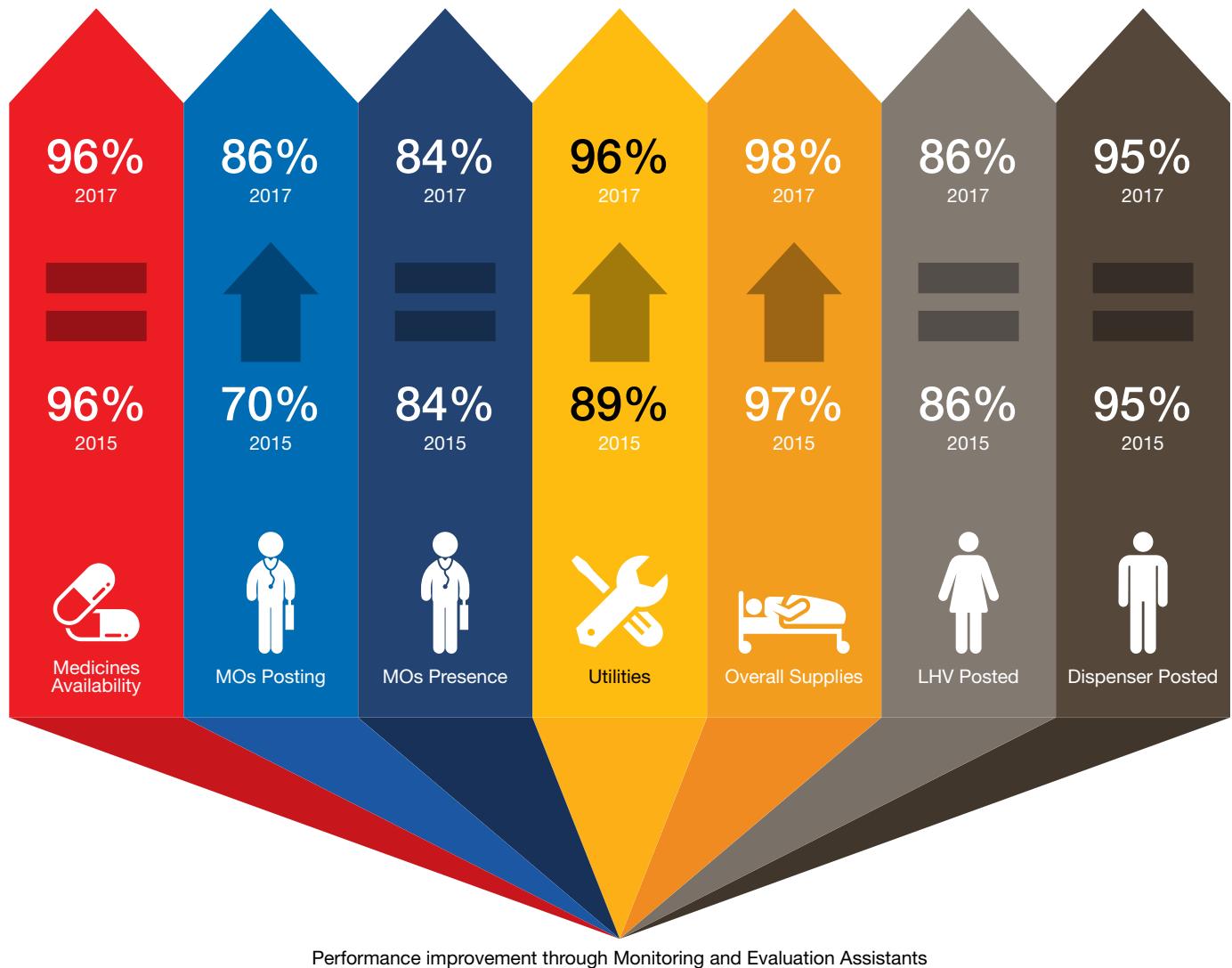
**MEA Primary Health**

**135K+**  
Visits



**Geotagged Images**

### MEAs Programme Performance Indicators





# Maintenance and Cleanliness System (MACS)

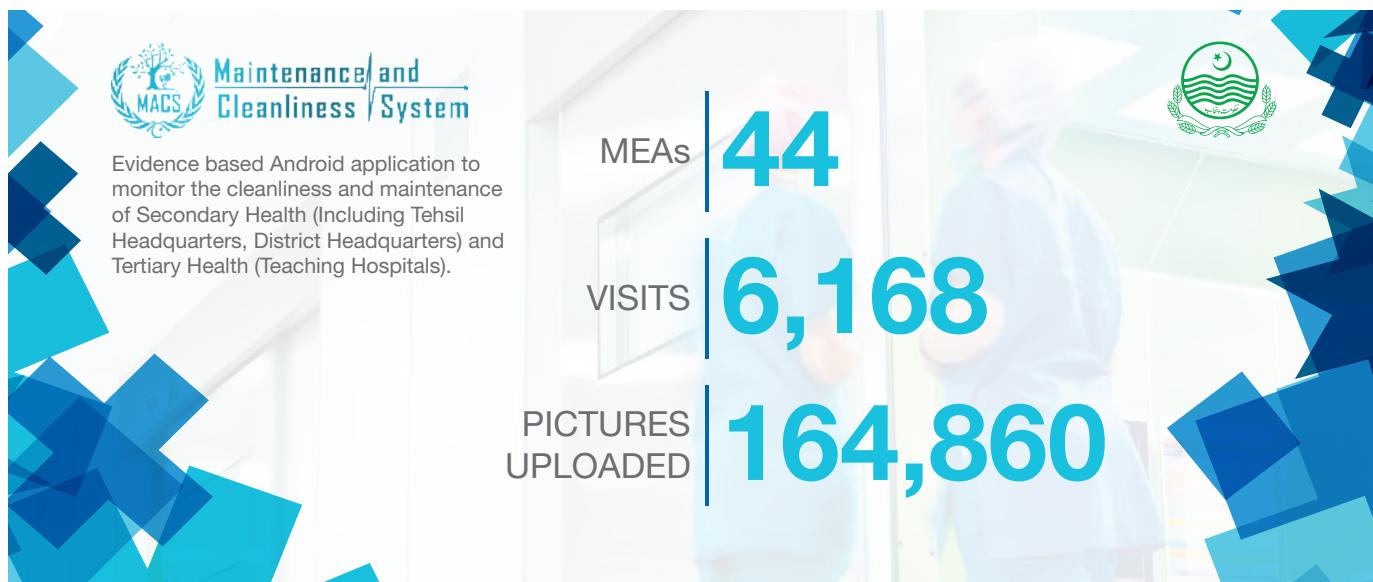
Cleanliness and hygiene at public hospitals was not very good. A mechanism was required for implementation of standard operating procedures and regulation of cleanliness at public hospitals.

The PITB developed the Maintenance and Cleanliness System (MACS) for secondary healthcare hospitals. This was an android-based application, which regularly checks maintenance and cleanliness at hospitals with the help of random surveys by Monitoring and Evaluation Assistants (MEAs) at various hospitals.

The system records the cleanliness and maintenance of wards, operation theatres, labor rooms, toilets, waiting ar-

eas, corridors, stairs, emergency rooms, mortuaries and outpatient departments. In addition, pictures are collected as proof so that chances of forgery while submitting data are minimised. The system provides a comprehensive dashboard through which the management can see hospitals which have poor hygiene and maintenance.

The system helped improve cleanliness and maintenance at public hospitals. From 14% cleanliness and 21% maintenance in early 2016, these numbers have improved to 65.29% cleanliness and 88% maintenance. So far, 6,168 visits have been conducted in 154 hospitals and 164,860 images have been uploaded to the system.



# Health Watch

## IT enabled performance audit of health facilities



Basic Health Unit (BHU)



Basic Health Unit (BHU)



Rural Health Centre



Tehsil Headquarter



District Headquarter

**1,778**

**803**

**305**

**109**

**34**

The Health Watch programme was launched in 2014 across Punjab with collaboration of the PITB. The purpose of the programme was to monitor the quality of health services extended to citizens of the province at all kind of health facilities.

Over 3,000 health facilities across the Punjab are monitored by 210 health officers including the Chief Executive Officer (CEO) Health, District Officer Health (DOH), and Deputy District Officer Health (DDOH).

The three major indicators being monitored through this programme are:

- Attendance of the staff
- Availability of Medicines / Stock-outs
- Review of the overall health facility condition / highlight non-functional equipment

Under this e-monitoring initiative, 210 android phones and SIMs with internet facilities were provided to the district health managers (DHMs). These DHMs follow pre-assigned monthly targets for visiting healthcare facilities in their respective jurisdictions.

The DHMs submit their inspection data through the Health Watch application developed by the PITB. The data

submitted through the application automatically pops-up on a map using GPS in real-time. Multiple other reports are available on a web-based dashboard for departmental review and decision-making.

The Health Watch programme has delivered exceptional results till now.

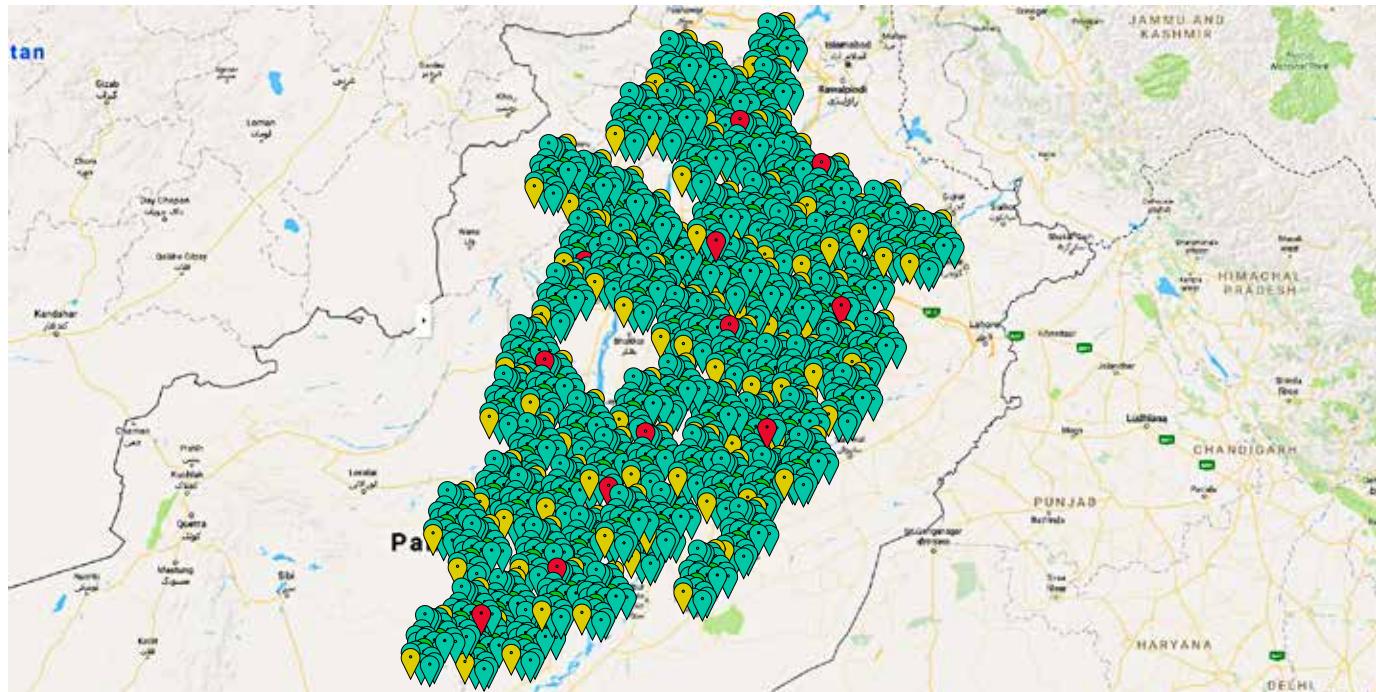
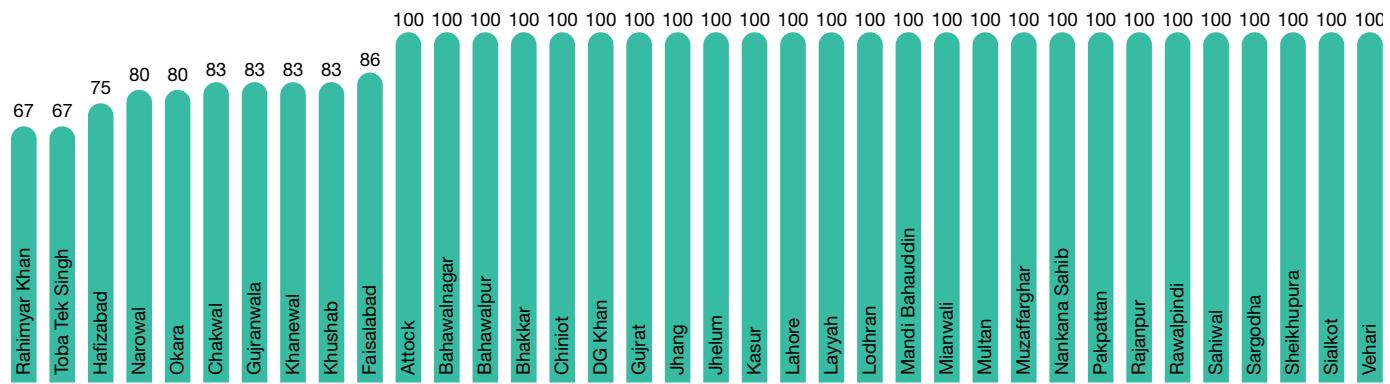
- The dashboard has received more than 110,000 entries from the field managers
- Staff attendance has improved from 22% to over 90% within a year

The Health Watch programme aims to empower public health sector managers at district level by providing them timely, authentic and well-tabulated information on the status of health facilities in terms of human resources, medicines, equipment availability/functionality and utilization of facilities.

Data shown on the dashboard is used for formulating and devising strategies by the relevant departments. The consolidated data gathered through Health Watch is presented monthly in a departmental meeting chaired by the provincial health minister and Primary and Secondary Health secretary.

## Compliance

Percentage





# LAW AND ORDER



Effective use of information technology has modernized the Punjab Police. This has not only helped curb crime but has also paved way for smart policing. Cooperation between the Punjab Police and the PITB has yielded commendable results. We hope our relationship with the PITB will continue to grow over the years.

**ARIF NAWAZ KHAN**  
IG Police



It is because of quality of work and professionalism of the PITB that Traffic Police in the Punjab chose to work with this organization. The collaboration has been a great experience and I am very satisfied with the performance of Driving License Issuance Management System (DILM).

**FAROOQ MAZHAR**  
DIG/Traffic Headquarters



We choose to collaborate with the PITB because of their professionalism and quality of work. They are highly organized and very easy to work with. Our department has had an excellent experience with the PITB and I am very satisfied with their performance.

**RAI EJAZ AHMAD**  
CTO Lahore



It has been a pleasure working with PITB. Support is essential for long-term projects which the PITB has been provided with great dedication. We look forward to working with the PITB in the future.

**SARFRAZ AHMAD FALKI**  
SSP/Traffic Headquarters



The PITB has been instrumental in introducing and spreading use of technology within governmental organizations. I have witnessed the hard work put in by PITB professionals in the digitization of government records, which is a herculean task. I wish them all the best in their future endeavors.

**SHUMAIL AHMAD KHAWAJA**  
Additional Chief Secretary



The Transport Department started collaboration with PITB a few years ago and has automated its route permit system. The PITB has helped create a system which makes our department effective and efficient. We look forward to their support in improving other areas of governance as well.

**NASIM NAWAZ**  
Secretary Transport



# Electronic FIR

2015-12-10 11:00:00	6	2018-12-10 10:00:00	1
2			2

**T**racking progress of investigation against each FIR at all levels of leadership, in terms of recovery and arrest had been a huge challenge in a paper based environment. Starting from FIR registration to culprit/ suspect nomination, investigation, case proceedings and closures etc. required a lot of manual and tedious work. Further, retrieval of FIR details when required was also strenuous and time consuming procedure. The manual work and repository made it difficult to monitor and track specific FIRs and/or crimes. All 25 registers maintained by each Police Station included pile of manual forms for crime reports, FIRs, Zimmis etc.

The entire FIR registration and tracking process along with other 24 record keeping registers have been automated. It covers full life cycle of FIR including registration, nomination of culprits, recoveries, arrests, case files, court proceedings and case closure etc. The system generates electronic copies of FIR as well as reports required at all lev-

els of Punjab Police leadership (from SHO to IG). It is integrated with NADRA, Police Human Resource Management Information System, Anti Vehicle Lifting System etc. which ensures data integrity across all systems and speeds up the data entry process.

The system has transformed traditional methods and established a new regime of modern policing. The programme is operational in all 714 police stations across the Punjab. It has eliminated registration of fake

FIRs and also improved police efficiency by replacing the manual work. All FIRs with their progress details are a few clicks away from police authorities. The PITB and the Punjab Police have also replicated this application for Sindh Police. Governments of Gilgit-Baltistan and Balochistan have also requested installation of the same software. Since its launch across the Punjab in March 2017, 878,000 FIRs were registered. This points to the receptivity and adaptability of this system in comparison with 311,895 FIRs in 2016.

**878,000**  
FIRs Registered in System

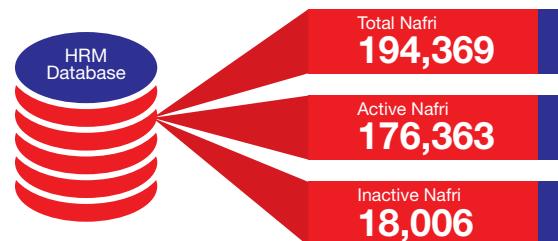
# Punjab Police HR Management Information System (HRMIS)

The Punjab Police lacked a comprehensive and retrievable online personnel database which contained their personal data, service history and ACRs (performance reports). Each officer had a paper-based file called Aamal Nama which contained his personal data including postings, rewards, punishments etc. The file required manual maintenance, was often incomplete and prone to tampering.



The HRMIS is a web application that records and maintains HR-related data of police employees. It has one module for officers of grade 17 and above and another for grade 16 and below. It contains complete personal details of each police officer, their service history and ACRs.

The HRMIS is operational in all 36 districts of the Punjab. All transfer and posting orders are generated through this system. The system also ensures that no fake transfer/postings and hirings take place because all orders are system-generated and QR code enabled which can be cross-checked with the system anytime. A police officer's performance is also gauged through the HRMIS. As many as 21,726 posting orders have been generated through HRMIS to date. It also contains online attendance of 85 police stations in Lahore. It has gained acknowledgement across the country and governments of other provinces have asked to replicate it in their jurisdictions. The Punjab Police and the PITB have deployed the HRMIS system in Sindh. It has enabled the Sindh Police Department to manage violations in the standard operating procedure (SOP) of transfers and postings.



# COMPUTERISATION OF POLICE STATIONS

## Complaints Management System (CMS)

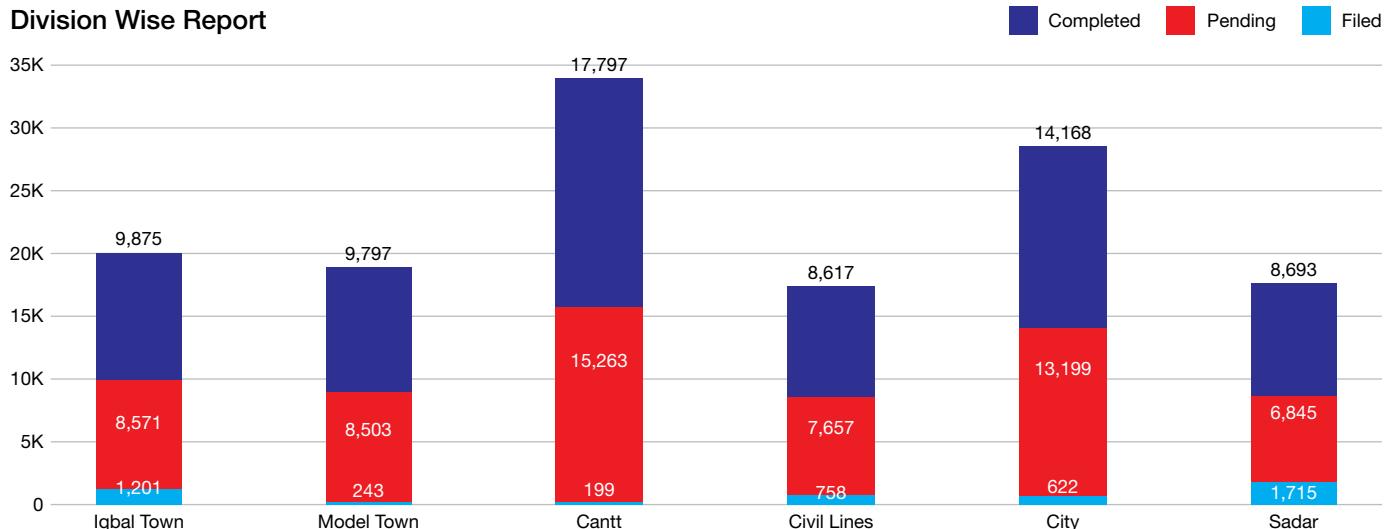
**R**egistration of a complaint (for example loss of an ID card or vehicle theft) at a police station used to be tedious work. The complainant had to visit the police station in person and there was no mechanism for follow-ups and no platform for police officials to check the total number of complaints at a particular police station. Police personnel were also considered unwelcoming and the procedures for lodging a complaint were unclear to the general public.

To resolve these issues, the PITB developed an automated web-based complaint management system. Details of the complaints and the complainants are entered in the system and a complaint number is provided to the complainant through SMS. Every police station in the Punjab has a front desk where police staff greet complainants and register their complaints in this system. The CMS system provides an interface to complainants to check the status of their complaint and a dashboard for police officials to monitor activity.

This system is operational across the Punjab. The system has helped bridge the gap between the police and the public. Police officers can now precisely know the details of pending complaints in every police station. This has helped them organise daily meetings at their offices to review the progress of these complaints and take action in this regard. As many as 1,194,802 complaints have been registered across the province and 871,812 were resolved.



### Division Wise Report




**COMPLAINT RECEIPT**  
 Police Station: North Cantt

Complaint No:	NC-7/3/15-1722	Complaint Date:	03 July 2015
Complainant Name:	[REDACTED]	Contact No:	[REDACTED]
Complaint Category:	Loss Report	Offence Category:	Miscellaneous
Assigned Officer Name:	Imran Akbar	Officer Cell:	03087777436
Status:	Pending		
Incident Report:	Loss of bike registration book no. LEN-[REDACTED]1		

For Feedback and suggestions please call any time at **0333-4111115, 03334111116** or visit [policereport.punjab.gov.pk](http://policereport.punjab.gov.pk)

# Criminal Record Management System (CRMS)

Previously it was a lengthy and tedious process to retrieve records of individual criminals based on name, father's name, caste and address. Further it was almost impossible to identify criminals of each district because there was no comprehensive and integrated criminal record system.

The PITB has developed the CRMS based on CNIC number. It is a digitised system that contains personal details (CNIC, appearance, photos etc.) of criminals. The idea is to maintain a comprehensive database containing complete criminal profile (including personal information, physical appearance, modus operandi, gang, criminal history, fingerprints, and photographs) that can be easily fetched via CNIC and/or biometric information as required. It is easy to retrieve and search over a web-based mechanism, smartphone or even SMS. For criminal record verification of suspects, biometric devices are connected to the CRMS. It is used for both live and latent fingerprints scanning and matching.

Now the manual fingerprints record is successfully digitised and available in CRMS database with complete profile of individual criminals. Multiple applications related to law and order are integrated with this digitised database: PSRMS (FIR Management System), HRMIS, Hotel Eye, Prison Management System and Tenant Registration systems.

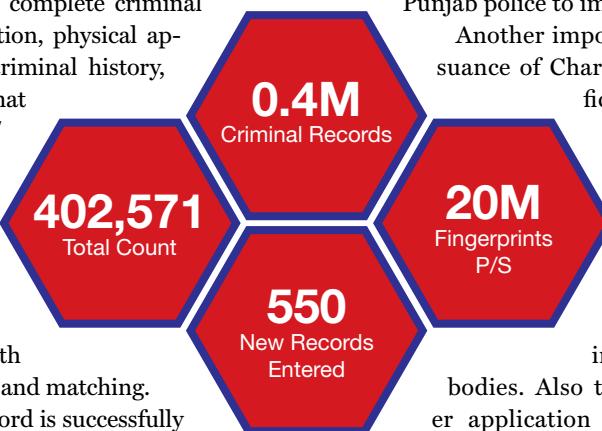
Using CRMS an investigation officer sitting in any police station of Punjab can apply his filters of known information and make a search in the central database. This system is being used in various ways to investigate any case. If a victim of a mobile

phone snatching incident reports in a police station and he remembers some details of the snatcher. An officer can apply all the known filters and search the criminal in his own district as well as in the Punjab server. More filters will have better chances of success. Based on the applied filters, the results will be shown on a screen and these pictures can be shown to the victim for identification. This system is present in each police station of the Punjab and the PITB team is constantly working with the Punjab police to improve this system.

Another important utility of this system is the issuance of Character Certificates. Now, a police officer just enters basic information of a citizen and instantly checks his/her the criminal history. No one with a criminal history can get the character certificate issued while other citizens get their character certificates very swiftly.

The fingerprint records are being used to identify the abandoned bodies. Also the fingerprints are used in another application Criminal Record Identifier (CRI) to identify criminals. The CRMS is equipped with the Megamatcher fingerprint matching library. It has matching speed of 20 million fingerprints per second.

The system also keeps logs of each entry and searches and records details in a dashboard. The district police officers (DPO) can always keep an eye on the performance and statistics of their staff and officers using this dashboard. On average 550 new records are entered into the system from all over Punjab.



# Criminal Identifier

Lack of proper identification documents served as major hindrance for law enforcement personnel when they tried to identify criminals and suspects. In the absence of identification papers, many criminals would pretend to be first-time offenders. Others would take refuge in different districts.

As a result, police and law enforcement agencies did not have a mechanism to maintain profiles of criminals. Finding information about one criminal from a huge set of paper records was almost impossible.

To resolve this problem, the PITB developed an application called Criminal Record Identifier (CRI). This application uses a fingerprint scanner device to scan fingerprints of a suspect. The CRI's fingerprint-based identification tool scans the suspects' fingerprint and compares it to a central database of fingerprints. The central database server contains database of criminals from across the province. The tool works at a speed of over 20 million matches per second.

The CRI has been installed in more than 200 stations across the Punjab. On average about 50 to 60 criminals are being identified per day from these stations. Since, November 1, 2016, a total of 107,707 requests have been made on the server and 14,302 matches were found. The performance of the CRI can be monitored by a dashboard in monitoring rooms of the CPO and CRO offices in Lahore. The dashboard shows statistics and a complete log of users. The PITB and the Punjab Police are constantly adding new features to the CRI to enhance utility of the programme.

If this programme is adopted by governments of all four provinces and the federal capital, criminals could be identified from all over the country from any station. Sindh Police has already started digitisation of their criminal records. Very soon Sindh and Punjab police will begin sharing their database of criminals.



# IG Khuli Kachehri (8787)

The office of Inspector General of the Punjab Police has a complaint cell that looks after complaints against police across the Punjab. Previously, complaints were received through post or submitted in person. The complainant had to travel to Lahore and visit IG's office to submit the complaint. It was a time-consuming process with no traceability mechanism. There was also no mechanism to check the status of the complaint and its resolution.

The PITB, in collaboration with the IGP's office, devised a state-of-the-art complaint cell through which complainants can lodge grievances through email, SMS and voice calls via a shortcode (8787). A dedicated team of more than 25 workers addresses the complaints. It is an efficient, transparent and error-free process.

A complaint number is sent to the complainant through the system. It is used as a complaint tracking number. The complaint is then assigned to a police officer who works on the complaint. The system provides an interactive dashboard and comprehensive reports. The management, in this case the AIG Complaints Police, has complete view of applications being submitted across the province.

This system is operational across the Punjab and has proven effective and helpful for the police staff in keeping track of complaints and their resolutions. The project has also been appreciated by the general public.

As many as 64,000 complaints have been logged through this system since its inception.



# Automation of Lahore High Court

The PITB has worked very closely with Lahore High Court to leverage IT such that the judicial processes are made more efficient, transparent and effective. A state-of-the-art enterprise solution has been rolled out to achieve this objective. Some of the features of this, and associated systems are:

- Electronic Case Filing & Institution
- Lawyers' e-Filing Portal
- Online Party Verifications
- Case file Digitization & Document Management
- Rules based Case Scheduling
- Online Hearings & Case Proceedings
- Copy & Dispatch of Physical Documents
- Hon'ble Judges Workbench
- Court Performance Analytics & Dashboards
- Helpline (1134) SMS alerts and mobile app

The project has been successfully rolled out in 35 courts in Lahore (out of the total of 60 courts in Punjab). For litigants, it has improved efficiency in day-to-day judicial processes. It ensures speedy justice for litigants and has removed prolonged waiting periods for case hearings. Each case now has a planned date for the next hearing. The system automatically generates dates for hearings and judges to be assigned to the case after comparing specialties, bench load and the court calendar. The system also has several benefits for lawyers. It saves time and

has reduced the number of visits to the courts. The lawyer's portal enables them to prepare and file cases online from their homes and offices. Lawyers also receive email and SMS notifications from the Enterprise Solution. The application has also been beneficial for judges, in that it offers them a personalised portal, calendar and performance dashboard known as the Judges' Workbench. It offers data on court performance and has improved executive control through checks and approvals. The application is accessible on mobile devices and offers secure and centralised data to the user.



# Hotel Eye



Previously, there was no real-time monitoring mechanism to keep track of visitors at hotels. The Punjab Police had made it mandatory for hotels to submit data of visitors and the hotels would send weekly paper-based reports to police stations. The process was time-consuming and lacked accuracy. It became a challenge for police to trace suspected criminals hiding in hotels.

The PITB developed a web-application to log check-ins/check-outs at hotels. It saves data of Computerised National Identity Cards (CNICs) and personal details of visitors. This sys-

tem is integrated with NADRA, PSRMS and CRO. If someone with a criminal record checks in, a notification is sent to the police and appropriate action can be taken in this regard.

In October 2016, the government of the Punjab made it mandatory for hotels to use the system to log guest details. Hotel Eye has helped police arrest more than 70 criminals so far. Making the Hotel Eye Software a permanent feature of the security process, the police have linked nearly 600 hotels using this application. As many as 1,260,591 check-ins have been registered across the province and 5,723 criminal record holders were traced.

# Tenant Registration System

Although records of house and landowners existed, there was no comprehensive database to keep track of tenants renting spaces in Lahore. According to the law, it is mandatory for tenants and owners of houses to register at police stations when signing contracts. This used to be a manual process and records could not be retrieved easily. There was no automated method to ascertain identity of tenants.

The PITB has developed a web-based application to register and monitor tenants who rent houses. Assistants at police stations use this system at front desks to register owners and tenants. The data is integrated with the Criminal Record Office (CRO) and the Police Station Record Management System (PSRMS) and if a tenant with criminal record rents a house, a notification

is sent to police officials who are able take action if required. The database built using this software is useful for police to search records of particular individuals or specific areas. A mobile app was also developed for initial registration of tenants.

The project is operational across the Punjab. It has provided police a comprehensive record of temporary residents in their respective jurisdictions. Law enforcement agencies are better equipped to handle breakdown of law and order through this application. In October 2016, a suspect with more than 30 criminal cases was residing in Faisalabad and was found through the PITB's Tenants Registration System. Across the Punjab, 637,635 tenants were registered since the project was rolled out and 7,532 criminal record holders were traced.





# Crime Mapping

In the past, the Punjab Police had relied on traditional intelligence-gathering methods to identify pockets of crime.

The PITB developed a web and android-based application to capture the location of a crime scene with a First Information Report (FIR) number, pictures and other details to determine the frequency of crime in an area and identify similar crime clusters. When an investigation officer visits a crime scene, he enters the location in this mobile application and geotags the crime scene. The data is then displayed on a dashboard for analysis.

The system is operational in Lahore and is being rolled out in other districts gradually. The Punjab Police is using this system to identify areas with the highest number of crimes, take intelligence-based actions and plan campaigns accordingly. Details of 319,978 crimes have been entered with geotagged data in Lahore.

The graphic features a blue background with a yellow diagonal banner at the top containing the text "CRIME SCENE DO NOT CROSS". In the center, there is a circular emblem with a crescent moon and three stars above a wavy pattern, surrounded by a wreath of wheat and cotton. To the right of the emblem, the text "PUNJAB CRIME" is written in large, bold, white and yellow letters, with "INVESTIGATION REPORTING SYSTEM" in smaller white letters below it. A large yellow banner across the middle contains the text "Web and android based solution to report crime scene location with FIR number, picture and other details to determine crime frequency and identify crime clustered areas." Below this, the text "TOTAL CRIMES REPORTED" is written in white, with "319,978" in large yellow numbers. At the bottom, there is an illustration of a hand holding a smartphone displaying a map with a yellow location pin.

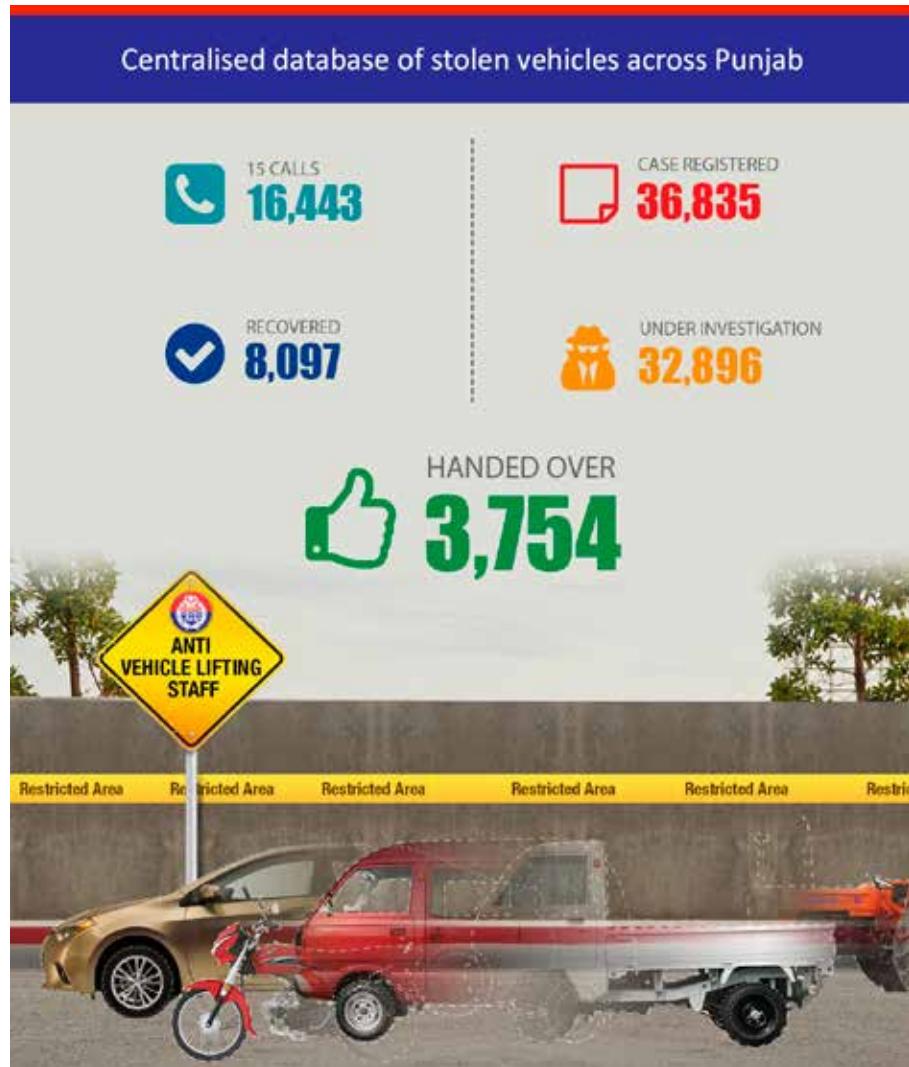
# Anti-Vehicle Lifting System

The absence of centralised record of stolen vehicles in the Punjab posed a great challenge for the police. Each district had its own record which was not integrated with other districts. There was no mechanism to verify vehicles at check posts which made it quite difficult to control vehicle theft and hindered recovery of stolen vehicles.

The AVLS is a web application which maintains a province-wide database of stolen vehicles. It includes theft reporting, investigation, recovery, Forensic Lab Test and handing over of vehicles to its owners according to court orders. This application is integrated with an FIR system, Excise and Taxation Department and the Punjab Forensic Science Agency (PFSA). It also provides a centralised monitoring system with an SMS alert and a comprehensive reporting dashboard.

With this centralised database, investigation of car theft cases has become efficient and effective. It has helped police capture many criminals and recover stolen vehicles. Because of this centralised database, a car stolen in one district can be traced if it is in another district.

As many as 36,835 car theft cases were registered in this system and 8,097 vehicles were recovered since the programme was launched.



# Smart Police Facilitation Centre (SPFC)

The Punjab Police has developed facilitation centres for the public known as Police Service Centres. These centres provide 10 major services. These include:

- Reporting missing or stolen documents
- Issuing character certificates
- General police verification
- Issuing copies of FIRs
- Issuing and renewing driving licences
- Tenant registration
- Employee registration
- Crime reports
- Legal aid

Although these centres provide essential services, their processes need to be streamlined for efficiency. The PITB has developed a software solution in this regard, known as the Smart Police Facilitation Centre (SPFC).

This is a web-based software which provides a one-window interface for front desk officers at these service centres. It is integrated with parent systems like the FIR management system and the complaints management system. The SPFC also provides

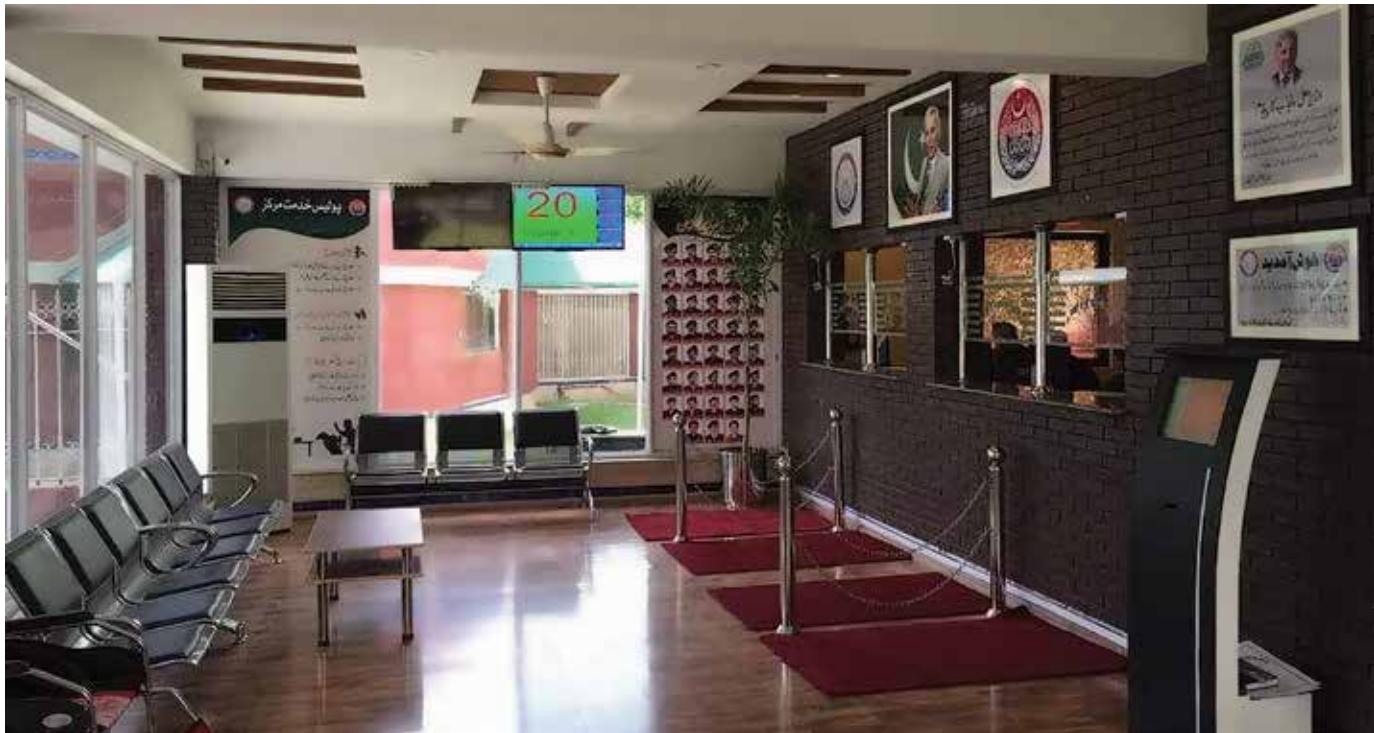
a comprehensive dashboard for police officers to monitor response time and the steps taken to address applications submitted by citizen. The system generates alerts for pending applications so that their processing can be expedited.

The SPFC Vehicle Verification Module provides a complete mechanism for verification of a vehicle. This module is integrated with Anti-Vehicle Lifting Staff (AVLS) system through which a vehicle's record can be checked. In addition, the system is integrated with Excise Department data which aids quick verification of vehicles.

The SPFC also generates character certificates, making the process automated and paperless.

The system is integrated with Criminal Record Office for background checks of applicants and with NADRA to avoid forgery. A citizen does not need to visit police stations and one can receive their character certificate in half the time taken by the manual process.





# Reforms in Motor Vehicles Registration

Previously, a decentralised system, known as MTMIS, was used for registration of motor vehicles across the province. Each district was working in isolation, with no record of other districts available to them for cross-checking or verification.

The PITB introduced reforms in the process for registration of motor vehicles. These reforms had four main components:

- Centralisation of the Motor Vehicle Registration MTMIS database
- Motor vehicle registration through licensed dealers (DVRS)
- Token tax stickers
- Specialty number plates
- Development of software for DVRS and specialty number plates

Reforms in registration of motor vehicles envisaged the following objectives:

- Outsourcing vehicle registration to licensed dealers
- Registration of vehicles at the time of sale
- Convenience of motor vehicle owners
- Eliminating time lag in collection of government revenues
- Enhancing government revenues

This project has enabled licensed motor vehicle dealers to enter data of vehicles through an interface in the MTMIS database for registration.

The Excise and Taxation Department issues token tax stickers to vehicle owners. These stickers are displayed on wind-



**13.3M**  
**TOTAL VEHICLES REGISTERED**

shields of vehicles which enable checking teams to identify defaulters. This system has also saved the vehicle owners from hassle and unnecessary checking.

The Centralised Motor Vehicle Registration System (CMVRS) is running successfully in 36 districts of the Punjab whereas Dealer Vehicle Registration System (DVRS) is being used in 10 districts with more than 40 dealers adding a new information almost every week.

# Legal Disputes Tracking System for Punjab Police

The Punjab Police has a legal department at Central Police Office (CPO) which deals with cases against its officials across the province. There are many types of cases against policemen. These include demands for registration of FIRs, changes in investigation teams or complaints against harassment by policemen. In addition, cases are also moved by police officials against the department for issues like delayed promotions or unfair dismissals.

Officers of the legal department appear for hearings at various courts, submit responses and ensure compliance of court orders. However, the volume of cases is so huge that it often gets difficult for the police to track court dates and submit their responses within the stipulated time. As a result, the Punjab Police is often penalised for contempt of court. In addition, there is no easy way to retrieve old case files because of poor maintenance of records.

In a bid to resolve this issue, the PITB developed an IT-based solution which helps the Punjab Police follow up on cases and court dates on time. Court cases are entered in the system with their respective hearing schedules, deadlines and compliance dates. The system automatically identifies actions which must be taken by the police in this regard. The system is designed to aid the legal department complete its tasks in an efficient manner. The system has remarkably improved the performance of the legal department. Police officials now know their court dates in advance which gives them enough time to prepare their cases. When a court date is near, the system automatically generates alerts through SMS to the officials concerned. In addition, a dashboard in the system provides a summary of the total number of cases being heard in various courts.



## Case Management System for Police Legal Department

Supreme Court		166
High Court		2,419
Civil Court		62
Punjab Service Tribunal		2,076
Total		4,742



# Call Data Records-Based Crime Analysis

The Punjab Police and the Counter Terrorism Department (CTD) do CDR-based analysis for major crimes.

They acquire call record data from telecommunication companies and identify criminals based on their calling patterns. This was previously done manually in excel files, making it a time-consuming process prone to errors.

The PITB, in partnership with the Punjab Police, has automated the entire process through an analytics platform which imports of CDRs into the system and analyses the records

with reports and filters.

The CDR system automatically identifies suspects based on suspicious calling patterns and activities (e.g. multiple SIMs used in one IMEI or receiving calls from a foreign country). The system provides a complete profile of suspects, fetching their data from all systems integrated at the backend. The police has traced numerous suspects using this software which also keeps records closed cases which details of suspects, their calls patterns and their known associates.

## Crime Intelligence System (Call Data Record System)



**107M**

Total CDRs Uploaded



**12,021**

Total FIRs / Cases Analysed



**1,405**

Total FIRs / Cases Closed



**83,269**

Total Reports Analysed

### Interactions Between People



### Interactions by Location

Location: Anarkali, Garden Hotel,  
Property No. S-64-R-10, Main Bazar  
Anarkali, Lahore: 31.5755:74.3128  
Total Number of Calls:

Location: Gulberg-II Water Tank,  
Gulberg-II, Lahore.

Location: Jail Road, 56 - Jail Road,  
Gulberg II, Lahore.

Location: Surgimed Hospital,

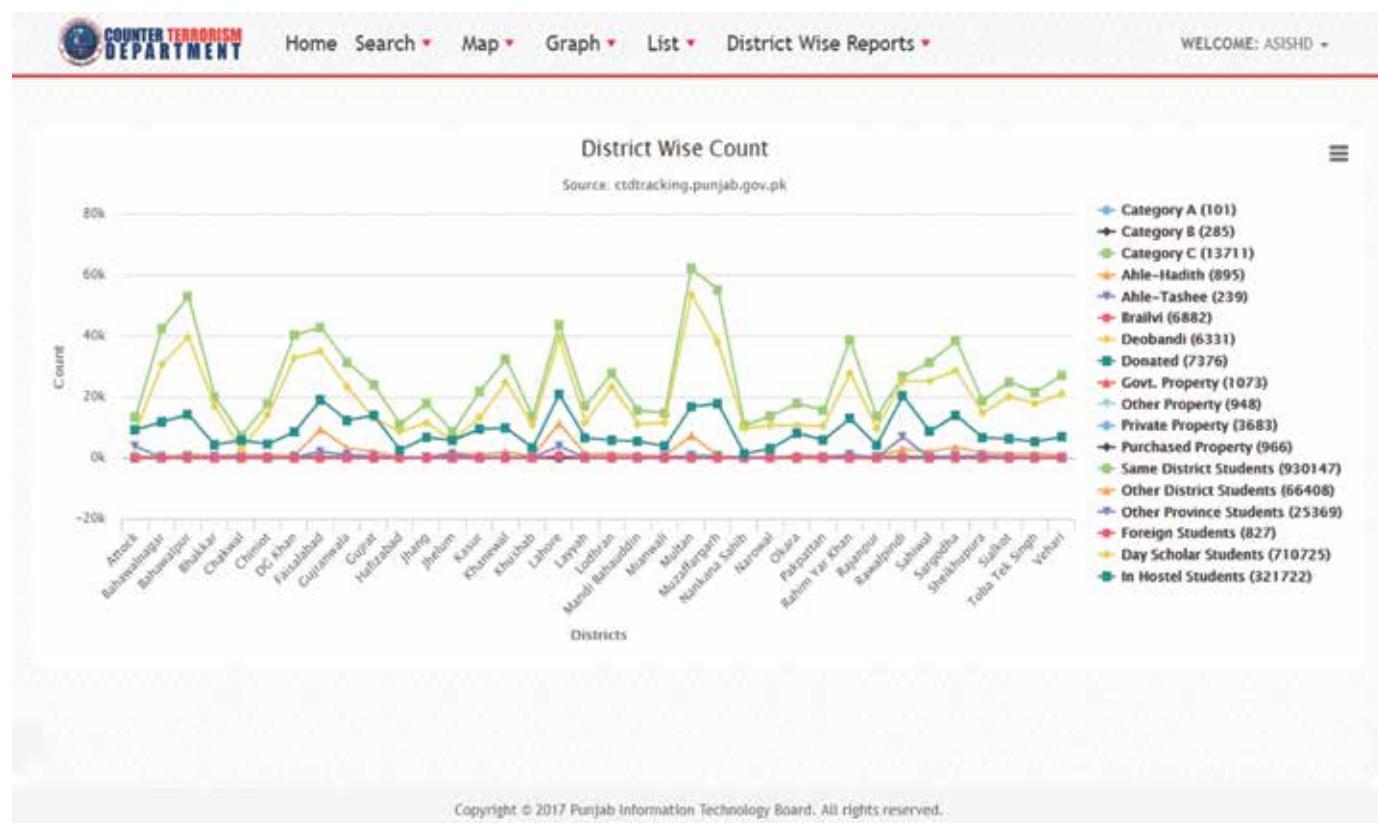
# CTD Geotagging

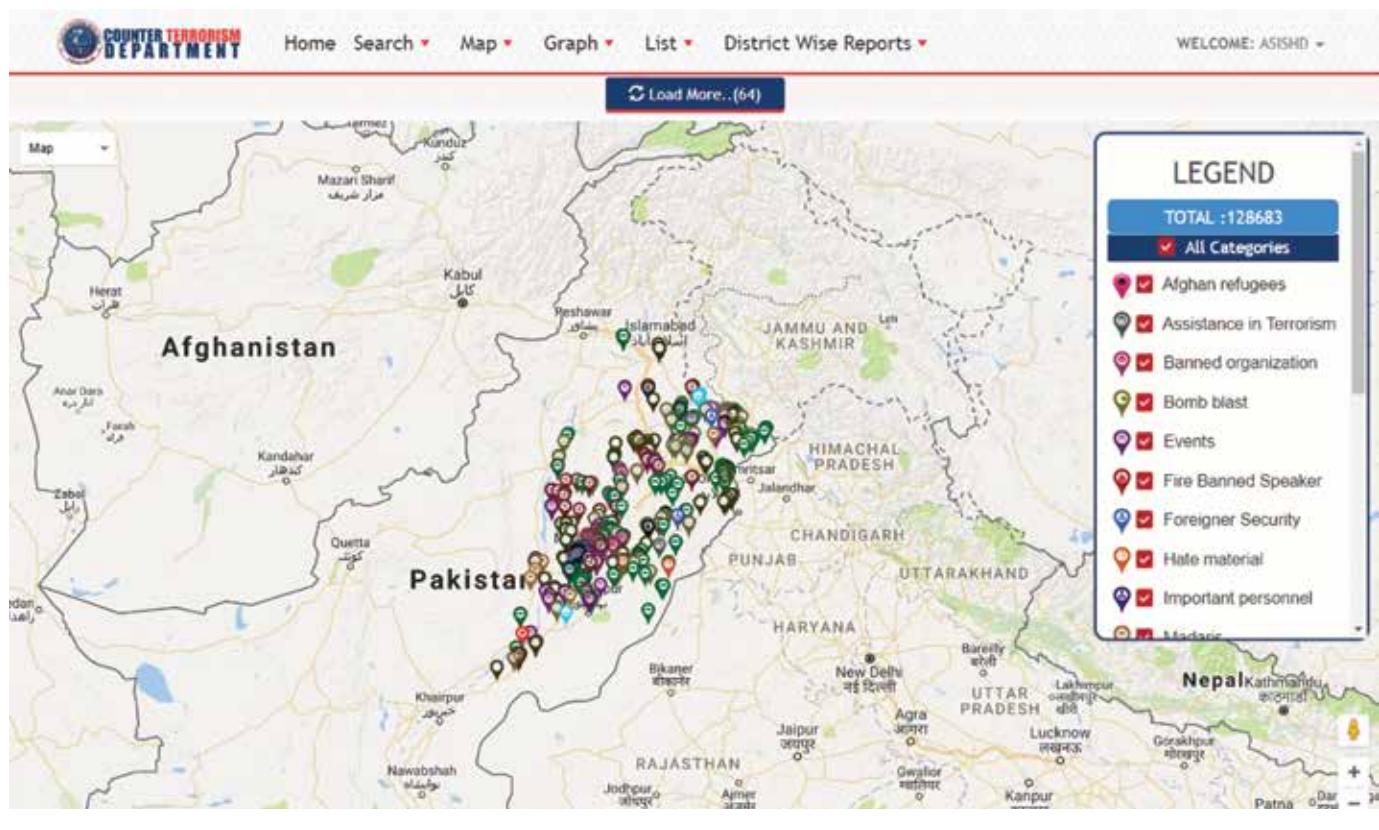
After the Punjab Counter Terrorism Department (CTD) was formed, it was discovered that there was no comprehensive and centralised database of vital information related to madrassas, mosques and other places of worship.

The PITB then developed a centralised system based on an android application to gather this data and geo-tag 20 categories of important places. The data was then uploaded to a dash-

board to identify locations of these places and analyse the information gathered through this exercise. Tabular and graphical reports are available for cross indicator analysis of this information across the Punjab.

The project improved efficiency of the CTD and made available centralised information across the province. It also aids data analysis and investigation.





**21**

Place Categories

**129K**

Important Places Tagged

**36**

Districts Covered

# Beat Book for Punjab Police

Officers of the Punjab Police are assigned beats for monitoring and surveillance. There are four or five beats in the jurisdiction of each police station and officers are assigned one beat each. Traditionally, intelligence was collected through these beat officers. A beat officer was required to keep a record of all incidents, crimes and citizens requiring extra security in their beat. These officers used to maintain a Beat Book at their police stations. However, there was no central database where data of beats of police stations in various districts could be kept and retrieved easily.

The PITB developed an application for the Punjab Police which allows beat officers to enter details of their beats in an online system. Using this software, a beat officer can add his own data and view information on all other beats under the Punjab Police. The database contains a list of public buildings, known criminals, people under surveillance and other important details of a beat.

This system is operational in all 36 districts of the province. It has been instrumental in helping police device patrolling schedules and routes based on the intelligence

gathered by this system.

It contains detailed record of 3,598 beats across Punjab which comprise 259,675 total data items.



# Punjab Police Toolkit

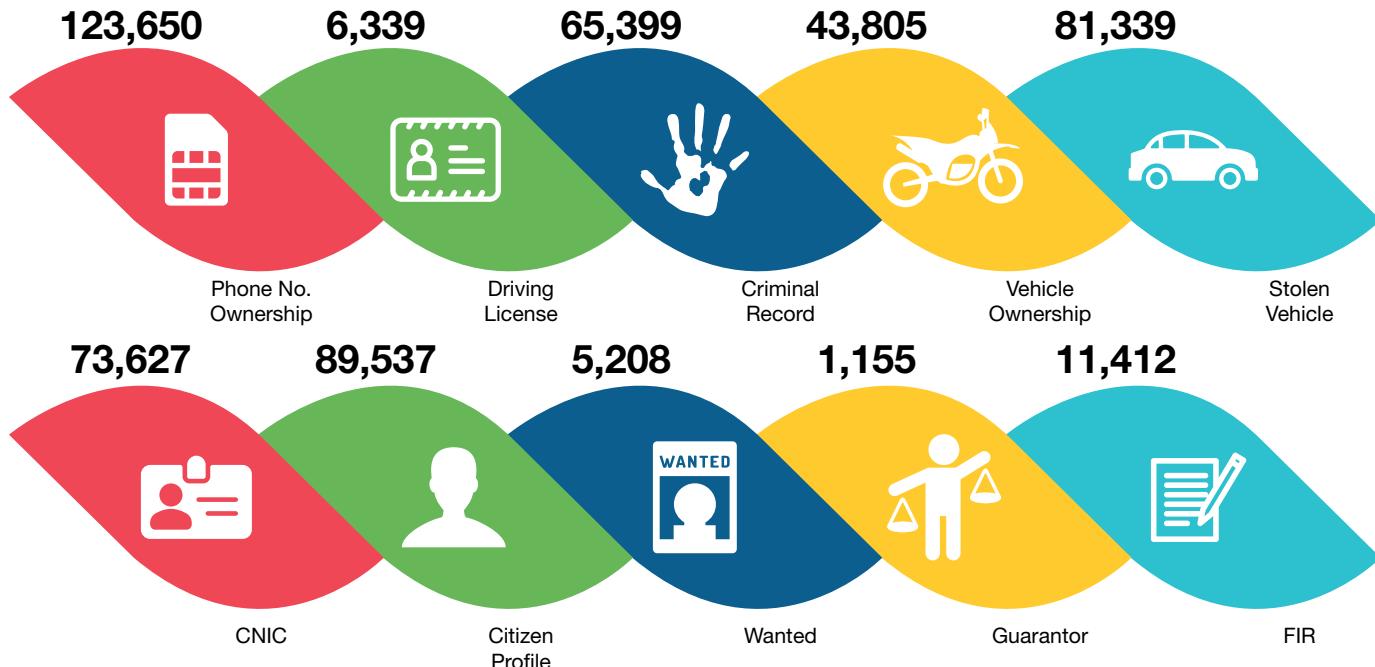
The Punjab Police is a large workforce and most field officers require access to various datasets for cases under investigation.

The PITB developed a mobile application through which access to these datasets could be provided to authorised police officers in real-time. An android application was developed and officers were trained in the use of the application. Police officers using this application can now access all police-related data through this system. At the backend of the application, a log of each activity in the system is being maintained and requests of every user

can be monitored. The monitoring incharge can see how many vehicles were checked by a particular officer. Daily performance can be monitored and high achievers can also be tracked using the dashboard, incentivising good work.

This project has benefited investigation officers immensely. They can access required information within seconds rather than commuting to a certain office to get the information. The application has aided arrests of suspicious persons and recovery of stolen vehicles. Another feature of the application is that it is connected to an integrated database, connecting all 36 districts of the Punjab.

## Police Toolkit



# Citizen Biometric Verification System

**P**reviously, policemen working in the field or at checkposts did not have any technological support. They checked various people and relied on their intuition to identify a suspect or a criminal.

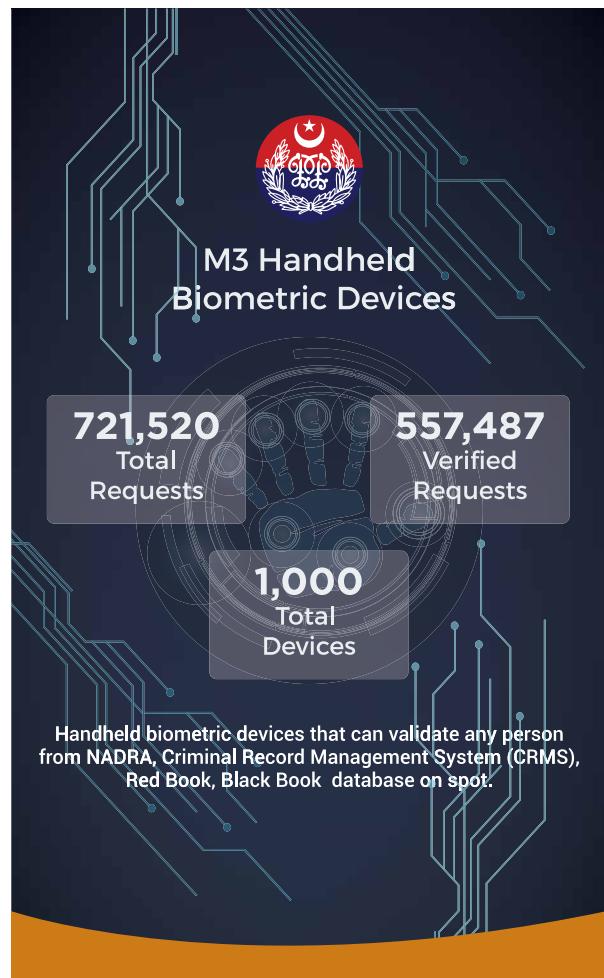
Often, national identity cards carried old pictures and it was not easy to correctly recognise a person with the picture on the identity cards. Many times, suspects refused to provide their identity cards. Moreover, there are many Afghan refugees living permanently in Pakistan who do not have national identity cards and are, instead, issued Proof of Registration (POR) cards for their identity. All these factors hampered correct identification of suspects in the field or at checkposts.

The PITB procured M3 biometric devices and programmed them to deal with these issues. The devices are connected to NADRA and criminal databases through a server. They are also connected to the Red Book, Black Book, 4th Scheduler and Habitual Criminals database.

A user can take the suspect's national identity card number and take their fingerprint scan with a handheld device. This provides instant verification from the server. The server connects to the NADRA database, Criminal Record Management System (CRMS), Red Book, Black Book and reveals the full history of the suspect in seconds. In the case of Afghan refugees, the system connects to relevant database. If the subject does not produce the national CNIC or POR numbers, the system can search the suspect's presence in criminal databases using their fingerprints.

This system is used by the police in all search operations. It was used in the operation against Chotu Gang in the Kacha area of Rajanpur. It was used several times at Raiwind Ijtema and other public gatherings. It was also used by police when the Zimbabwe cricket team was visiting Pakistan and during the final game of Pakistan Super League held at Qaddafi Stadium in Lahore.

More than 1,000 devices were distributed among policemen and other security agencies in the Punjab. As many as 840,491 requests have been generated from these devices to date.



# Prisons Management Information System

## Daily Statistics From the PMIS Dashboard



Previously, prison inmate data was recorded on registers. Management and retrieval of these records was quite cumbersome. The data included detailed information about legal histories of inmates housed in various prisons. This included the date of their admission, their fingerprints, their court dates, jail transfers, medical histories, parole and crime details.

The government of the Punjab felt the need to update prison records to strengthen the criminal justice system. The PITB developed the Prisons Management Information System (PMIS) for this purpose. It was implemented in Lahore District Jail as a pilot project. Salient features of PMIS include:

- A comprehensive online database of more than 3,000 inmates which uses an automated fingerprint identifi-

cation system (AFIS)

- Planning and execution of reformatory measures
- Regulation and management of day-to-day affairs related to courts
- Facilitation of the public through fast-track registration of interviews and instant redressal of public grievances
- Maintenance of a comprehensive database of prison staff, including their career profiles, salaries, bank accounts and HR-related data
- Stock and inventory management, which includes management and automation of the grain godowns, medicine stores and other miscellaneous stores.
- Automation of budgeting, procurement processes and financial transactions

The PMIS will be integrated with the following:

- The Home Department
- The Punjab Police
- Lahore High Court
- The Anti-Corruption Establishment

The PMIS has ensured efficient control and management of jail affairs. It requires less manpower and time. It also aids instant and informed decisionmaking and planning. It has significantly facilitated visitors. Through the PMIS, information of 49,776 prisoners, 8,503 visitors and 136 patients hospitalised in the jail has been gathered.







# EDUCATION



The School Education Department has been working in close collaboration with the Punjab Information Technology Board (PITB) and developing ICT-based systems which enables effective management of the department. These systems help the department make timely, evidence-based and informed decisions.

Our partnership with the PITB is a win-win situation for both the departments. I am sure that collaborative work with the PITB will result in better access, quality, equity and good governance.

**DR. ALLAH BAKHSH MALIK**  
Secretary School Education

# Real-Time Monitoring of 47,856 Public Schools Across the Punjab

In 2014, the School Education Department collaborated with the PITB to equip monitoring officers with SIM-enabled tablets to help them submit visit forms online.

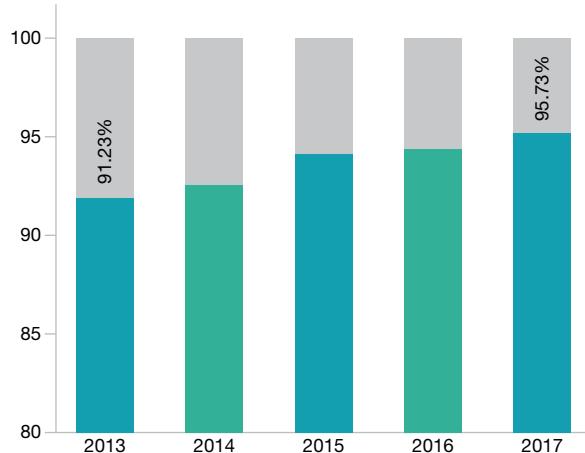
Over 1.3 million visits have been processed via the tablet-based system. Data is collected on teacher presence, student

enrolment, attendance and availability of safe drinking water, electricity and toilets.

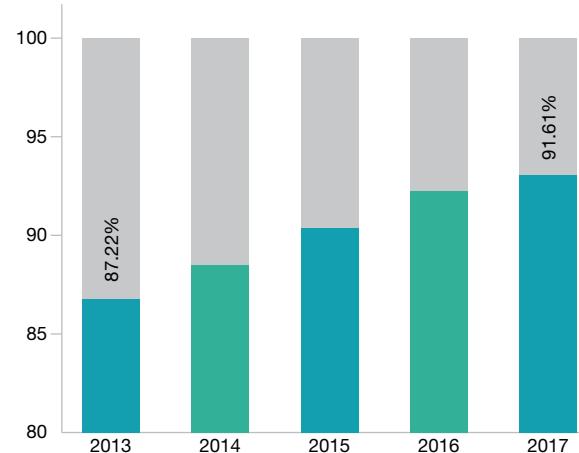
Free public access to data is available. Website visitors can navigate their way down to actual forms submitted by MEAs, subscribe for auto-alerts and even challenge the data reported.

## Smart Monitoring of Schools

**4.5%** IMPROVEMENT IN TEACHER PRESENCE



**4.4%** IMPROVEMENT IN STUDENT PRESENCE



Free public access: [open.punjab.gov.pk/schools](http://open.punjab.gov.pk/schools)



Total Schools  
**47,856**



Total MEAs  
**1,100**



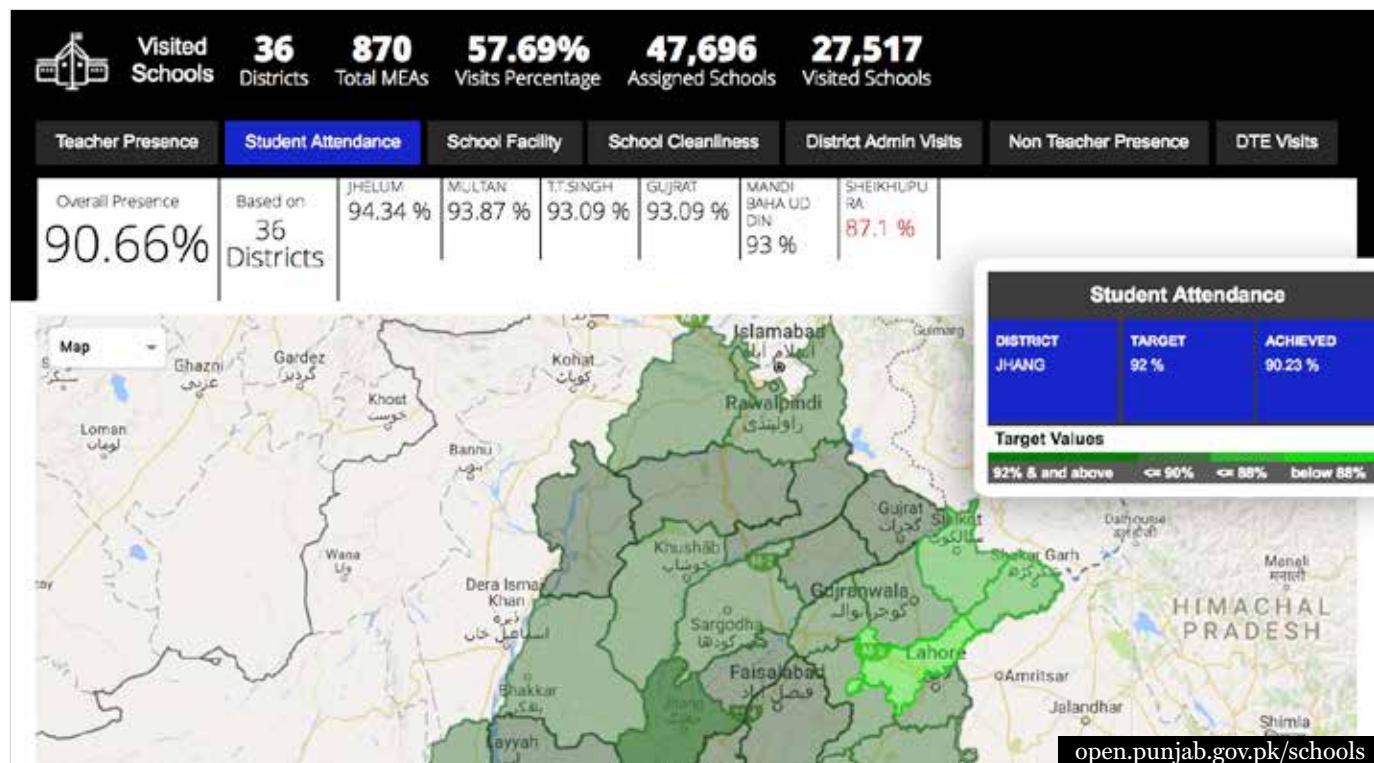
Total Visits  
**1.375M**

## THE TRADITIONAL METHOD

- Paper-forms filled for each school visit
- Back-office data entry involving several layers of officials in the field as well as Center
- Data tabulation and analysis done in Excel, which would take several weeks to complete
- Concerns regarding data quality – no way to ascertain if forms were filled on site
- Identification of errors and those responsible was a constant challenge

## THE TRANSFORMATION

- Tablet-based mobile app to record each school visit
- Improved speed and quality of data-collection – due to pre-populated fields and built-in validation
- Geo-tagged pictorial evidence of each visit – identifying visit location, date, time, and MEA.
- Timely escalation via automatic SMS alerts to education officials - listing schools with below target performance
- Improved officer accountability and compliance to assigned schedules.



# School Information System for Public Schools

In April 2017, the School Education Department collaborated with the PITB to institutionalise a tablet-based School Information System (SIS) - allowing schools to self-report data in real-time.

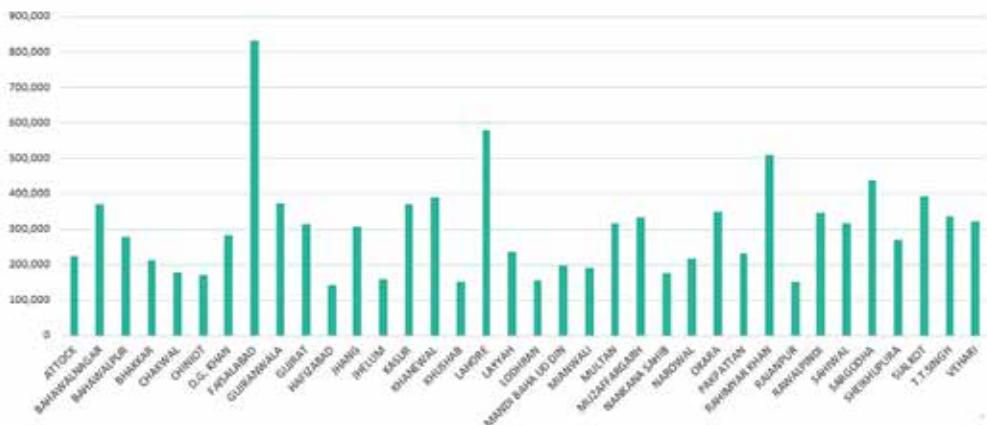
"The system helps track enrollment and retention for each individual student. So far, public schools in the Punjab

have registered 10.6 million students.”

For each student, the CNIC numbers of their parents/guardians, phone numbers, date of birth, enrollment year and current grade, is maintained in the database. CNIC numbers are verified via the NADRA database for authenticity.

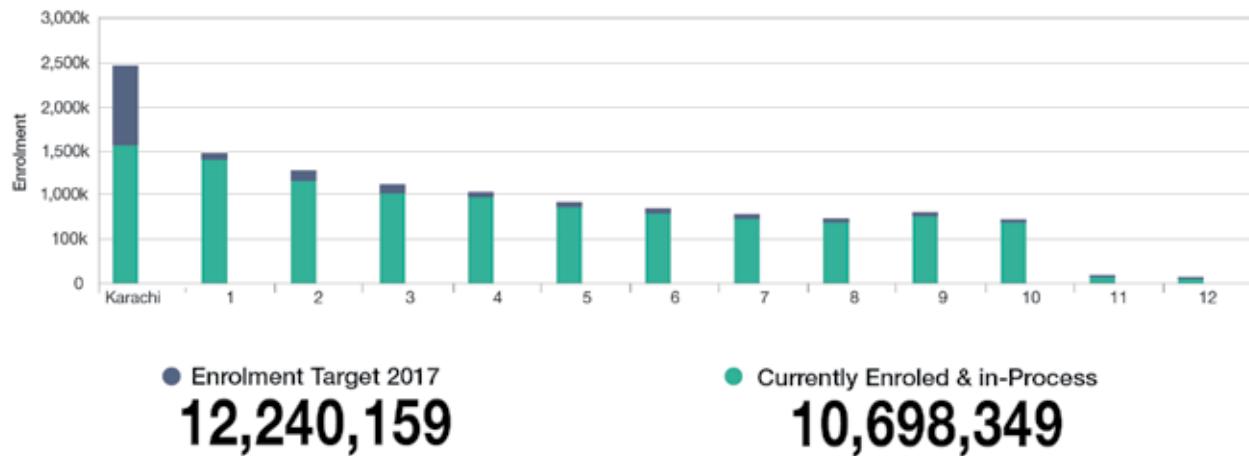


### District Wise Enrollment



<http://open.punjab.gov.pk/schools/sis>

## Current Enrolment (class-wise) Comparison with Target 2017 in (All Punjab / All Wings)



To gauge quality of data, the PITB has also engaged call-center services to randomly select schools and call parents who have been registered in the system by schools. The feedback is routed to the School Education Department.

### KEY FEATURES IN PLACE

- Student registration module – to enroll students from K through 12.
- Teacher registration module – to maintain updated teacher profiles
- Student attendance tracking
- Local database on tablet, and auto-sync with central server
- Real-time reporting and analysis – by district, grade, gender, and yearly comparison

### NEXT STEPS

- Real time reports via smart-phone app, and SMS alerts for Education Administrators
- SMS-alerts to parents, if student attendance falls below threshold, or when MEA complete school visit
- Timely data access for MEAs, when they perform spot-visits to schools
- An iris-based attendance system has also been developed and tested. Integrated with SIS, this could serve as a viable solution for teacher and student attendance.

# Measuring Student Learning Outcomes – Cost Effectively

**T**raditional methods of large-scale student assessment (such as PEC) are costly, complex and infrequent.

In 2015, the School Education Department and the PITB implemented a low-cost, tablet-PC based student assessment app - used by School Monitoring Officers during their monthly visits to each school.

The assessment app is linked to an extensive question-bank and each question is tagged with the relevant student learning outcomes. Currently, MEAs randomly select students from Grade 3 and carry out on-spot testing for English, Mathematics and Urdu across all public schools in the Punjab.

Almost 5 million assessment tests have been conducted by MEAs. The data is shared with education administrators via an online dashboard and SMS-alerts.

## BENEFITS

- The platform is an enabler for low-cost, frequent student assessments at scale
- Teacher presence and in-class student learning is being positively impacted
- This approach has helped baseline and benchmark learning levels between public schools and low-cost private schools in the Punjab
- Teachers and school administrators have become aware that consistent low scores on SLOs get highlighted in School Reforms Stocktake meetings, so they are taking steps to teach better.



This assessment platform can be extended for any grade level, as and when the School Education Department decides to measure student learning outcomes for other grades as well.



## LITERACY AND NUMERACY DRIVE



# 4.87 Million

TOTAL ASSESSMENTS CONDUCTED



# 47,856

TOTAL SCHOOLS



# 1,100

TOTAL MEAs

**“**We have probed into the cause of improvement in scores, and one of the most distinguished factors are the tablet-based LND tests conducted monthly in each school by the MEAs. **”**

**Taimur Khan, Partner, McKinsey & Company**  
Punjab Education Sector Reforms Program



# Automation of Large-Scale Examination Systems

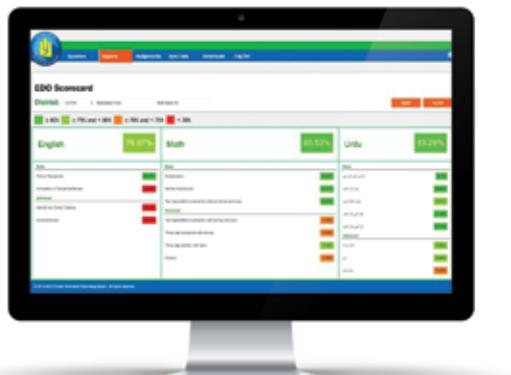
The government of the Punjab carries out annual assessment of almost 2.4 million grade 5 and Grade 8 students across the province. At this scale, efficient systems and processes are a fundamental requirement. Since 2014, the Punjab Examination Commission (PEC) has worked with the PITB to implement an integrated IT-enabled system for student registration, exam conduct and results processing.

These examinations are carried out by the PEC. Traditionally, the PEC used to employ a labor-intensive manual registration process with extensive back-office activities to register students and to process and disseminate results.

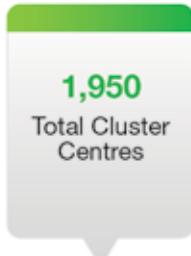
“To curb paper leakage and cheating, the exam generation software enables the PEC to create several versions of each exam automatically, based on selection parameters.” In coming months, data related to assessment (including performance level comparisons at regional, district, and provincial level), would be made available to schools on their tablet-PCs. Education administrators including CEOs, DDEOs, and AEOs will also be provided timely access to school and regional level results and analysis via their smart phones.

Automation of the PEC examination processes has shown significant results:

- Improvement in speed and accuracy during student registration and marks entry
- The recently provisioned item-bank software enables PEC to build a secure database of questions – with each question tagged with different qualifiers including SLO, grade-level, difficulty-level, taxonomy rating, item-aggregating, and usage history
- Ability to create multiple versions of each exam paper – thus minimising the possibility of cheating
- Timely and transparent dissemination of results



**Automation of PEC**  
**Punjab Education Commission**  
**Government of the Punjab**



# College Admissions – Online, not in-line!

**E**ach year, hundreds of thousands of students apply for admissions to public colleges across the Punjab. For these students, the process is costly and time-consuming. For colleges, it's all about long queues, unpredictable workloads and a host of complaints. The Higher Education Department worked with the PITB to implement a standardised admissions application mechanism that is simple, convenient, and cost effective.

The Online College Admissions System (OCAS) is designed to:

- Reduce the number of physical visits of students and parents to colleges, as admissions get underway
- Keep the admissions process simple, convenient and transparent
- Considerably reduce the application compilation and merit list preparation time

Nearly 1 million admissions applications have been processed via OCAS in recent years. Key features include:

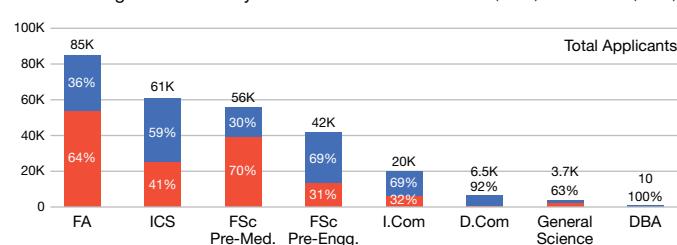
- 24/7 availability. One can apply from any place with internet access by logging on to [www.ocas.punjab.gov.pk](http://www.ocas.punjab.gov.pk)
- Nominal application fee (Rs 25 per programme), paid via a network of bank branches across the country
- Admissions application tracking via OCAS website
- Integration with BISE results, minimizing data entry and reducing errors
- Dedicated helpline and online help guides to facilitate students

“Several colleges now mandate that students apply online, even if that means providing computer lab facility during admissions – since it saves them the hassle of manual data-entry and report tabulation.”

There are plans to upgrade OCAS and to integrate it with mo-



Online College Admission System



bile payment platforms – to further streamline the application fee payment process. OCAS could also be enhanced to facilitate BA/BS admissions at colleges.

# e-Learn Punjab – Localised Ed-Tech Solutions

The government of the Punjab continuously seeks innovative solutions that can help improve student learning outcomes for public school students.

The School Education Department has been working closely with the PITB to develop, test and implement e-Learning solutions for public schools.

Highlights of achievements:

- PCTB textbooks for Grades 6 through 10 have been digitised and augmented with thousands of interactive multimedia components
- Topic-based video lectures have been recorded with the help of experienced instructors in local languages
- Terrain-viable classroom technology solutions have been developed so that multimedia content can be used in class
- Detailed lesson plans, including relevant multimedia components, formative assessment modules, and class room activity lists, have been developed for certain grades
- Free, online content is available via the e-Learn Punjab website, and offline content has also been developed for parents and students

“Ed-Tech solutions, including tablets for teachers, LEDs in classrooms, tablets for students, tablet-based smart-labs, and m-learning systems have been tested”

Implementations have been done in 250 classrooms - impacting 10,000 students, and hundreds of teachers. The results have helped improve our e-Learning content, develop monitoring systems to track usage and plan for large-scale rollout.

The government of the Punjab intends to leverage e-Learning content across public schools in a phased implementation.





# PROCESS AUTOMATION

# e-Filing and Office Automation System (e-FOAS)

Government departments have to maintain a paper-based file for notes, approvals or proposals so it is imperative that these records remain easily accessible. In many cases, heavy losses were reported by various departments because a critical document was lost. The PITB has developed the e-Filing and Office Automation System to enable timely and effective management of official daily tasks and proceed towards a paperless office environment in the public sector. The main objective of this management software is to ensure that every correspondence is digitally accessible round-the-clock.

Digital copies of every official document are made and uploaded onto the system. These copies are also stored on a cloud server and archived for future use and reference. The e-FOAS also schedules meetings in a more efficient manner with the help of a scheduler which is backed up by an

iOS/ Android mobile application. The application sends an SMS to all intended participants and notifies them about meeting timings and location. The system has minimised turnaround time for approval of notes, documents, office orders and notifications, resulting in increased efficiency. The PITB is in the process of deploying this system in 13 public agencies including the Law Department (GoPb), the Lahore Waste Management Company (LWMC), Bahawalpur Waste Management Company (BWMC), the Punjab Forensic Lab (GoPb), Chief Secretary's Office and Camp Office, Planning and Development Department (GoPb), Finance Department (GoPb), Ombudsman Office (GoPb), S&GAD (GoPb), DIG Operations Office in Lahore (GoPb), the CPO's Office, District Bahawalnagar (GoPb) and Overseas Pakistani Foundation Pakistan (OPF).

## e-FOAS Statistics

Departments	Diary & Dispatch	Workflows	Internal Workflow	Closed Workflows	Note Sheets	Carbon Copies	e-Record Room Files	Meetings Scheduled
LWMC	2,024	2,332	1,141	1,400	2,047	5,582	565	-
Services Department	20,672	22,819	-	14,637	1	1	19	-
Finance Department	1,044	1,064	30	62	9	1	4	4,738
Law Department	4,446	4,527	-	345	1	-	11	11
P&D Department	1,289	1,390	97	80	1	4	50	-
I&C Department	10,225	-	-	-	-	-	-	-
CS Office	10,645	-	-	-	-	-	-	-
Total	50,345	32,132	1,268	16,524	2,059	5,588	649	4,749



**e-Filing & Office Automation System**  
Punjab Information Technology System

24-Jul-2016 - 24-Jul-2017

145 Total Users

5,582 Total Carbon Copy Documents

9,170 Total Noting Paragraphs Initiated & Closed

2,047 Total Note Sheets Initiated & Closed

2,332 Total Workflow Assigned Tasks

2,024 Total Diaries Dispatched Documents

Meeting Schedule Reports

Dashboard eGDSMS

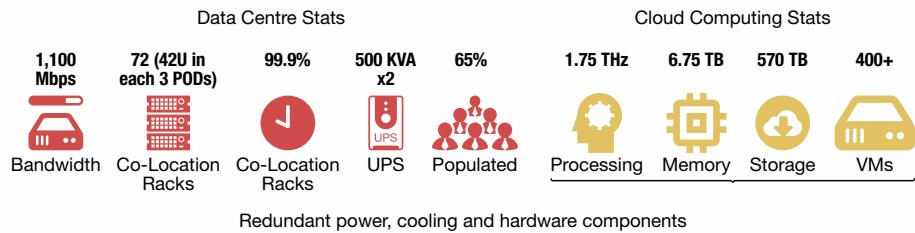
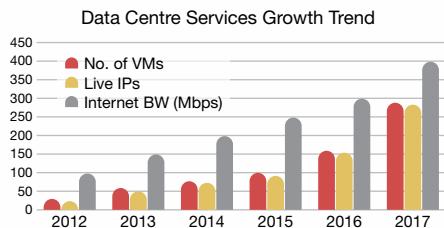
**Documents Pending (Subordinates)**

Subordinate	Total	Not In Time
Navneet Kaur - GM	1	0
Rupinder Singh - GM	3	0
Abdul Rehman - Sr. Manager	3	0



APC

# PITB Data Centre



**D**istributed and small-scale data centres and server rooms dispersed across various government offices faced the challenge of maintaining round-the-clock power supply and cooling, as well as upkeep of servers and services. Departments also needed to maintain reserves of fuel and run gensets during power outages and employ extra technical staff in shifts for 24/7 operations. Despite these measures, services often faced frequent downtimes.

To resolve these problems, the PITB has established a Tier-III Data Centre at Arfa Software Technology Park for consolidation of IT services deployed across provincial government departments.

The Data Centre offers co-location, IAAS, PAAS, and other cloud services to both the public and private sector. The centre is equipped with latest technology infrastructure for sophisticated and powerful computing. It meets critical cost controls with lower operational expenses through its converged infrastructure technology and delivers exceptional reliability and uptime using redundant infrastructure

supported by 100% Service Level Agreements (SLAs).

The state-of-the-art HVAC systems and uninterrupted power solutions are specially designed for efficient and uninterrupted service delivery. The centre guarantees 24/7 availability and the uptime of services to 99.998%. There is efficient utilisation of spare capacity to eliminate resource wastage. This project has minimised IT staff requirements. There is huge cost and energy savings by transformation from a distributed DC model to a centralised data centre. This is leading to rapid deployment of applications and IT services by the government.

All Punjab government departments have started shifting their IT services and delivery infrastructure to the PITB Data Centre due to its secure, reliable and guaranteed uptime services. It currently hosts up to 80% of IT services of different departments of GoPb with more departments now requesting this service as well. This has led to consolidation of IT services and a centralised IT infrastructure for the Punjab government.

# PITB's Videoconferencing Facility

In the past, inter-communication of top tier leadership in the country and correspondence and communication with state machinery used to present a challenge. Availability of officials for meetings was usually dependent on the law and order situation, inter-city traffic and required heavy financial outlays for travel and security protocol.

In view of this situation, a fast, secure and effective way of communication was designed for top-tier government officials in the provincial capital, divisional headquarters and district headquarters to enable timely exchange of information. The PITB developed a state-of-the-art videoconferencing solution with secure channel connectiv-

ity between offices and districts. More than 110 government offices across the Punjab have been equipped with video conferencing endpoints. The system is capable of holding one-on-one, one-to-many and many-to-many conferences and can also host multiple conferences at the same time without compromising on quality.

This facility has helped the government save an estimated Rs.290 million and the project has received its return on investment much earlier than expected. The chief minister has also made use of this facility and directly chaired nearly 1/4th of the total number of videoconferences held. The PITB is now working on providing the facility to more departments.



# Smart Monitoring of Development Projects (SMDP)

MONTHLY PROGRESS SUMMARY												
Amounts are in MILLION (PKR)												
			<input checked="" type="checkbox"/> Total Cost	<input checked="" type="checkbox"/> Exp upto June 2016	<input checked="" type="checkbox"/> Revised Allocation	<input checked="" type="checkbox"/> % Utilization	<input type="checkbox"/> Foreign Aid	<input checked="" type="checkbox"/> Total Release P&D	<input checked="" type="checkbox"/> Release Received			
	TOTAL NO. OF PROJECTS	TOTAL COST	EXPENDITURE UPTO JUNE 2016	ALLOCATION 2016 - 17	REVISED ALLOCATION 2016 - 17	TOTAL RELEASE P&D 2016 - 17	TOTAL RELEASE PIFRA 2016 - 17	RELEASE RECEIVED 2016 - 17	TOTAL UTILIZATION 2016 - 17	% UTILIZATION 2016 - 17		
	Grand Total	7,114	1,637,265.526	454,087.479	549,568.436	549,568.436	382,058.174	370,601.579	410,808.254	86,943.604	15.82	
SR #	MAIN SECTOR	TOTAL NO. OF PROJECTS	TOTAL COST	EXPENDITURE UPTO JUNE 2016	ALLOCATION 2016 - 17	REVISED ALLOCATION 2016 - 17	TOTAL RELEASE P&D 2016 - 17	TOTAL RELEASE PIFRA 2016 - 17	RELEASE RECEIVED 2016 - 17	TOTAL UTILIZATION 2016 - 17	% UTILIZATION 2016 - 17	ATTACHMENTS
1	Infrastructure Development	2,457	668,366.134	245,918.002	184,416.211	184,416.211	150,677.553	145,700.129	159,371.623	35,819.791	19,423	
2	Others	133	56,157.341	16,734.615	12,432.57	12,432.57	8,817.472	8,417.182	10,427.426	3,816.26	30,696	
3	Production Sectors	214	124,382.821	27,473.047	41,371.064	41,371.064	33,707.988	30,467.231	35,255.948	10,422.864	25,194	
	Services											

The PITB, in collaboration with Punjab Planning and Development Department, has designed and developed an online system for monitoring of development spending.

This system was conceived to bridge information gaps between various stakeholders. It cuts down delays and brings in more transparency and efficiency in implementation of Mid-Term Development Framework (MTDF) and Annual Development Programme (ADP).

This system enables evidence-backed decisions at the highest

level and also helps micro-manage minute details.

The Punjab Development Budget for 2017-18 was formulated online for the first time in the history of Pakistan through this system. The system offers comprehensive dashboards for smart monitoring. In addition, it enables the Planning and Development Department to monitor the progress of individual development projects on a monthly basis. Since 2016, all stakeholders have been submitting monthly progress reports through this system.



# e-Payment Gateway

Punjab government collects revenue of approximately Rs. 300 billion annually in taxes and levies. In order to streamline tax and levies collection process for citizens, PITB has planned an e-Payment Gateway that will remove the need for physical visits and wait in long queues. Citizens will be able to conduct these transactions through a smartphone application anytime, anywhere. This app is not limited to online payments but has several other P2G services like launching municipal complaints and applying for police character certificate and for domiciles, etc.

In order to execute financial transactions, the PITB is working with banks to design a seamless model and architecture of the gateway application. This application shall accommodate the following government functions:

- e-Stamping
- e-Challaning
- Vehicle Token Tax
- New Vehicle Registration
- Vehicle Ownership Transfer
- Property Tax
- Professional Tax
- Entertainment Tax
- Driving License Fee
- Domicile Fee
- Character Certificate
- Municipal Complaints
- Police Complaints



# Automated Fare Collection

In 2012-13, the Transport Department asked the PITB to implement an Automated Fare Collection and Bus Scheduling System for the first Metro Bus corridor in Pakistan.

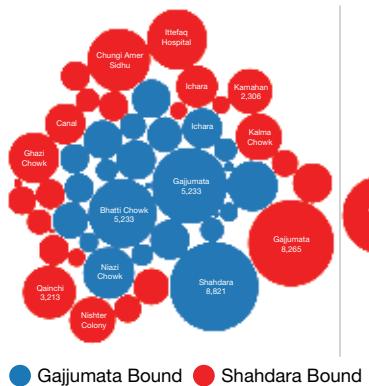
Over 200 million rides have been processed via this system since its implementation in 2013. In Lahore, approximately 165,000 riders use the system everyday. Building upon the success in Lahore, PMA has extended the AFC-BSS solution to its other corridors in Pakistan.



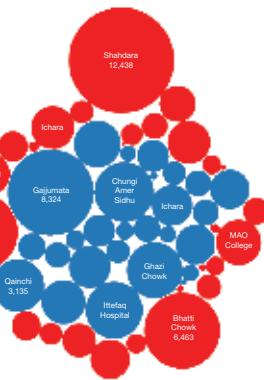
## Key Components

- Contact-less RFID based re-usable ticketing
- Multi-ride cards, with self-service balance load facility via Ticket Vending Machines
- Secure, turnstile-based gated entry into stations
- On-station passenger information system
- Real-time bus tracking and communication system
- Central helpline to facilitate riders

Cluster Map - Origin



Cluster Map - Destination



Check-In Date: 05/01/2013 to 05/01/2013

**27**  
Stations

**160K**  
Daily Passengers

**200M+**  
Total Rides

## Key Benefits

- Secure and speedy station access for passengers.
- Standardised system and access method across all stations.
- On-time/on-schedule bus arrivals and departures due to real-time bus tracking – to curb delays and bus bunching
- Central control-center support and real-time analysis, ridership data, and corridor load management
- Robust and integrated solution – easily extendable to multiple corridors across geographic regions

# Punjab Floods Disaster Management System

In the wake of the September 2014 'super-floods' across most parts of Punjab, a dire need was felt for setting up a comprehensive disaster management system to coordinate rescue and relief efforts throughout the province. For this purpose, the Provincial Disaster Management

Authority (PDMA), Punjab and PITB collaborated to set up a detailed web-based disaster management system ([www.floodrelief.punjab.gov.pk](http://www.floodrelief.punjab.gov.pk)) developed along the lines of an open source disaster management software operated by a California-based non-profit organisation (SAHANA).

The system offers secure data logging for district officials, PDMA and associated departments such as Livestock, Irrigation, Agriculture, Health, and Rescue 1122. Based on this data, automated reporting templates are updated on a live dashboard depicting a summary of relief efforts.

Through the help of SUPARCO and other independent sources of satellite imagery, the extent of inundation is also assessed re-

mately and monetary compensation can be disbursed accordingly.

Another key feature of the system is the publicly accessible interface for viewing real-time weather and flood forecasts and flood warnings. Moreover, it has an early warning SMS system to alert residents of vulnerable/low-lying areas in case there is a threat of severe inundation.



developed by the PITB to aid field teams conducting post-floods damage assessment surveys. These applications are equipped with geo-tagging and pictorial evidence of visited sites can be uploaded for increased transparency of operations.

# Ease of Doing Business (Registration Portal)

ITB in collaboration with Industries, Commerce & Investment Department, Labour & Human Resource Department, Punjab Employees Social Security Institution and World Bank has developed an online Registration Portal to facilitate business registration process for the general public. This has reduced the registration processing time from at least 7-days to 2-days. Now citizen can register their businesses by sitting at their homes using this portal. Currently, the portal is also integrated with NADRA, SECP and in future it will also be integrated with FBR system for further facilitation.



With the use of this portal, any new business can easily be registered online, saving the need of visits to different departments for paper based documentation. The portal also provides tracking of applications and timely issuance of online registration certificates.

A helpline has been established to handle public queries regarding registration processes and facility is also made available at Facilitation Centres (e-Khidmat Markaz). The Government also aims to enable online payments for registration with aforementioned departments, which may encourage more entrepreneurs and investors to start a business.

The Business Registration Portal caters registration for the following:

- Partnership Firm Registration (Industries, Commerce & Investment Department, Punjab)
- Shops & Establishment Registration (Labour & Human Resource Department, Punjab)
- Registration with Punjab Employees Social Security Department (PESSI)

# IT Based Profiling

In this day and age, manual processes have become an uphill task, especially when dealing with large volumes of data. The Government of Punjab employs thousands of workers across 36 districts of the province. ICT based solutions have become a standard approach for governments worldwide, for record keeping, transferring, timely data analysis, and automatic alert generation based upon pre-defined thresholds.

The Establishment Division Islamabad is maintaining the history card of PAS, PSP, SECTT and OMG officers with their complete consecutive accurate record of dates of assumptions / relinquishment, posting /EX transfer, joining / not joining and cancellation of Federal / Provincial Governments, attached departments / organization's internal posting / transfer orders enabling us to assess the actual duration of working for the stipulated periods of awaiting

PERs under specified reporting /  
ter signing officers for  
promotion



The initiative will help maintain digitised information of government employees (profiles, skillset, postings, and performance records) through a centralised HR system - subsequently leading to better management of such a large workforce and will be integrated with the Establishment Division e-filing system for two way information.

This initiative has resulted in:

- Personal files of all officers have been digitised.
- Individual Career Planning Chart of all 1,354 PAS, PCS, PSS & PMS officers, transfer/posting of all officers across Punjab in all departments / Districts in Punjab has been digitised.
- Global search for suitable officers for posting on major posts.
- Digitised Vacancy Chart of Punjab.
- Integration with Anti-Corruption Case Management System for officers' verification.

The centralised system helps access a common database to view and update employee profiles, transfer/posting records, promotions, and performance evaluations. Scanned historical and existing data is now available. Merit-based identification of candidates (based upon performance, skills, qualification, and suitability) for new posts is now possible. Communication and case escalations, identification of evaluation trends of supervisors, and auto-alerts to key stakeholders can now be done in a timely manner. Performance is now linked to specific KPIs for particular roles – instead of the “one size fits all” approach. As a result of this initiative, better and timely succession planning can be achieved.

# Province-Wide Connectivity of the Punjab

The evolution of e-governance, consolidation of IT services at centralised data centres, and maintenance and control of online services has increased the need for access to the internet and interconnectivity between government offices and facilities. In order to meet these requirements, the offices were directed to procure connectivity services from vendors which led them to purchase low-quality internet connections at very high rates.

The Punjab government, despite being a major purchaser of internet bandwidth, was not able to get good rates due to geographically distributed and standalone connections from multiple ISP vendors. Moreover, with increasing cyber-attacks making networks vulnerable and services insecure at a time when the government was overseeing a rapid shift of office functions and services to the e-governance model, it was necessary to have fast, economical, efficient and secure inter-connectivity between government offices so they could benefit from centralised and unified communication services such as IP telephony, video conferencing as well as Tier 2 and Tier 3 IT related support.

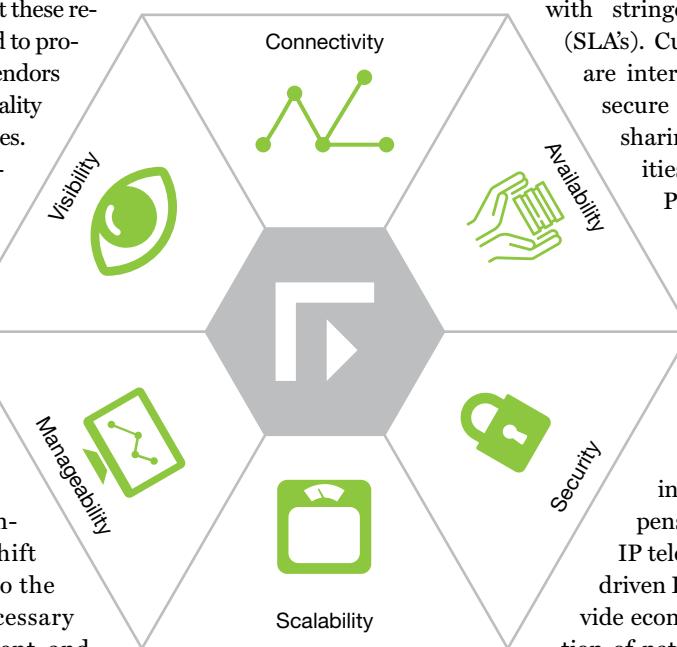
The PITB has engaged ISP vendors in a central contract for

provision of high speed internet and inter-office connectivity services all across Punjab with the Arfa Software Technology Park (ASTP) Data Centre as the hub site at considerably economical rates and quality services agreements with stringent service level agreements (SLAs). Currently, more than 100 offices are interlinked with the PITB through secure MPLS Layer 3 tunnels and are sharing unified communication facilities centrally administered by the PITB Infrastructure Team.

This initiative will provide low-cost, secured and filtered internet services to government departments. It will ensure that there is data consistency and control through secured connectivity.

There will also be cost savings in telecommunication related expenses through efficient use of the IP telephony infrastructure. Centrally driven IP telephony services would provide economic benefit in terms of reduction of nationwide dialing calls at remote offices and even elimination of distributed

telephone connections. All the interlinked offices would be treated as local exchange and local extension lines, thereby, increasing the reliability, efficiency, and availability of services and eliminating inter-office calling expenses nearly to zero.



# Transport Department Automation System (TDAS)

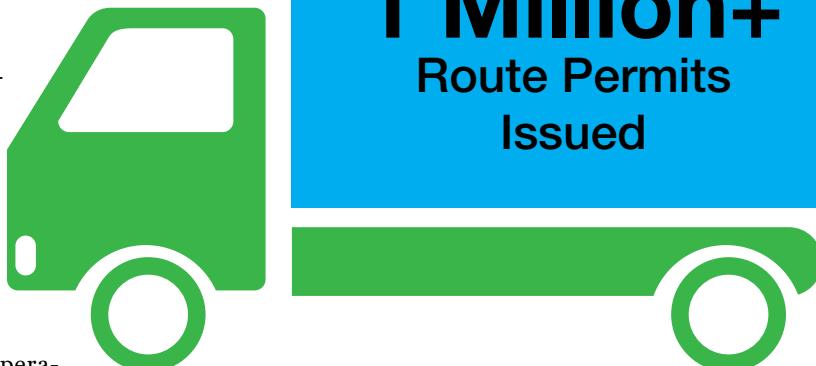
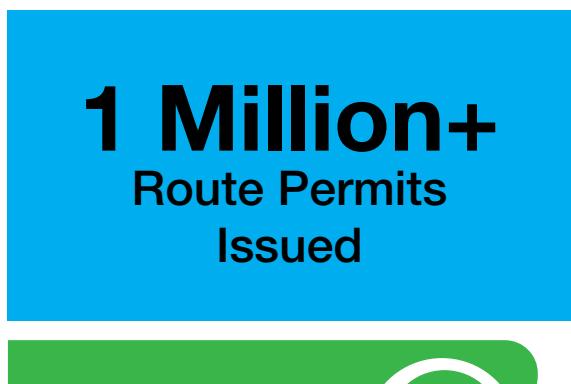
The project aims to automate the Transport Department by enabling regional transport authorities to issue computerised route permits, certificates of fitness, licences of bus stands and goods forwarding agencies etc.

Following are the salient features of the project:

- Maintaining correct and updated databases of vehicle population
- Revalidating vehicle population by identifying vehicles of questionable origin
- Ensuring transparency
- Ensuring on-spot verification of route permits, certificate of fitness etc
- Increasing revenue and ensuring effective monitoring of revenue receipts
- Creating a data-hub to facilitate other agencies like Criminal Record Office, Motor Vehicle Examiner Office, Motor Registration Authority etc.

The project helps improve service delivery leading towards a better transport management system. The project objectives are also aligned with the government's efforts to curb corruption in public offices. Digitisation of route permits, fitness certificates and licence of bus stands ensures transparency. Computerisation of the transport system not only enhances performance but also precision. The centralised system is already opera-

tional across the Punjab with over a million route permits issued so far. Revenue of Rs2 billion has been collected since the induction of the system.



# Punjab Online Procurement System (POPS)

**77,385**

Total Bills Generated

**2,535**

Cost Centres

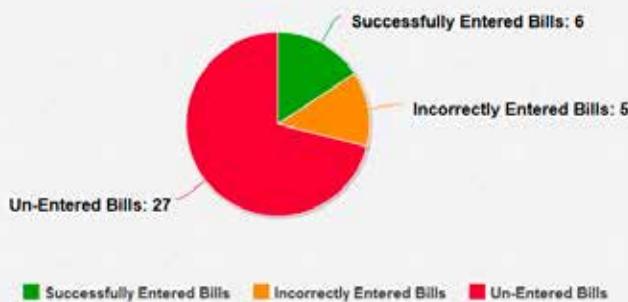
**8.28** Billion

Total Billed Amount

BILLS PASSED BY AG/DAO/TO

TOTAL BILLS PASSED	38	100 %
SUCCESSFULLY ENTERED	6	15.8 %
INCORRECTLY ENTERED	5	13.2 %
UN-ENTERED BILLS	27	71.1 %

BILLS PASSED BY AG/DAO/TO



This project is part of Evidence-Based Procurement Reforms (EPBR) of the government. It uses IT solutions to prevent leakages in payment processes and thus, increase fiscal space available to the government.

The automation of the procurement process (from requesting an item to delivery) and basic accounting and monitoring functions (such as in-office approvals and sanction of funds), has led to improved transparency.

The system has helped find gaps in procurement processes in place across different offices and districts. In some cases a difference in price of up to 70% has been found in the purchase

of the same item, thus providing policy makers a powerful and useful monitoring mechanism.

Currently, the POPS is in use of four departments: Agriculture, Communications and Works, Health and Higher Education. The PPRA is in process of rolling it out in more departments. Cumulative amount of all bills processed through the system currently stands at about Rs8.283 billion. A total of 77,385 bills were generated through the system. The system allows departments to process procurement requests from among 82,000 different items commonly used in the public sector.

# Imparting ICT Based Trainings to Civil Servants

For improving evidence based decision making

**P**ITB collaborates with the National School of Public Policy (NSPP) to provide IT trainings to civil servants at MCMC, SMC and NMC levels across Pakistan.

These training programs comprises of ICT basics, hands on exercises and case studies for the participants. Officers are being trained to use ICT as a tool for efficient decision making to address their respective sectoral issues. This technique has

proved to be extremely effective with professionals promoting use of technology for better administration through capturing, analytics and visualizations of data.

As a consequence of these interactions, many requests have been extended to PITB for consultation and to facilitate automation of various departments across the country. Some of the requests are in progress while others have been accomplished.



# National Highway and Motorway Police Ticketing System (NHMPTS)

Replacing the conventional paper-based and manual ticketing system for traffic law violations, the PITB has developed an e-ticketing system across Pakistan for all highways and motorways. It enables patrolling personnel to issue tickets to commuters on the spot, verify vehicle registration, license information and maintain a retrievable and geo-tagged record of rules violations.

Under this project, the PITB has successfully completed geofencing of highways and motorways across Pakistan. Moreover, for better evaluation of services, this system provides details of the nature of help provided to commuters ranging from a mechanical fault to a flat tyre. An SMS-based feedback system provides an effective way to evaluate the quality of services.

In addition, the system automatically updates location of patrolling personnel after every three minutes. It ensures that officers do not stay at one place for a period of more than 30 minutes.

Simultaneously, an accidents tracking system under this project enables better monitoring of accidents on highways or motorways.

The e-ticketing system has significantly improved overall performance of the department. It has enabled effective monitoring by providing a complete report about officers including the amount of fines collected and the number of beats visited.

More than 8,679,282 e-tickets have been issued using the system across the country.

**736,474** | **8,679,282**

Monthly Challans  
Rs. 343.29 Million

Total Challans  
Rs. 3.75 Billion

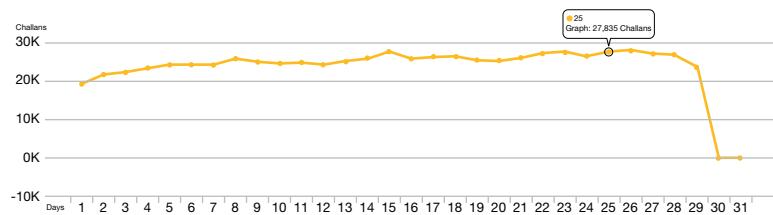
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Service above self to ensure a safe and secure driving environment on highways and motorways. Provide prompt assistance to road users in distress.

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Recent Challan Report (July 2017 Challan Report)



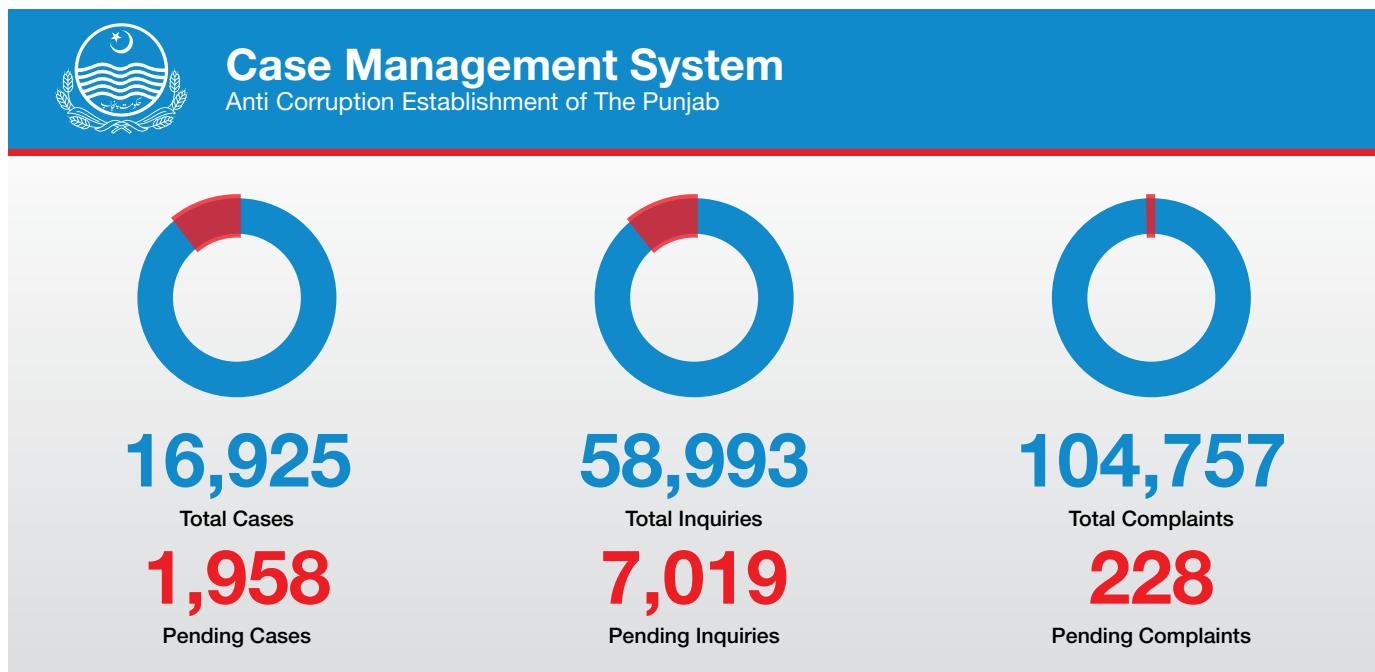
# Anti-Corruption Case Management System (ACCMS)

**I**t was extremely hard to ascertain corruption record of an individual based on manual and paper based system and it took days to search in archives. Based on this, issuance of No Enquiry Certificate (NEC) from Directorate of Anti- Corruption for postings and promotions used to be a huge challenge. An online case management system developed by the PITB now enables online inspection of employees records and issuance of the NOCs in an efficient manner.

The ACCMS can also be used to launch a complaint against a government employee, possibly leading to an inquiry. A comprehensive

online database makes it easy to monitor progress on cases. Anti-Corruption Establishment officers can also log into the system to access the database (according to their respective jurisdiction), generate reports and identify trends aiding policymaking.

Keeping track of all changes and updates in the system is critical. The Audit Trail allows one to keep track of all such updates thus providing a transparent mechanism to evaluate cases on merit. Moreover, an android-based mobile application enables tracking and recording onsite inquiries for better transparency.



# Punjab Residency Programme (PRP)

To improve quality of healthcare facilities, PITB has developed and implemented a web-based induction system for placement of medical graduates at 27 different hospitals across the province. The system works on a specially designed algorithm i.e. Hungry Protocol to ensure transparent placements.

More than 6,000 candidates from all over the country have applied to 27 different hospitals using the system and more than 2,500

have been placed according to their merit and preference. Data gathered during the admission system helps to identify different trends. For example, in our January induction, it was noticed that majority of the candidates applied for medical seats, thus leaving plenty of vacancies in surgery. As surgery is an important part of service delivery in medical care, Health Department invited fresh applications specifically for surgery programmes to restore the balance.



## Centralised Automated Induction System

### January 2017 Induction



### July 2017 Induction



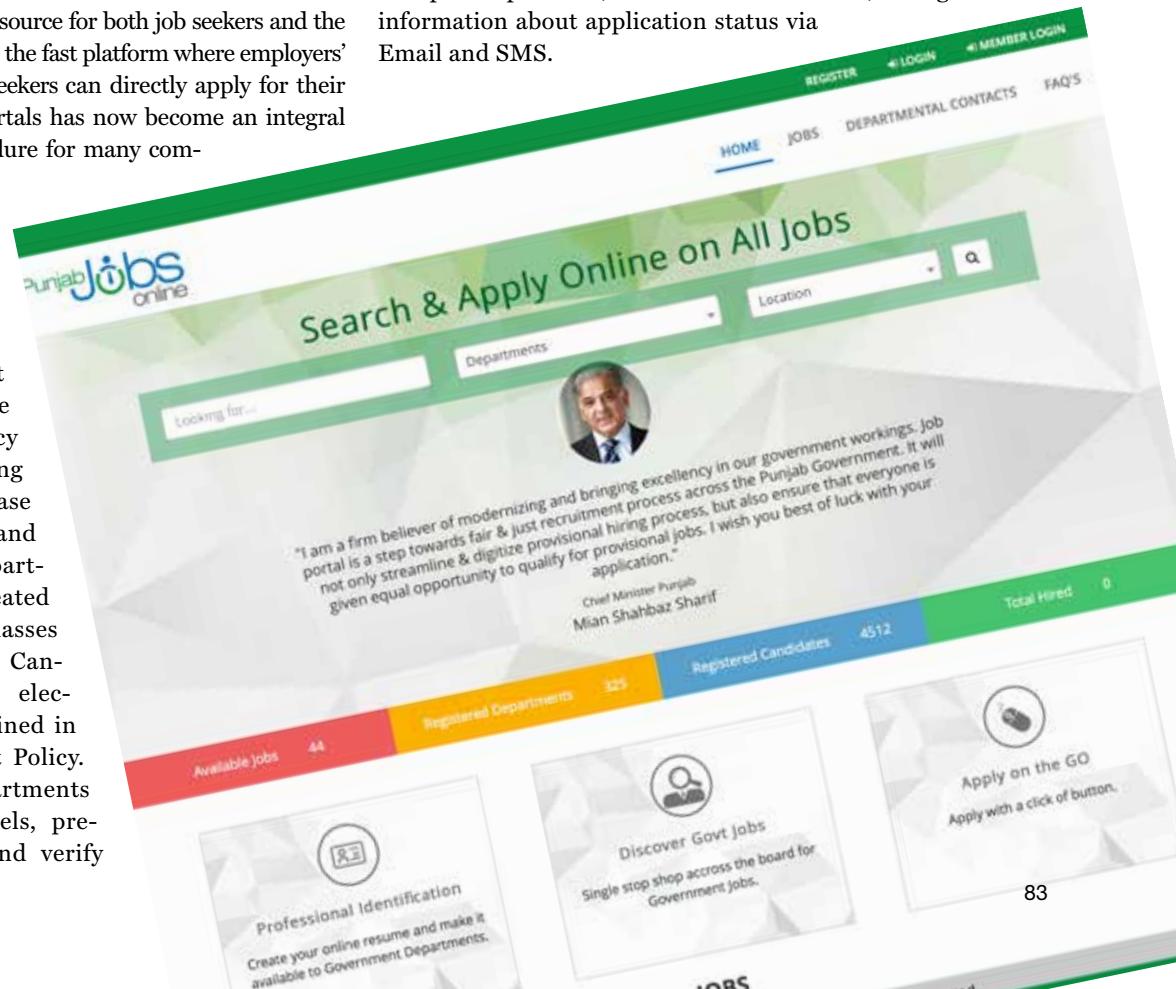
# Job Portal

The traditional method of using print media for recruiting human resource had certain challenges. An organisation's reach was limited, building a talent database took a lot of time, and screening/shortlisting of resources was a strenuous task. Similarly, candidates had to go through the unending task of finding the right opportunity. Online job portals have revolutionised recruitment and have turned out to be a primary source for both job seekers and the employers. It is a convenient and the fast platform where employers' post job requirements and job seekers can directly apply for their desired jobs. Hiring via job portals has now become an integral part of the employment procedure for many companies.

Punjab Information Technology Board has developed a unified portal "Punjab Jobs Online" which will enable job seekers to view all Punjab government jobs on a single platform. The portal will bring transparency and fairness into the hiring process. It will also decrease administrative overheads and burden on government departments. New jobs can be created and made available to the masses through a click of a button. Candidates will be shortlisted electronically as per criteria defined in the Contract & Recruitment Policy. The portal will enable departments to formulate interview panels, prepare comparative reports and verify

applicants through different data sources such as NADRA, Driving License Management System, Domicile System and Criminal databases.

Candidates can create a profile through CV builder, use advanced searching criteria to find jobs relevant to their skill set, link public profiles (LinkedIn and Facebook) and get information about application status via Email and SMS.



# Data Warehousing

The project was envisioned in 2004 and the first phase included the setup of the necessary hardware and software components as well as the implementation of a standardised data model / framework which would act as the basis for the data warehouse moving forward. Phase II of the Data Warehouse & Business Intelligence (ICDS) project was initiated in June 2007. The major component of phase II of the ICDS project was the sourcing of six Government of Punjab departmental source systems into the data warehouse. The source systems that were sourced into the data warehouse in Phase II include:

- Land Records Management Information System (LRMIS)
- Computerisation of Lahore General Hospital (LGH)
- Punjab Provincial Cooperative Bank Limited (PPCBL)
- Punjab Public Service Commission (PPSC)
- Motor Transport Management Information System (MTMIS)
- Excise and Taxation

This initiative has been deployed in 36 districts across Punjab and is being actively used for:

- Data Integration of Call Data Records, BTS Records, Subscriber, Driving License, Motor Vehicle, FIR, Crime Mapping, Geo-spatial Maps, Hotel Check-ins, Criminal Record Office and Tenants Systems
- In Depth Criminal Profiling from across the source systems (CDR, Subscriber, Driving License, Motor Vehicle, FIR, Crime Mapping, Geo-spatial Maps, Hotel Check-ins, Criminal Record Office etc.)
- Centralised Citizens' Verification : The integrated data feed from this solution is being provided to other systems of

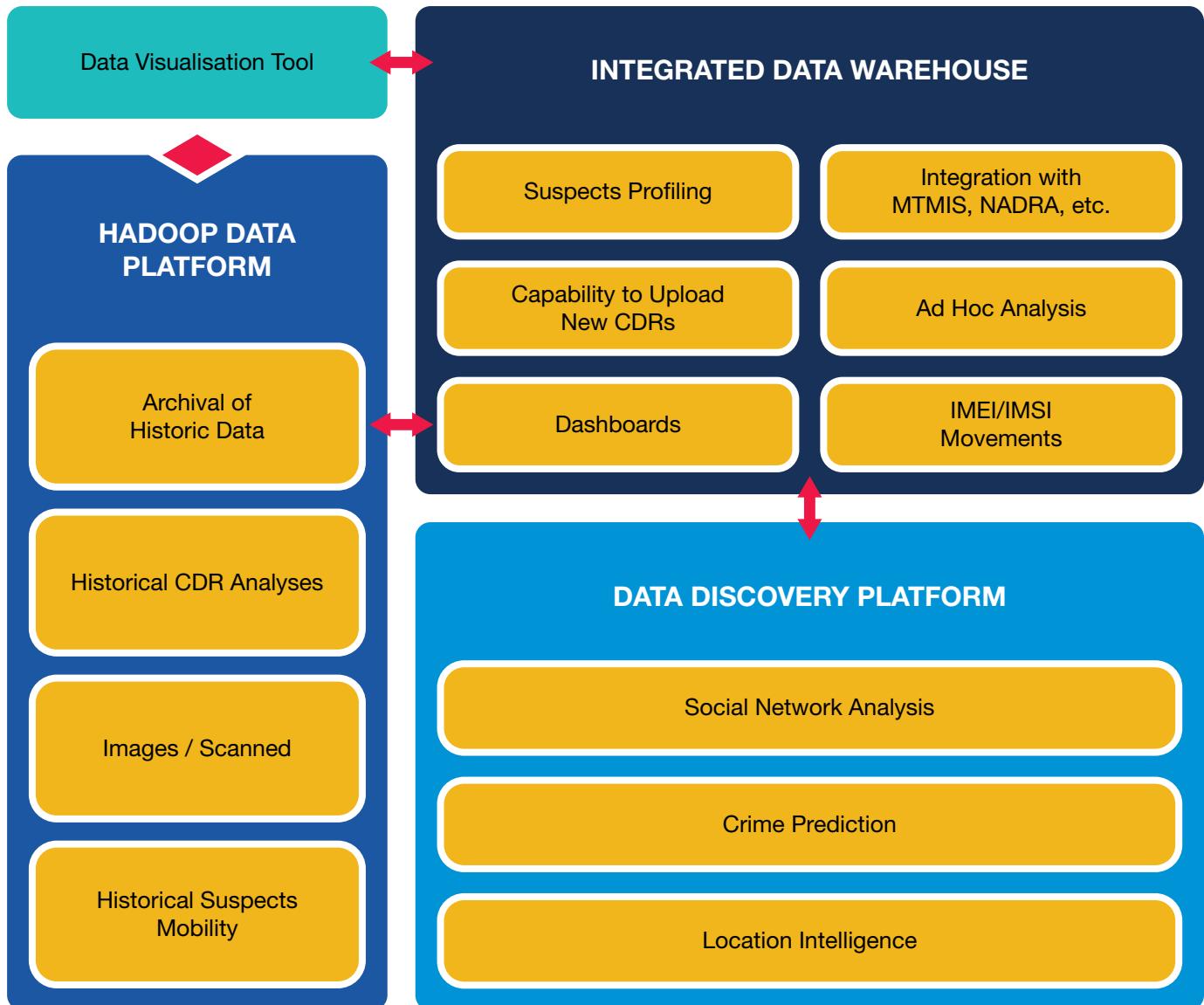
PITB like Tenants Registration System, Hotel Eye System etc. which helps verify citizens on runtime.

- In-depth- Granular CDR Analytics
- Pre Crime Analysis
- Post Crime Analysis
- Geo Fencing and Geo Spatial Crime Analysis
- Temporal Crime Analysis
- IMEI Handset Based Analytics
- Mobility Profiling of suspects
- Social Network Analytics of suspects and criminals
- Suspects' Communication pattern and intermediary persons identification

This initiative has resulted in:

- Timely and efficient reporting and 360 degree view of activities for the Chief Minister Punjab and other top management
- Criminals Network Analysis
- Location based Insights
- Suspects Profiling and Movement
- Predictive Crime Intelligence
- Handsets Analytics
- IMSI Data Analytics for suspect's Real Time Identification and Movement
- PITB's Centralised Information HUB

Case Closures Weekly Average as per Punjab Police	5 to 10
Total FIRs Investigated Using this System	9,619
Total Data Source Integrated	12
Total Call Data Records Integrated for Analysis	87.3M
Total Districts of Deployment	36
Total Police Ranges of Deployment	10
Total Users of Punjab Police and CTD	>60





# Improving Web Presence for Government

Websites are effective means to create awareness and disseminate information to the public at large. Realizing this fact, PITB has been facilitating various government departments in creating their official websites and portals to improve online presence of Government of the Punjab; which has been keeping up with the demands of the citizens in relation to:

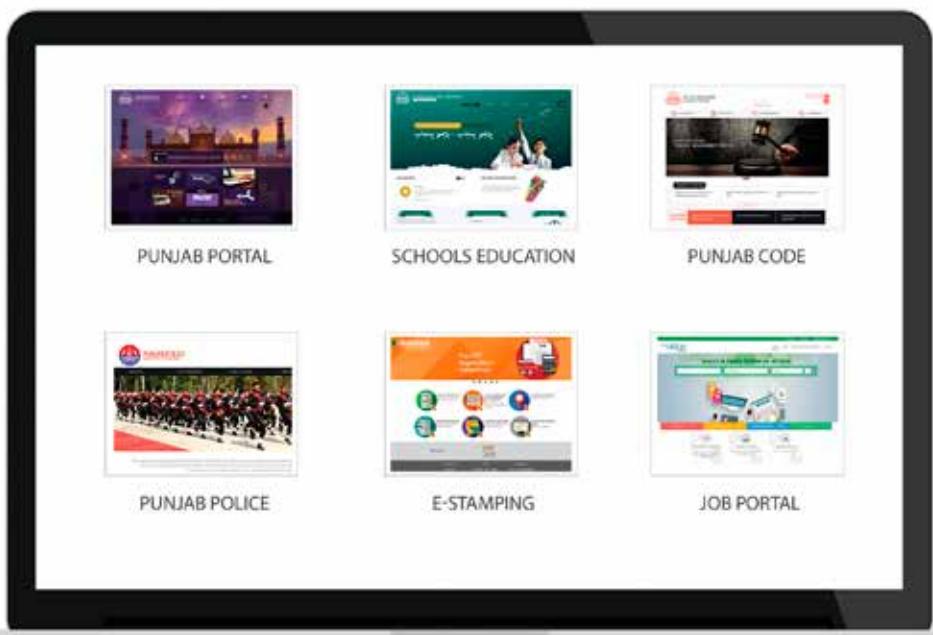
- Transparency
- Greater engagement
- Readily available information and services

PITB uses a proven Content Management System, used worldwide to deploy secure, reliable, and approval-based content work-

flow. Furthermore, it also facilitates the government departments with secure hosting environment for their websites/ portals.

From content structuring and development, design conception to technical support, PITB trains the nominated officials of government departments on the user-friendly content management system to develop their websites. This capacity building ensures that once the website is up and running, departments have sufficient knowledge to regularly update & maintain the website on their own.

As of now, more than 160 websites have been designed, developed and made live on the aforementioned management system. Over the years, PITB is committed to continuously facilitate and improvise the web presence of the government departments nationwide.





# CITIZEN-CENTRIC SERVICES



The project for automation of stamp papers was designed to facilitate the public by minimizing their visits to government offices. This system also controls leakages in tax collection, provides valuation tables online and makes the verification process efficient. This project is the result of a collaborative effort by the Board of Revenue and the PITB. Citizens can now obtain important stamp papers within minutes. I would like to express my gratitude to my team at BOR and the e-Stamping Project team of the PITB for exhibiting great professionalism and reliability during the execution of the project.

**ASAD ISLAM MAHNI**  
Project Director e-Stamping  
Member Taxes Board of Revenue

# e-Khidmat Markaz

Setting up one-window cells within specific government departments is not a new idea but establishing a one-stop shop with representation of multiple departments and provision of services offered by these departments has never been tried in Pakistan before.

The Citizen Facilitation and Service Centres (e-Khidmat Markaz) are now operational in Lahore, Rawalpindi, Faisalabad, Sargodha, Gujranwala and Sahiwal districts.

These centres offer 17 different services like Domicile Certification, Traffic Fine Collection and Issuance of Route Permit. The PITB plans on establishing 10 e-Khidmat centres in nine divisions of the Punjab by end of 2017.



No. of visitors at the centres

700K+

No. of applications processed

350K+

Turnaround time across Punjab

99%

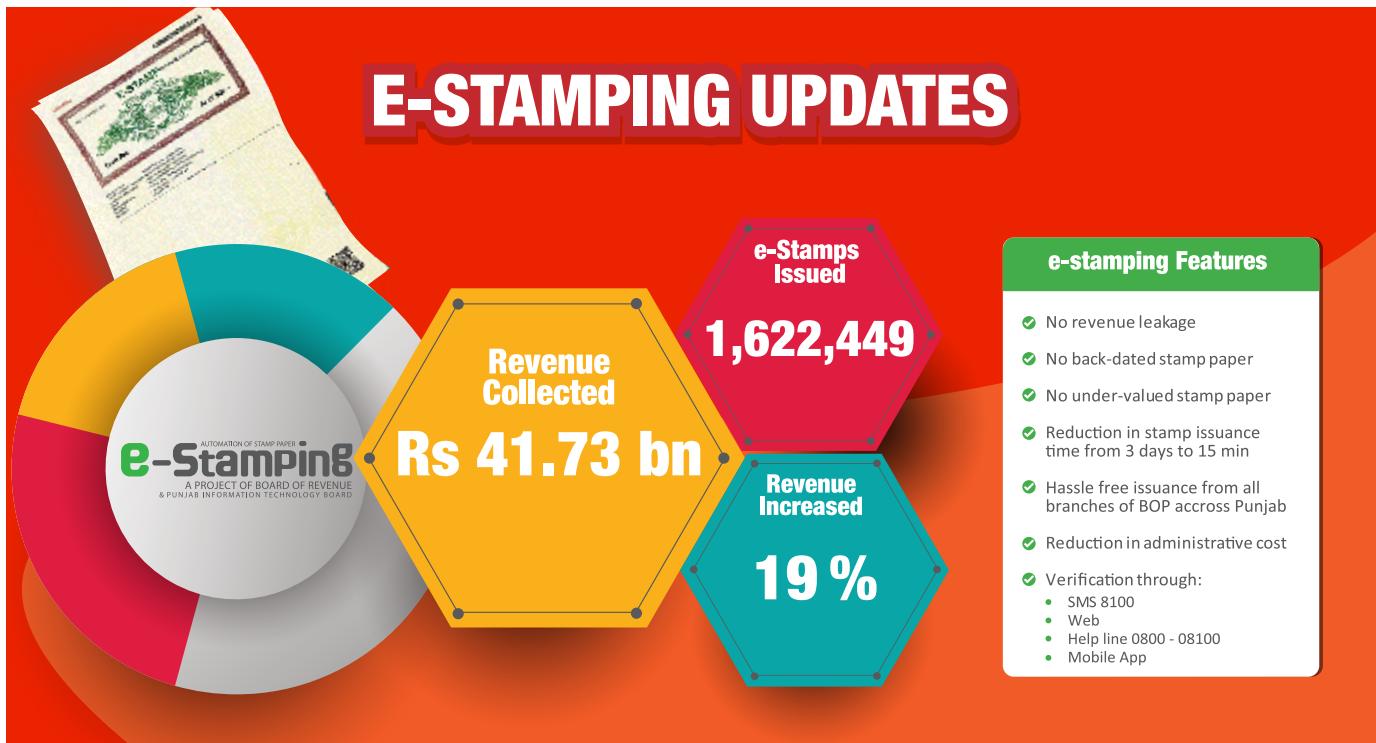
Setting up facilitation centers across the Punjab will help the government achieve the following objectives:

- Empowerment of citizens by providing easy access to public services
- Effective, efficient, prompt hassle-free and corruption-free service delivery
- Greater accountability and transparency
- Standardisation of public service delivery across Punjab
- Extending access to un-served groups
- Simplifying transaction procedures

- Minimising costs to citizens
- Minimising cost to government (internal efficiency)
- Increasing government revenue
- Increasing public satisfaction index



# Revamping of Stamp Duty Collection Through e-Stamping



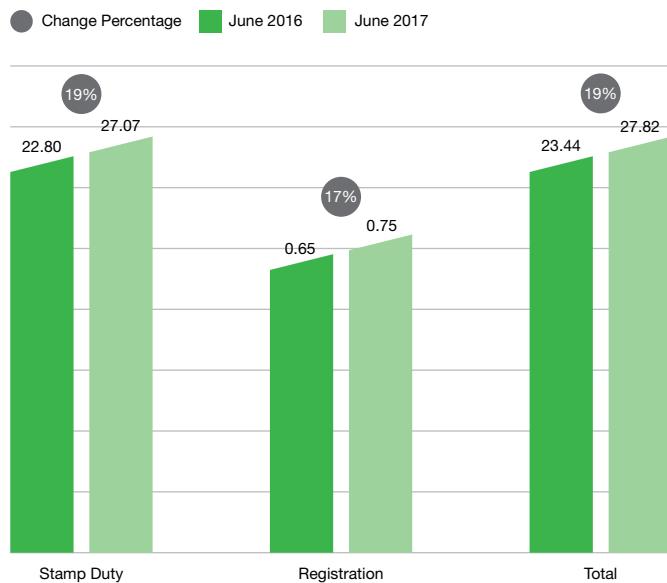
**C**ollection of stamp duty is a major own-sourced revenue for government of Punjab. It is collected by Board of revenue.

The centuries old process had major issues pertaining to citizen facilitation like leakage of revenue through fake and fraudulent practices. PITB's e-Stamping system has completely revamped the stamp issuance process which once used to take at least two to three days, has now been put online by PITB so that anyone want-

ing to purchase high value non-judicial and judicial stamp papers can do so by using a computer with internet connection.

The value of the stamp duty is calculated on the basis of data provided by the buyer (such as land area, location, covered area, commercial / residential status etc.). The DC valuation tables have been built into the system. Name of buyer, seller and the person through whom stamps are being purchased are

## AG Office - Fiscal Year Wise Comparison



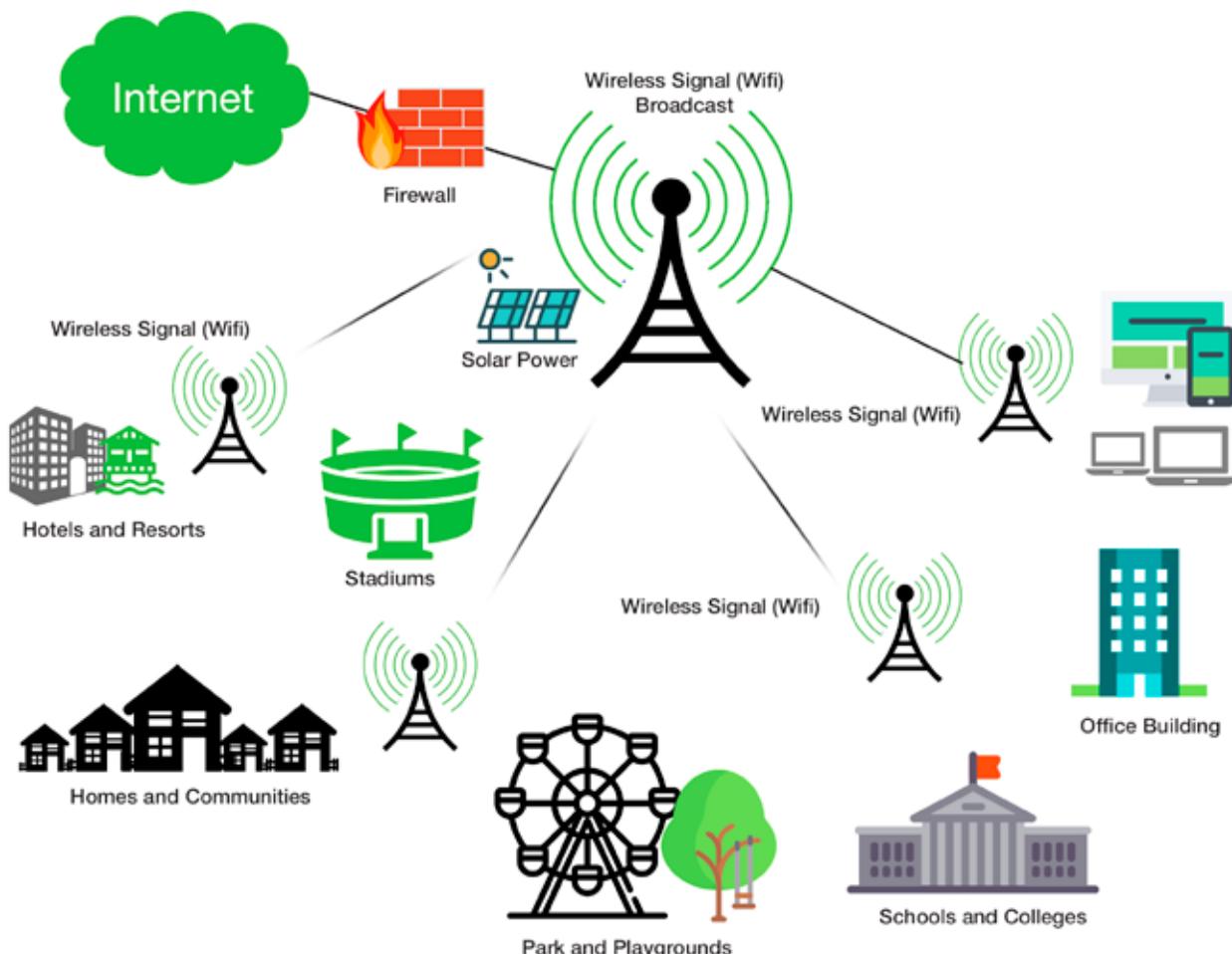
entered into the system along with their CNIC numbers. PITB has also built a central database for e-Stamping system which has made the verification process easier for citizens. Training of sub-registrars, stamp vendors, deed writers and other relevant stakeholders have been conducted by e-Stamping project team. A mobile app has also been developed for auditors so they can easily verify e-Stamp paper and Challan-32-A.

The figures below are from 26-May-16 to till date:

e-Stamping website unique visits	1.59m
Total revenue collected (Rupees)	41.73b
Highest revenue collected in a day (Rupees)	316.41m
Total e-Stamp issued (Judicial & Non-Judicial)	1.62m



# Punjab Free WiFi Hotspots



**T**he purpose of public Wi-Fi hotspots in the province is to bridge the digital divide by providing free, easy and reliable Internet access in major public places .

The PITB has set up 200 free Wi-Fi hotspots in Lahore,

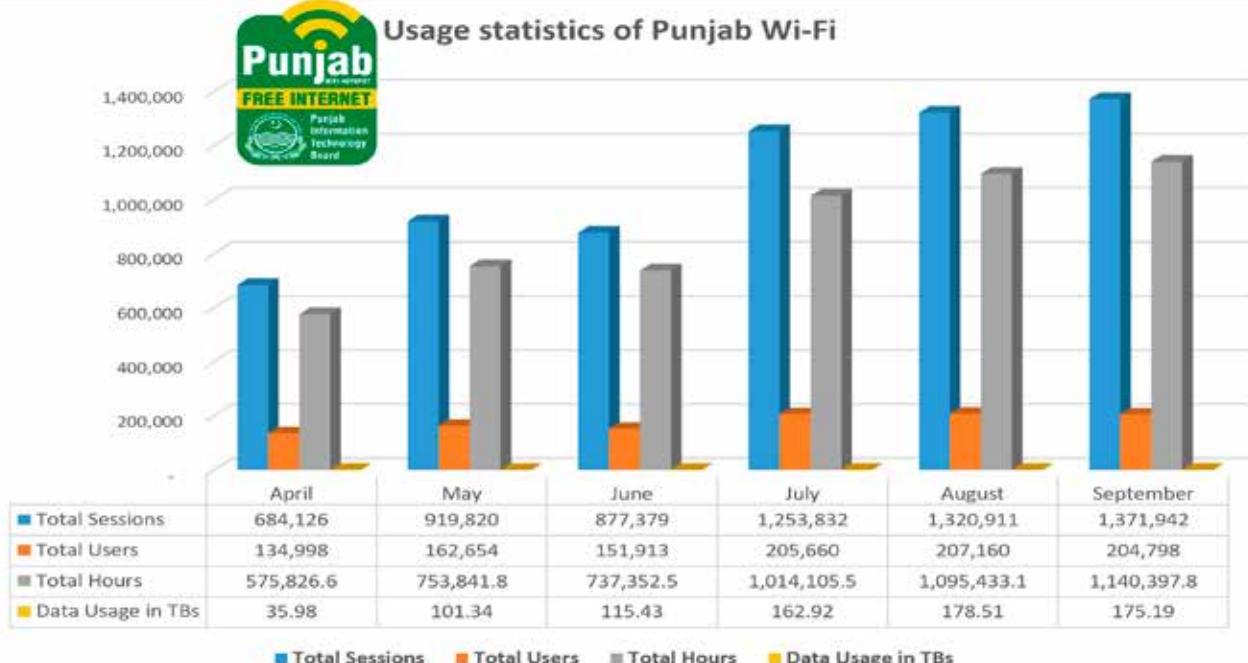
Rawalpindi, Faisalabad, Multan, Bahawalpur and Murree districts. The Wi-Fi hotspots have been set up at educational and government buildings, public parks, market places, hospitals, railway stations, airports and bus stations.

In order to provide technical support as well as complaint handling and resolution, trained staff are available at the call center 24/7. The highest use of these free Wi-Fi hotspots has been recorded at hospitals, followed by universities and colleges. The free Wi-Fi facility has also enabled on-field government officials from various departments to utilise centrally-maintained online services in a relatively seamless manner. The positive feedback of citizens is a sign of success for the initiative and the Chief Minister of Punjab has approved the extension of this project to other major cities of the province.

## STATISTICS



Usage statistics of Punjab Wi-Fi



# Citizen Contact Centre (CCC)

**C**itizen Contact Centre (CCC) has been conceived as a single point of contact for all the communications needs of citizens in Punjab. It is a shared platform providing call centre solutions for government departments. It is also the first government-to-citizen (G2C) contact centre that manages multiple communication media. Be it a complaint, enquiry or a suggestion related to a public service, citizens can approach the CCC for all their communication needs.

It is a multi-channel communication platform that includes services such as:

- Inbound/outbound calls
- Helpline/complaint line with IVR facility
- Outbound survey calls facility
- SMS/MMS query and broadcasting service (text and/or voice)
- Pre-recorded calls/robo calls with response capture facility and

The CCC is currently managing 30 active public campaigns through its helplines, survey lines and complaint lines. These include the Online College Admissions System Helpline (OCAS) and the Punjab Health Line. The CCC is also managing the national Hajj campaign where pilgrims and their relatives can enquire about various aspects of Hajj services.

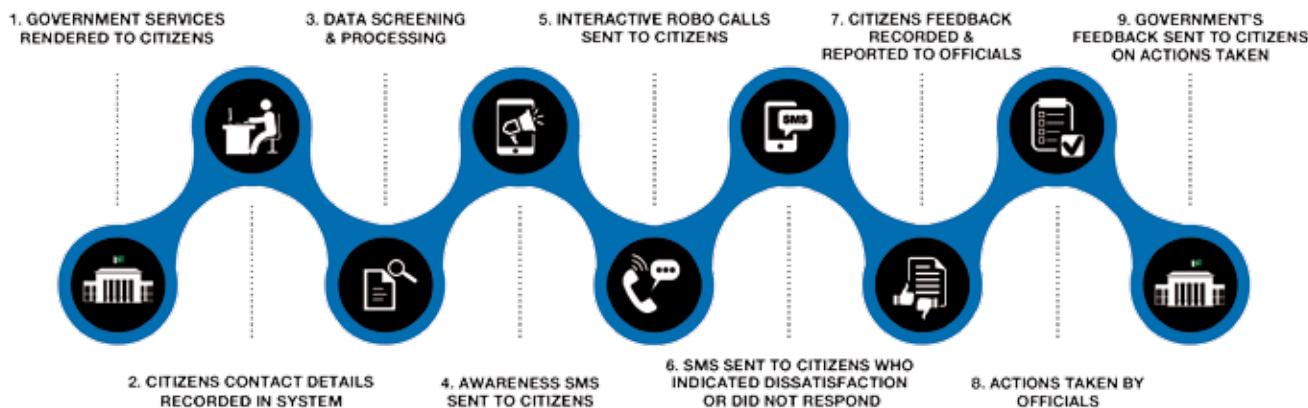


Another high-priority campaign at the CCC is a whistleblower campaign on counterfeit drugs. Future possibilities for CCC include social media interaction and webchats.

## Performance from November 2015 till August 2017

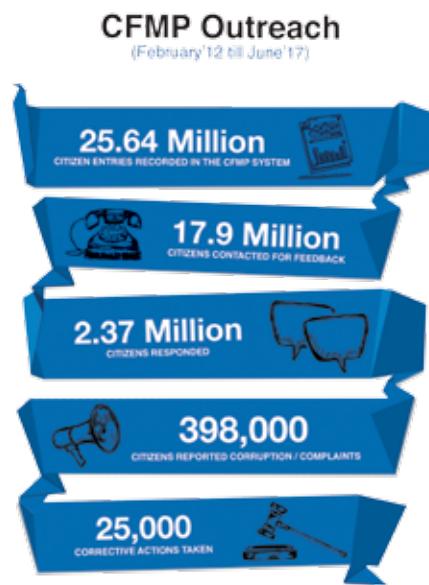
Citizen queries, complaints and suggestions answered .....	1,319,140
Outbound calls for surveys, reminders and citizen feedback regarding GoPb services .....	430,000
Robocalls for automated citizen feedback and service improvement .....	2,756,325
Bulk SMS for reminders and confirmation on registering/closure of service request .....	199,304

# Citizen Feedback Monitoring Programme (CFMP)



**T**he Citizen Feedback Monitoring Program (CFMP) is an initiative that proactively reaches out to citizens who avail public services to collect their feedback regarding their experience of service delivery. The feedback collected is analysed to identify problematic areas and assist relevant officials in taking evidence-based corrective measures.

Initiated by the PITB in 2012, the project in its initial phase covered only a handful of services in just six districts of Punjab. It has now evolved into a province-wide program, covering 26 services in all 36 districts. The program's main aim is to identify problematic areas, curb petty corruption in service delivery and facilitate government officials in taking evidence-based corrective measures. For achieving its aims, CFMP



analyses citizen feedback to identify trends and patterns in service delivery, as opposed to redressing individual complaints.

To solicit citizen feedback, CFMP reaches out to citizens who have availed any of the public services covered by the CFMP monitoring net via robotic calls and SMS. The Implementation and Coordination (I&C) Wing of the Punjab Government acts as a bridge between the PITB and the provincial bureaucracy to ensure efficacy of the program. Regular meetings are held at the Punjab Secretariat, organized by the Secretary I&C and chaired by the Chief Secretary, to review the performance of all the districts. In addition, the CFMP team also generates monthly district-wise and service-wise performance reports to assist relevant government officials.

## Services Monitored

Evidence shows that CFMP has made a significant impact in health service delivery. Corrective actions taken on the basis of citizen feedback collected via CFMP have led to a marked

improvement in the dispensation of medicines at all DHQ and THQ hospitals across Punjab, from 46% in October 2015 to 83% in June 2017.





The programme has served to enhance the government's credibility and to bridge the trust deficit between citizens and the state. It has also contributed towards empowering citizens and ensuring their active participation in government reforms. The sophisticated monitoring and tracking system introduced by CFMP has increased the efficiency of government service delivery, leading to improved citizen engagement and satisfaction.

CFMP was cited in the World Bank's World Development Report 2016 as an example of successful global citizen feedback gathering mechanisms.

### Global Coverage

**Calling in Against Corruption**  
An article from Hindustan Times about the initiative by citizen feedback.  
**HINDUSTAN TIMES** | 30 JUNE 2016

**UK outlines plans to tackle 'endemic corruption' in pakistan and elsewhere**  
EU-US alliance and corruption laws on 25 May 2016  
EU-US alliance and corruption laws on 25 May 2016  
**MIRROR** | 25 MAY 2016

**Pakistan's Largest province tries innovative technology-driven initiative to tackle corruption**  
Technology Quarterly | Q2 2013  
**THE ECONOMIST**  
**Zapping mosquitoes, and corruption**  
Technology Quarterly | Q2 2013

**Pakistan tries new way of tackling corruption**  
**THE ECONOMIST**  
February 8, 2013 at 8:12 PM

**What India Can Learn About E-Governance From Pakistan**  
By Sajid Ishaq | August 12, 2013 | **NDTV**

**Alberta adopts Pakistan's CFMP governance model**  
The government of Alberta, in an effort to curb corruption, has chosen citizen engagement and empowerment as the cornerstone of a citizen-focused & citizen-governed model inspired by the CFMP.



# Driving License Information Management System (DLIMS)

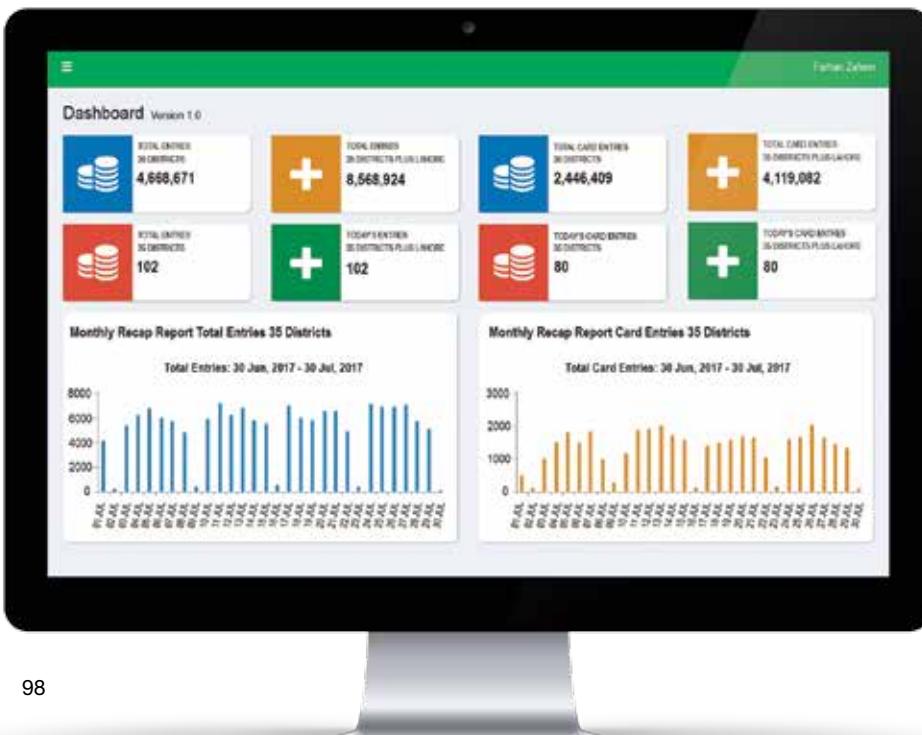
Previously, driving licenses were issued with no uniformity and no centralised record of applicants across the province. The government of the Punjab felt the need for a centralised and uniform system and sought the PITB's help in this regard.

The PITB developed the Driving License Information Management System (DLIMS) to automate the process of issuance of driving licenses, their renewal and upgrades across the province. The system provides quick processing service to the public and up-to-date statistics to authorities by using state-of-the-art technology and equipment. Customer care standards have been

enhanced so that applicants visit the license testing centre only once for the test.

## THE SALIENT FEATURES OF DLIMS ARE:

- Centralised issuance and management of driving licenses
- Centralised database of licensing system for the entire province
- A hassle-free approach to applying for and receiving a driving license
- Centralised driving license printing facility
- Delivery of issued licenses through courier
- Reduction of vehicle-related crimes
- Creating a data hub to facilitate other agencies
- Increasing the revenue and ensuring transparency



Digitalisation of the driving license system has immensely benefitted applicants who now get driving license delivered at their doorstep. The users can also track and verify their driving license information online.

The DLIMS system is operational in all 36 districts of the Punjab. Over three million regular and 50,000 international licences have been issued through this system. More than 7,000 entries are made daily, making it the biggest database in the entire province.



# Domicile Management System

ITB has developed a fully automated system for generation and management of domiciles - an important identity document for Pakistani citizens showing their region of birth. Online monitoring system for Domicile Management System was developed and has

been operational since June 2007 (<http://domicile.punjab.gov.pk>).

The queue management system enables transparent and quick delivery of computerised domiciles. The system also provides a mechanism to check for duplicate issuance. It has been implemented in 34 districts. The number of domiciles in record stand at 3,947,714 and those verified using the system are 597,656.



# e-Challaning and e-Testing in Punjab

**T**here is no regime of challan in whole of the Punjab. Even today all challans are paper based with almost no record.

With computerization of driving licenses, there is a dire need to automate the system of issuing challans and to introduce the point system as practiced in the rest of the world.

In the current evaluation and testing system for a driving license, one of the major problems faced was that an applicant with a learner's permit is allowed to drive and there is no accurate mechanism for the traffic police to test whether the applicant is eligible for a permanent license. Currently, there is no proper criteria of testing for issuance of a permanent license which is the biggest challenge faced by the department. In the present regime, an applicant must have a valid learner permit for a minimum of 42 days. After this period an applicant is eligible to sit for a paper-based test. The current driving assessment is not enforced and still many of the applicants can get a permanent license without giving this test. There are more chances of corruption in the current system where either an applicant can bribe an official or even skip the testing phase.

## e-Challaning

“Traffic Violation Reporting System” (e-challaning) is an Android-based mobile application that helps the Traffic Police in verifying the license status

of a person who has violated the traffic laws and issuing traffic violation tickets on the spot. Information related to the license holder is retrieved using the android-based application along with other related details. Furthermore, it will resolve the issue of fake licenses, which are being used by individuals, and making the department more equipped to enforce rule of law. Data collected via Android application can later be used for different statistical analysis, decision-making and improvements. The project will also

help improve the quality of driving, create awareness regarding driving problems, improve traffic standards and effective traffic control on roads, and help decrease the accident ratio. The project objectives are also aligned with the government's efforts to curb the menace of corruption from public offices and make the service delivery mechanism easy and transparent. On the other hand, IT enabled traffic officials will be able to provide more efficient services to citizens, whereas, it will also help the government to strengthen its initiatives to expand its revenue base by plugging the loopholes in the system.

Thus, implementation of this project is expected to lead to a significant increase in revenue collection by traffic police in the shape of traffic challans.



## e-Testing

The traffic department is constantly trying to make their selection criteria more transparent and efficient but there are still a lot of loop holes present in the current process. The department is making sure that the information of every issued license is stored in a centralised database, where no record can be tampered and no fake licenses are issued in back dates. To make the system and procedures more effective, an enforced e-testing environment shall be introduced. With the help of the new proposed system,

the department will

be able to inculcate road safety and control traffic more efficiently and increase its annual revenue collection. This procedure of e-testing will be implemented and made mandatory before the issuance of a permanent license, where an official will only issue license to those individuals who have successfully gone through this testing process. The

module is an addition to the current DLIMS system and will be integrated with the e-Challaning system. This will enable the traffic department to produce more traffic literate individuals, minimise the number of traffic violations and accidents and enable effective supervision of traffic by the traffic wardens.



# Complaints Management for Overseas Pakistanis

Previously overseas Pakistanis had been facing various problems in communicating their issues to relevant authorities in their home country and required an efficient and accessible platform for this purpose. Similarly there was no proper mechanism available with the authorities to track the complaints lodged by overseas Pakistanis.

PITB, in collaboration with the Overseas Pakistanis Commission (OPC), developed an online complaint portal for effective communication and to redress the complaints in time. The main reason behind setting up the online portal is to decrease workload and make the complaints tracking process easier. Moreover, it also facilitates the labor force in the middle-east countries who cannot access the online portal, by enabling them to call the helpline +92 42-111-672-672 (+92 42 111-OPC-OPC), which runs parallel to the Overseas Complaint Portal. The OPC call representative enters all the information into the system on behalf of a user.

It is an online portal, which allows overseas residents to lodge their complaints without having to make frequent visits to Pakistan. All they have to do is sign up on the website and enter the complaints regarding matters such as family disputes, property disputes, travel agents and airline related issues, criminal cases, financial disputes, issues related to cooperative society claim, etc. It also includes lodging a complaint for problems related to utilities, for example, water connection problems, telephone bills, electricity bills or sui-gas connection problems etc. The applicants can also have follow-ups on their complaints through OPC helpline or via directly commenting on their complaints. It has improved the overall efficiency to manage complaints efficiently. Currently, 7814 complaints have been lodged in portal out of which 3,579 have been resolved whereas the rest are under process. Using the previous manual system, the commission also did not have these comprehensive statistics.





# AGRICULTURE



Advances in information communication and technology have proven that if these are adopted by the government, they could deliver significant benefits for policymakers. The Punjab Agriculture Department joined hands with the Punjab Information Technology Board (PITB) and adopted ICT-based solutions, not just within the department but also for the wider farming community across the Punjab.

The PITB is a team of professionals who have been helping the Department of Agriculture develop numerous applications and systems to monitor and control functions of various department wings. The department has also utilised the PITB's expertise on all large-scale initiatives like Project Extension 2.0, E-Credit, Digital Subsidy Programme and connected agriculture programme that enhances the capacity of farmers by providing them with mobile applications pertaining to best practices in agriculture.

Our department's futuristic approach of transforming the agriculture into a market-driven, diversified and sustainable sector through integrated technologies and transparency is only possible through a partnership with the PITB. We look forward to collaborating with the PITB in the future.

**Muhammad Mahmood**  
Secretary Agriculture

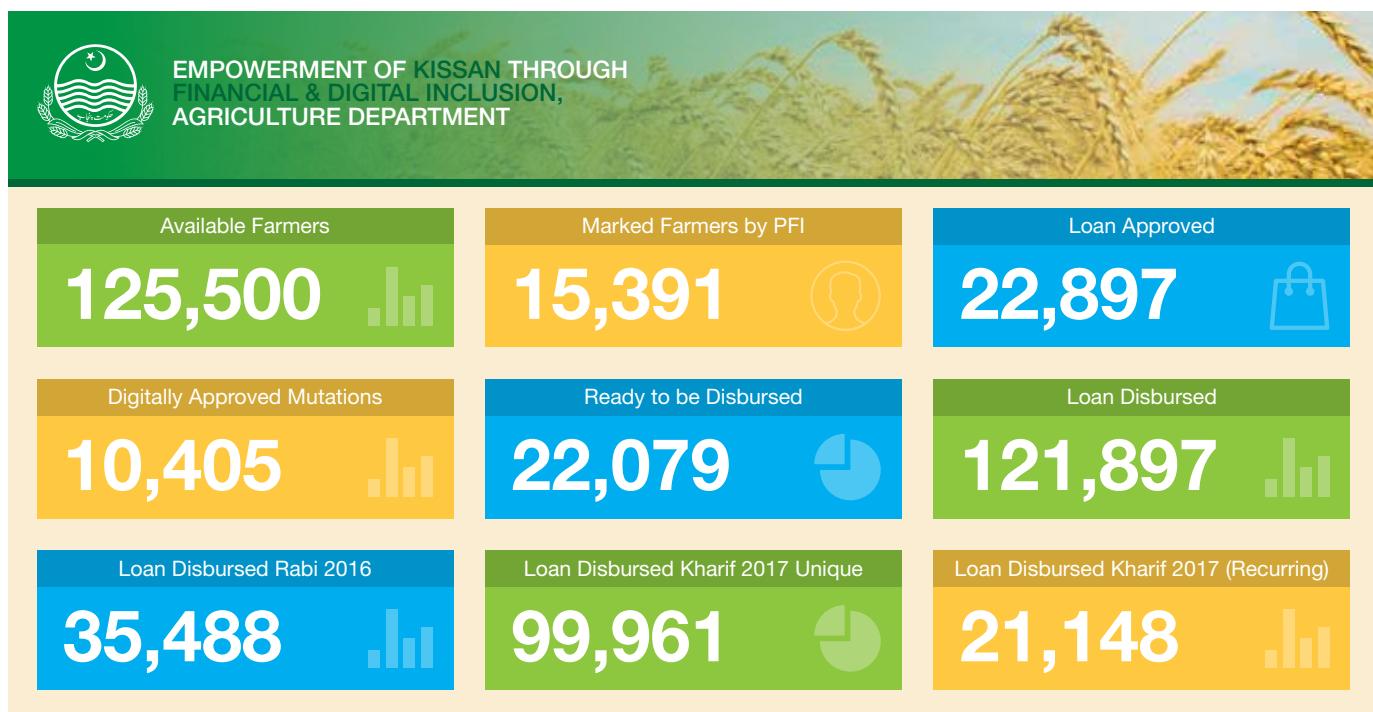
# Agriculture e-Credit Scheme

Punjab's economy is primarily driven by agriculture. More than 55 million households are directly or indirectly tied to this sector. Profit margins of farmers have declined over the time because of high cost of borrowing and high rates of agricultural inputs.

The Agriculture Department has initiated an interest-free loan scheme for small farmers. The scheme provides loans to farmers possessing land less than 12.5 acres and has a flexible repayment option. The PITB has developed a centralised system for managing the database, helping raise efficiency and

accountability of the scheme. All stakeholders can access the database of over 350,000 registered farmers. All processes involved in loan allocation have been automated. In the conventional method for loan processing, an applicant would have needed to visit the PLRA and bank more than 10 times to secure the loan, but with the help of this system, the number of visits was reduced to only three.

The Agriculture e-Credit Scheme has improved liquidity in the agriculture sector, timely availability of crop inputs, an increase in yield and higher profit margins.





As many as 110,000 farmers will be given mobile phones with 10 applications to enhance their capacity. Each farmer will have a mobile wallet through which the loan would be disbursed.

The most interesting aspect of the initiative is that mobile phones given to farmers will have 10 agriculture-related applications. These include:

### **Onboarding/Tutorial App**

The Onboarding/Tutorial app will be used to welcome the newly-registered farmers and verify their credentials. They will receive an audio/video based welcome message from the chief minister and given an introduction on how they could benefit from the program and its features. Moreover, they will also be access tutorials for all applications provided under the program.

### **Weather Alerts**

The weather app will show the forecasts based on the latitude and longitude of the farmer's location for 5 days. 'Today's Weather' will include wind speed, temperature and chances of rain. Farmers will be able to add multiple locations to receive alerts.

### **Crop Calendar**

This app will provide crop specific advisories. These are provided primarily in audio and video format for the benefit of less educated farmers but also available in text. This app will also educate farmers about new technologies, methods and techniques related to various crops.

### **Video on Demand App**

This will primarily serve the needs of farmers whose mobile literacy is low. By accessing this app, farmers will be able to see the latest video advisory on sowing, growing and harvesting stages of various crops. Pest and disease alerts will also be issued through this.

### **Expert Opinion App**

If a farmer requires expert advice, he can use this as a chat app to talk to an expert. It will support audio, as well as photo sharing. Farmers can send messages to agriculture experts nominated by the client and get quick advice on various issues.

### **Crop Yield Calculator**

This app will allow farmers to calculate the approximate cost of seeding, fertilizer and pesticide usage and crop yield based on their land size and crop type. The algorithms will be designed using the data provided by relevant government departments.

### **Marketplace**

The Mandi app will connect farmers with potential buyers. Buyers can also contact farmers using this app. For payment, they will use EasyPaisa Mobile Wallets.

### **Supply Chain Tracking**

The farm supplies app will allow farmers to browse, compare and buy various farm supplies such as fertilizers, seeds and pesticide from their mobile phones. The complete inventory and product transactions will be made visible for the client's stakeholders. For transactions on this app, farmers will use Mobile Wallets.

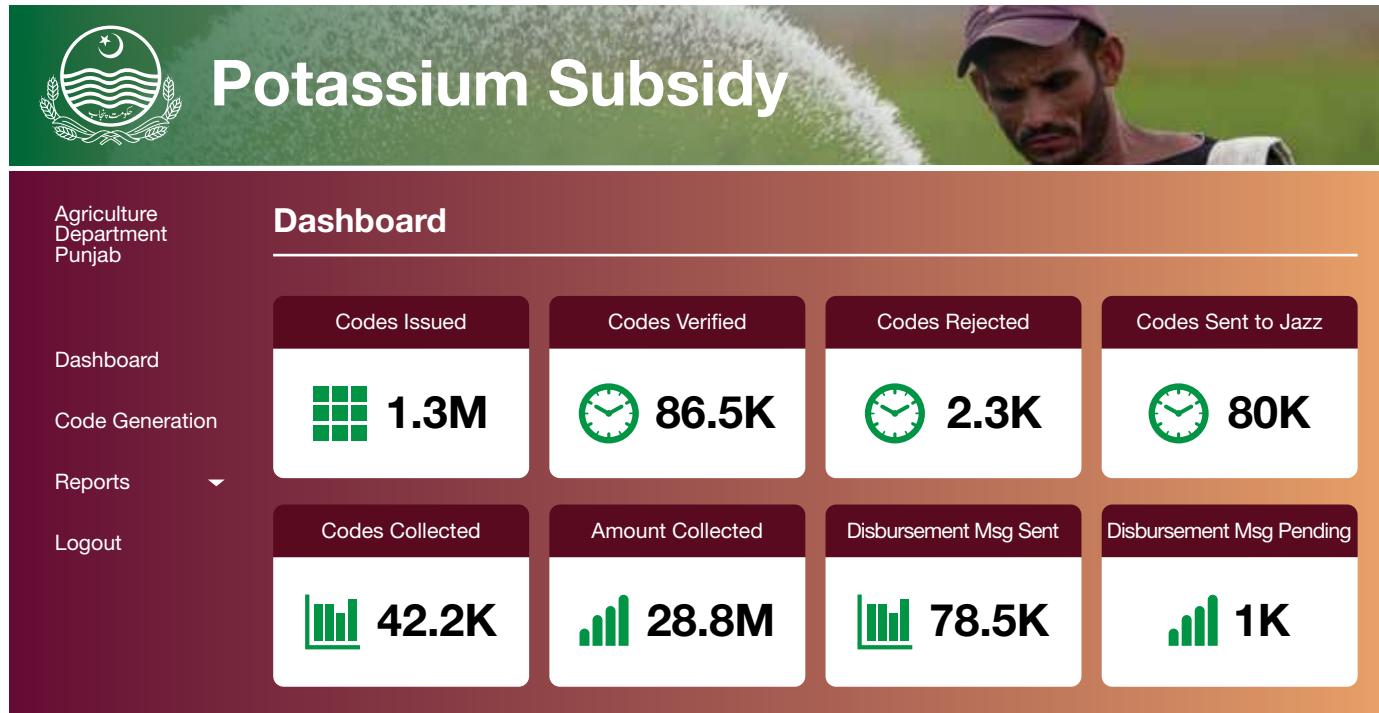
### **Agriculture Subsidy**

This will enable farmers to redeem subsidies given through various types of tokens (e.g. Potash Fertilizer Subsidy) through this app. Additionally, token redemption is available through USSD menu as well for Telenor SIM users.

### **Hyperspectral Imagery App**

This app will capture satellite imagery of land and check the health of the crop, soil moisture, pest information and then using the above mentioned parameters to recommend remedial measures.

# Potassium and DAP Subsidy



The Agriculture Department has been actively providing subsidies on fertilisers to facilitate farmers. Previously, an indirect subsidy was provided to farmers by cutting down price of fertiliser products. Since transparency and evaluation mechanisms for the indirect subsidy were vague, the PITB and the Agriculture Department have jointly launched a direct subsidy programme.

The PITB has developed a web portal enabling fertiliser marketing companies to generate unique codes for their products (MOP, SOP and DAP). The codes are printed and pasted inside fertiliser bags. The registered farmer has to purchase the

bag, scratch the coupon and send an SMS to the designated number. The system recognises the details and sends a confirmation. Then the registered farmer can go to an agent with the SMS and original CNIC to encash the subsidy money.

The system is developed in such a way that every successive transaction, location and usage detail is updated in real-time. The process has resulted in more transparency and accuracy in delivering cash subsidies to registered farmers. It has also resulted in a vast database of registered farmers and statistics regarding geographical use of certain fertilisers.

# Wheat Procurement



**36**

Districts Across Punjab



**300,000+**

Farmers Get Benefit Every Year



**382**

Online Procurement Centres

The Punjab government buys 40% of the wheat produced in the province every year to stabilise market price of this staple crop.

The PITB has developed a centralised system based on an android application to verify and record data of farmers from whom wheat is purchased by the government. Each farmer's data is recorded through the application at the procurement centre. The

centralised system provides real-time reports of wheat procurement process from each centre. The application has an inbuilt feedback system that sends SMSes and makes automated calls to farmers to gather their feedback on the procurement process.

The centralised system enables real-time monitoring, improved transparency and accountability in the wheat procurement process.





# Kissan Card

**K**issan Cards are issued to farmers benefiting from various government programmes. It aims to consolidate recipients' information for transparent and efficient implementation of these interventions.

The PITB has developed a digital platform and has provided all district administrations with user logins to enter details of farmers in their jurisdictions. The information added to the system pertains to demographics, contact details, crops and landholding patterns, live-stock, irrigation system and mechanisation.

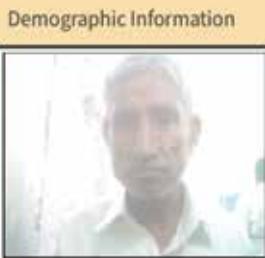
This initiative has resulted in appropriate allocation of schemes to the right farmers, ease in broadcasting message to the larger mass and the creation of a centralised database.

**1.28M+**  
Registered Farmers

**36 Districts**  
**144 Tehsils**  
Covered

Citizen Identification Number

CNIC \*

Fetch

District \*

Select District

Tehsil \*

Select Tehsil

Mouza Chak.No \*

Select Mouza Chak.No

Khewat No.

221-212

Khasra No.

21981

Farmer Name \*

لکھن علی

Name \*

صلح علی

Relation \*

Select Relationship

Name \*

صلح علی

CNIC \*

3730

Cell Phone No. \*

032

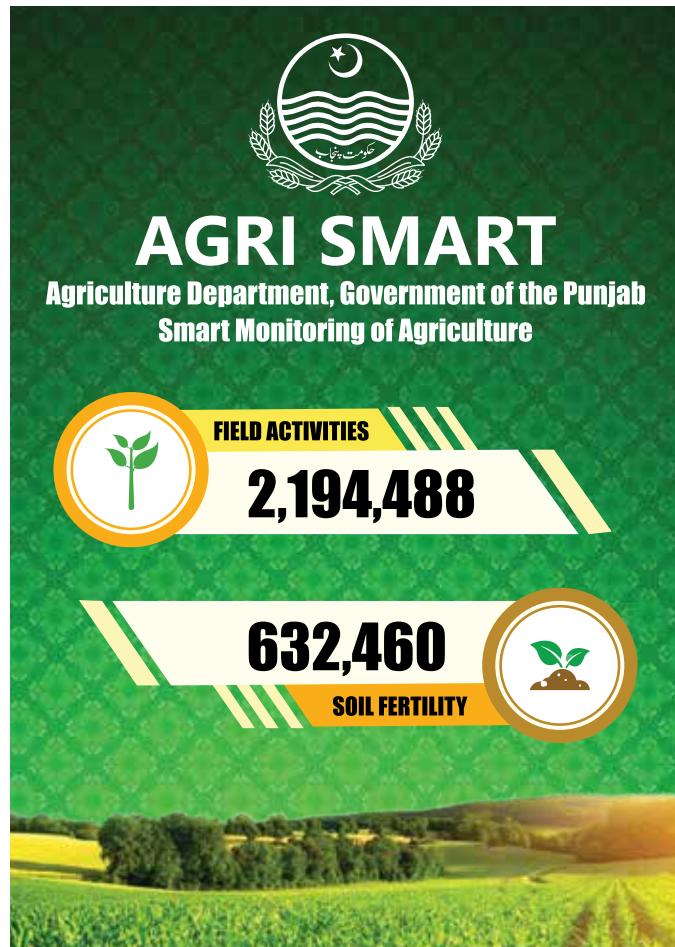
# Modern Farmer Extension Services Through AgriSmart

The AgriSmart application has been developed for the Punjab Public Management Reform Programme (PPMRP) to help streamline tasks of agriculture extension workers of the provincial government.

The application has been used to create a digital database of:

- Farmer advisory services
- Plant clinics
- Crop reporting
- Pest scouting and warnings
- Farmer trainings
- Monitoring of agricultural inputs
- Soil sampling and testing
- Fertiliser monitoring and testing
- Research trials

The digitisation of agricultural data has facilitated farmers and made advisory services easily available to them. The database of reported activities is being used to plan interventions to improve yields and maximise land use. Before this application was introduced, there was no accurate record of field staff. As much as 67% of their time was spent in departmental tasks instead of fieldwork. With the help of the application, the field staff's time taken in departmental tasks has been brought down to only 15%. From April 2015 to July 2017, the application has marked 2.2 million entries. As many as 2,724 field workers equipped with smartphones carrying the AgriSmart app have sent details of extension activities daily. The application also has a feedback option to enable farmers to share ideas with the government.



# Restaurant Invoice Monitoring System (RIMS)

RIMS was developed for the Punjab Revenue Authority and rolled out in September 2015 in Lahore and Faisalabad divisions. The system aids registration of various food businesses and collection of provincial sales tax from these establishments. Using RIMS, the PRA has been able to add 386 restaurants into the tax net. RIMS also has an email notification system which is triggered if no tax is received from a food business.

The system is now being extended to the Rawalpindi division.



**3.3M**  
Invoices Collected



**519M**  
Tax Collected (Rupees)

Lahore and Faisalabad Divisions



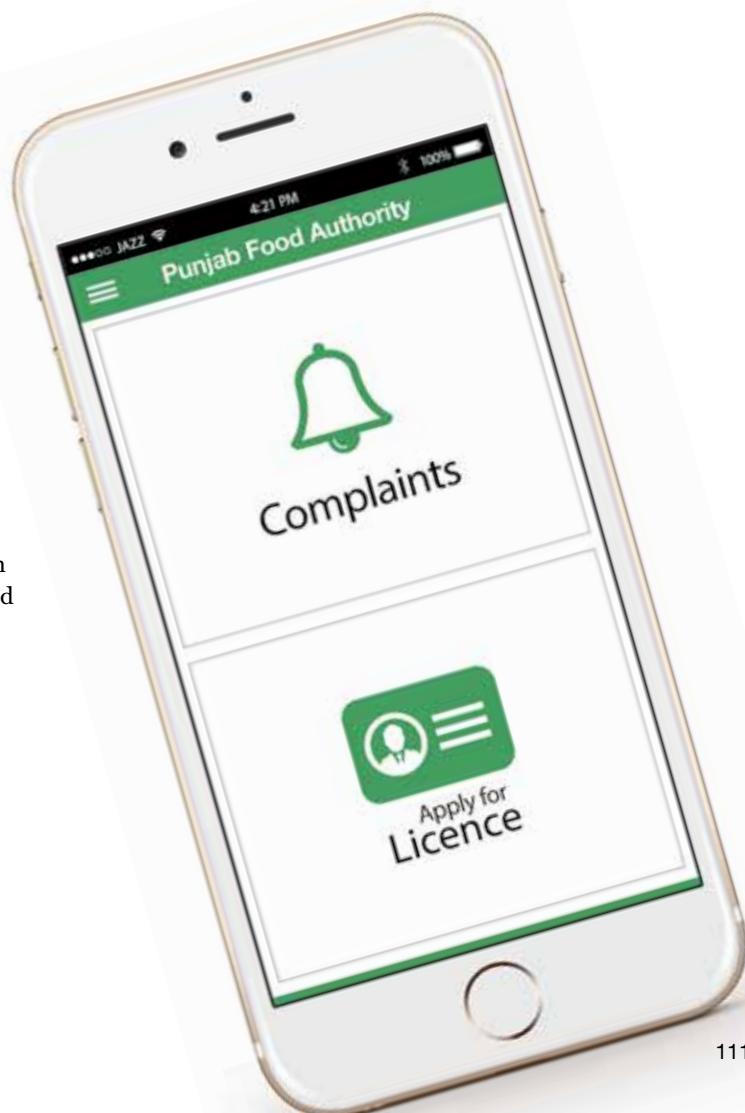
# Smart Food Licencing System for Punjab Food Authority

ITB has collaborated with the Punjab Food Authority to launch a 'Smart Food Licensing System' to facilitate food business operators in applying for a licence. Besides enabling food businesses to apply for licences, the mobile application available publicly for both android and iOS platforms can be also used by the general public to register food quality and hygiene related complaints against eateries.

The application has an interface for PFA officials through which they can validate requests for new food licences after field visits or conduct inspections on public complaints. The system is also integrated with a banking platform in order to monitor financial transactions related to licence fee and fine payments.

Since the launch of the Smart Food Licencing System in January this year, over Rs. 44 million have been collected against food license fee payments.

**Rs44M**  
have been collected against food licence fee payments.



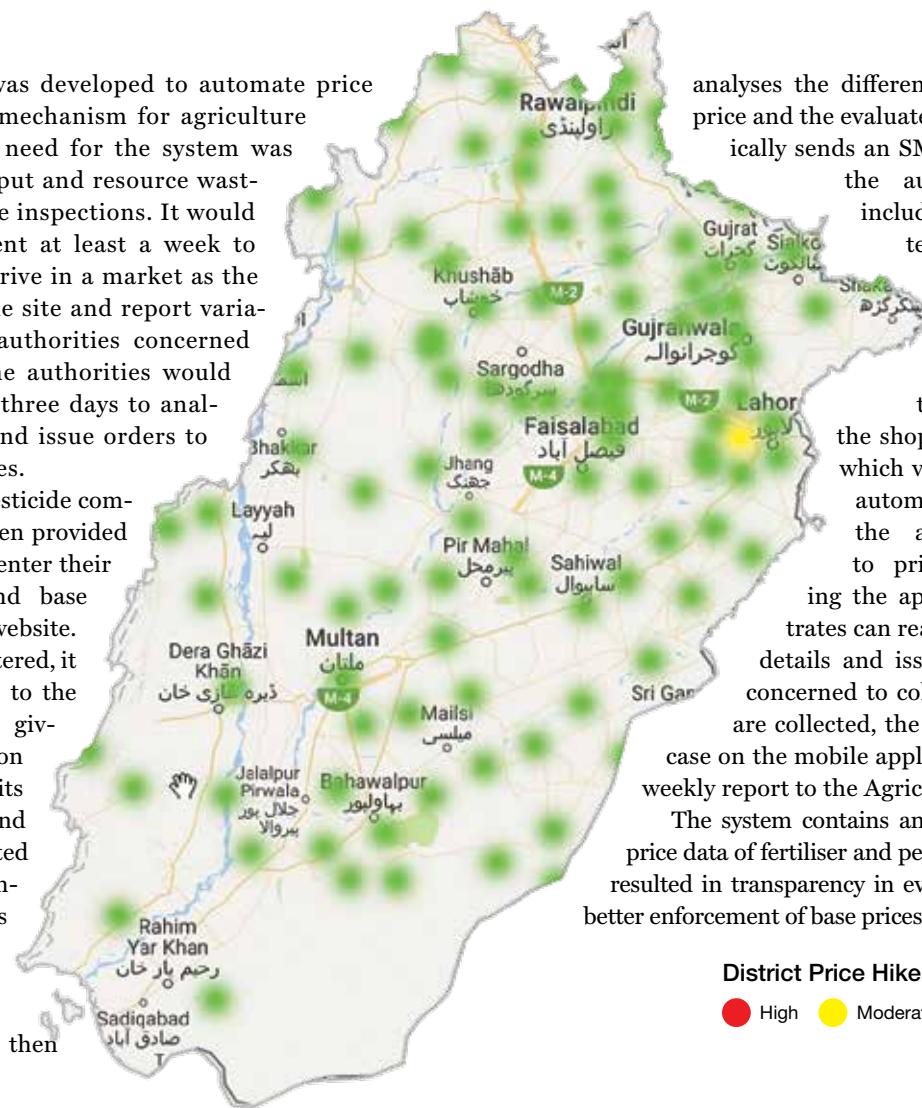
# Fertiliser and Pesticide Monitoring System

This system was developed to automate price monitoring mechanism for agriculture inputs. The need for the system was felt because of output and resource wastage in manual price inspections. It would take the department at least a week to finish inspection drive in a market as the staff would visit the site and report variation in prices to authorities concerned after two days. The authorities would then take another three days to analyse the variation and issue orders to magistrates for fines.

Fertiliser and pesticide companies have now been provided with user logins to enter their product details and base price onto the website. Once the price is entered, it automatically syncs to the mobile application given to the inspection staff. The staff visits various dealers and uploads the evaluated price and other identification credentials against each product quantity of fertilisers and pesticides. The system then

analyses the difference between the base price and the evaluated price and automatically sends an SMS of the variation to the authorities concerned including the designated tehsil price magistrates who have also been provided with a compliance Android application. The details of the shop and the product for which variations are found is automatically updated on the application available to price magistrates. Using the application, the magistrates can readily update violators' details and issue orders to officials concerned to collect fines. Once fines are collected, the magistrate closes the case on the mobile application and submits a weekly report to the Agriculture Secretary.

The system contains an online storage of the price data of fertiliser and pesticide products. It has resulted in transparency in evaluation of prices and better enforcement of base prices.



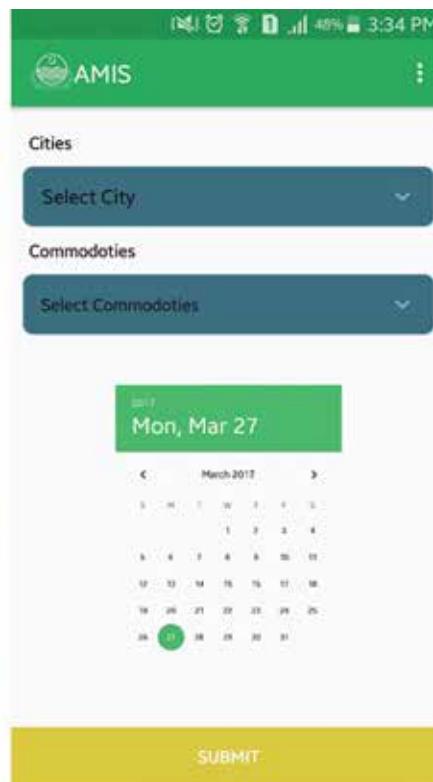
District Price Hike Heat Map

High Moderate Low

# Agriculture Market Information Application

The Agriculture Department has a system of market committees covering the entire province to notify prices of agricultural products. These market committees issue rate lists for products on a daily basis.

Previously, there was no centralised mechanism to broadcast price information for agricultural products. The PITB has developed a public Android application enabling the Agriculture Department's marketing wing to disseminate notified prices to the public.



Item Name	Quantity	Item Price
Paddy (IRRI)	100 (KG)	N/A
Sugar	100 (KG)	Rs 5850
Gram White(local)	100 (KG)	Rs 13900
Gram Black	100 (KG)	Rs 9250

Selected Date : 3/27/2017

# Bulldozer Booking Management System



The Agriculture Department possesses more than 300 bulldozers. Manual monitoring of bulldozers under use at field sites did not allow accurate recording of fuel consumption and cost of repair and maintenance of the machines. With manual reporting, there were also no timely updates on availability of bulldozers.

The PITB was consulted to develop a system for booking management and real time tracking of bulldozers working in the field.

All Agricultural Department bulldozers have now been installed with GPS trackers to monitor fuel consumption, distance

travelled, and location of the machines in real time. The PITB has also developed an online booking system with an integrated queue management (first in - first out) allowing more transparency. The Agriculture Department can now review each activity against its bulldozers and allocated resources in real-time. The system also sends SMS alerts to farmers on each successive step in online booking of bulldozers.

The bulldozer booking management system has led to more effective allocation of resources. It has streamlined the booking process and ensured greater transparency.



# District Management Price Control

The provincial government is employing digital monitoring mechanism and toll free helpline devised by the PITB for recording complaints against profiteering and hoarding in trade of essential commodities.

An online price control and monitoring system has been developed and deployed since October 2013 (<http://pcecs.punjab.gov.pk>). District magistrates use the system in their daily price checks. The online system has also provided for citizens awareness and feedback regarding commodities' prices. The PITB is now developing a multi-level pull base SMS system for gathering feedback.

The GIS-based system provides for predictive modeling for prices.

- Android Apps and 1,500 phones given to field staff of Agriculture, Labour, and Food Departments and Special Branch officials for spot checking
- Fine imposed: Rs. 771,848,259
- No. of Persons in FIR : 117,709
- Persons arrested : 88,525
- Markets visited: 1,222,084



Enter your Login Details

User Name:

Password:





# ENTREPRENEURSHIP

# Plan9

**P**ITB established Plan9 in August 2012 as the largest technology incubator in the country to promote entrepreneurship and urge the youth to be job creators instead of job seekers.

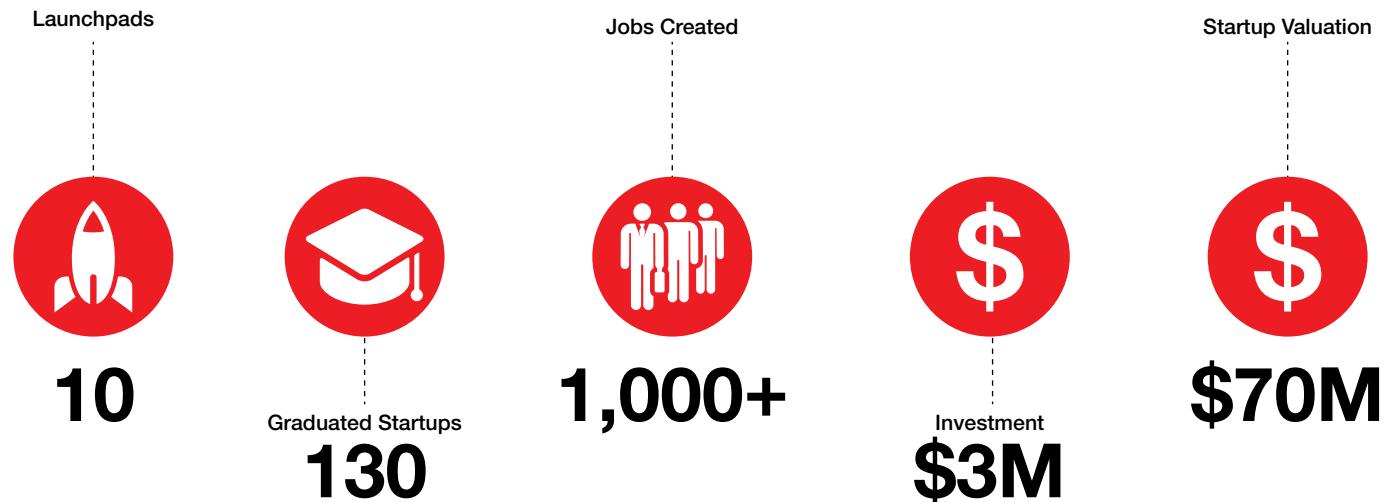
The project was started in view of studies and reports pointing out shortage of employment opportunities needed to accommodate the rising youth population of the country, estimated to be around 30 million.

In five years since its inception, Plan9 has managed nine successful cycles in which 130 startups have graduated.

Plan9 offers a zero equity model ideal for budding entrepreneurs and has industry experts on-board as mentors and trainers,

ensuring value for all startups. Startups are offered six months of incubation with 24/7 office space, internet facility, and a monthly stipend, in addition to business and technical skills training along with legal advice. The incubator has created 1000+ jobs through its startups, which have together raised \$3 million in investments and are valued at an accumulated \$70 million.

Plan9 has partnered with over 15 other incubators, accelerators and VC funds internationally to bring exposure to local entrepreneurs. It has also successfully worked with Careem, Unilever, Nestle, Australian High Commission, US State Department, and ILM2 (a project of DFID) in finding talent and products fit for different markets.





## WhizKids

To encourage an entrepreneurial spirit in school-age students, Plan9 launched the WhizKids programme in 2013. Under the initiative, Plan9 introduces the startup ecosystem to children aged 8-18 to help them learn about latest technologies as well as identify their strengths and interests. The programme is active throughout the year and is dynamic as well as diverse in its structure as per partner institutions requirements.

## Network Partnership Programme

To build a wider outreach of startups founders, Plan9 has launched a Network Partnership programme (NPP). Under the programme, partner universities receive an incubation manual which includes a format on the basis of which the university can run an incubation centre. It also includes the criteria by which the incubator can select, mentor and graduate startups. This has encouraged a significant number of graduates to get involved.

**20+**  
Network Partners

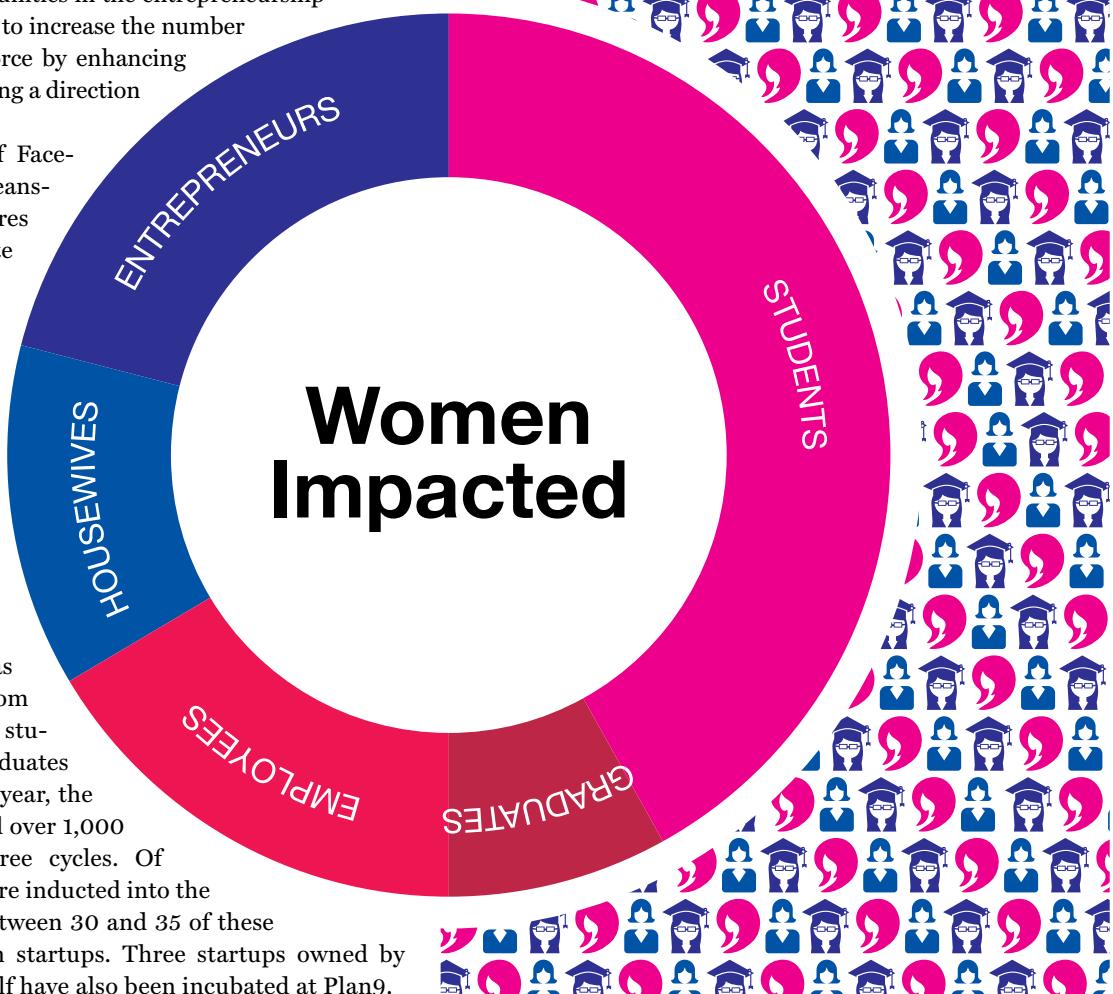


# Herself

**P**ITB's recent initiative 'Herself', launched in summer of 2016, is designed to empower women by acquainting them with opportunities in the entrepreneurship sector. Herself's vision is to increase the number of women in the workforce by enhancing their skill set and providing a direction to their career paths.

With the support of Facebook's initiative #SheMeansBusiness, Herself ensures providing a complete package to participants of the programme to enable them to step out and start working on their own ventures independently. The focus of the programme is divided into three categories: soft skills, technical skills, and entrepreneurial/business skills.

So far, Herself has attracted women from diverse backgrounds: students, employees, graduates and housewives. In one year, the programme has received over 1,000 applications for its three cycles. Of these applicants, 120 were inducted into the training programme, between 30 and 35 of these trainees have their own startups. Three startups owned by women trained at Herself have also been incubated at Plan9.



# PlanX

**P**ITB seeks to promote sustainability of technology startups through its PlanX accelerator programme. Founded in September 2014, PlanX empowers commercially viable mid-stage technology startups by providing access to multiple funding channels, specialised network of mentors and global exposure to establish high impact businesses. PlanX also bridges the gap between technology and businesses by regularly conducting specialised workshops and trainings that

are open to startups and entrepreneurs.

PlanX has assisted its startups by helping them grow their customer base and connecting them with investors. A significant number of its startups have gone global, offering their products and services across continents. What sets PlanX apart from most other technology accelerators globally is the policy of following a zero equity model. In only three years, it has accelerated 35 start-ups with a success rate of 90%.

**Total Valuation \$60 Million**



Number of Startups

**37**



Jobs Created

**800+**



Investment Raised

**\$3.8M**



Partners

**15+**

**Combined Revenue Earned \$743,807**

# TechHub Connect

## Conferences/ Workshops



## Young Professionals



## Startups/ Entrepreneurs



**T**echHub Connect is a project of PITB. It is not only Pakistan's first co-working space for freelancers, but it also acts as a bridge between government, industry and academia. Therefore, it has become the touchstone for co-working spaces across the country.

Through its co-working space, TechHub Connect is also building a community for freelancers to share resources and grow together. Being a part of this space not only enables them to enhance their productivity, but also assists them in their growth from freelancers to startups/companies. At TechHub Connect, freelancers are provided with office space equipped with dedicated internet service and uninterrupted power supply. In addition to this, regular trainings, workshops, seminars, conferences and mentorship programmes are also organised for professional development of freelancers. Furthermore, freelancers are provided with much-needed, international exposure and networking opportunities which help them connect with potential clients.

A Roundtable Conference, held twice a year, provides a platform to hundreds of leaders from the government, industry and academia to deliberate on issues pertinent to the IT industry. Major goals achieved

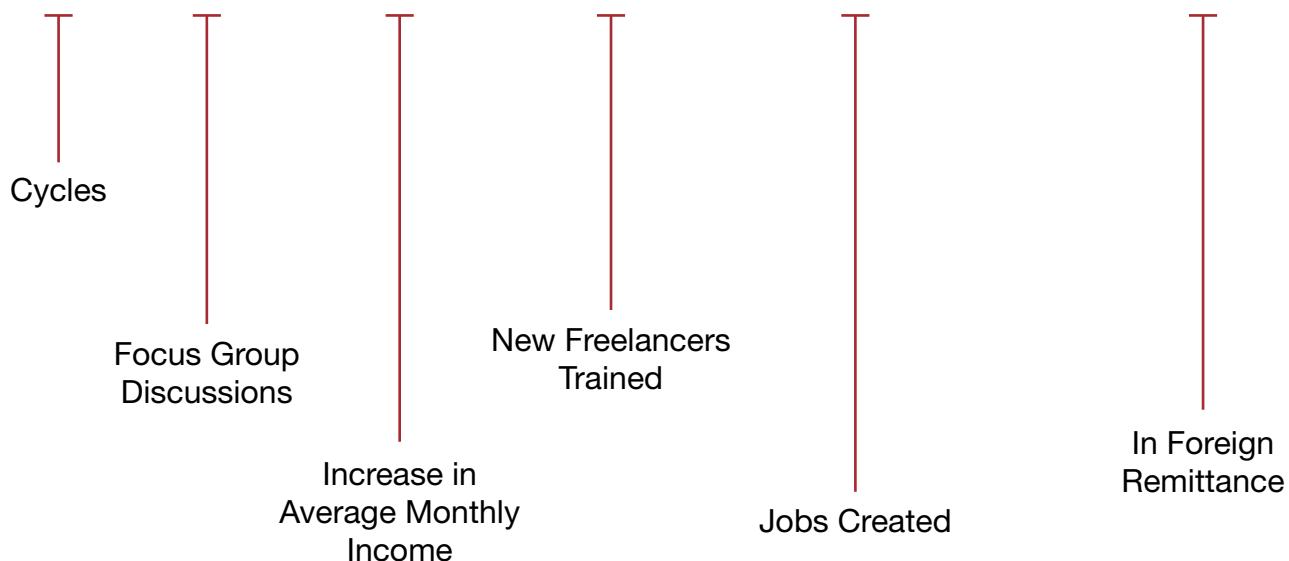
over the course of four such conferences include the draft for the Punjab IT Policy 2017, Nationwide IT Census and successful advocacy for relaxation in broadband-related tax regimen.

TechHub Connect has also established a National Entrepreneurs Network (NEN) to foster communication and exchange of ideas among incubators, accelerators, co-working spaces, their managers, entrepreneurs, new ventures, and other stakeholders. The network is also acting as a gateway for collection and circulation of information about incubators, accelerators and co-working spaces to assist entrepreneurs with new business ideas. TechHub Connect has also established partnerships with the 'Global Start-Up Awards' (as Country Partner) and various local organisations. Furthermore, TechHub Connect has collaborated with 'CrossOver' as main organiser for its hiring tournament in Pakistan; with 'Wordpress' for conducting WordPress Official Meetups; and with 'More' magazine in pursuance of TechHub's vision.

Additionally, TechHub Connect has signed partnerships with two international co-working spaces: Esdip-Berlin and Hubud-Indonesia, and has hosted international delegations from Google and ATX+Pak.



**10    30+    50%    450+    2,600+    \$2.6 Million**





# Chief Minister's e-Rozgaar Training Programme

The Chief Minister's e-Rozgaar Programme aims to provide training to budding freelancers to help improve their skill set and assist them in earning a sustainable income and achieve upward economic mobility. The programme is catering to the strata of society that is educated but unemployed and aims to reduce the rate of unemployment by encouraging self-employment through internet-based freelance work opportunities.

According to a report published by UpWork in 2014, Pakistan ranked third in global freelancing. In view of the widespread scope for freelance work, a series of workshops were planned by TechHub Connect that led to the adoption of a freelancing mod-

el which culminated in the e-Rozgaar Programme. This scheme aims to establish freelancing centres in every district of the province to provide training in basic freelance skills.

The mission of the e-Rozgaar Programme is to set up 40 centres in the province to train 10,000 freelancers every year. Seven centres have already been set up at the University of Gujarat, Government College Women University Faisalabad (for women only), University of Engineering and Technology Taxila, University of Engineering and Technology Lahore, COMSATS Sahiwal, Punjab University Jhelum Campus and Government College Women University in Sialkot.

The training curriculum is broken down into three course





tracks and one training track. The course tracks are Technical (coding, website development etc.), Non-technical (blogging, content writing, digital marketing etc) and Creative Design (graphic design, logo design, concept design, website design etc).

The candidates need no prior experience for non-technical and creative design domains and need minimum education/relevant degree for the technical domain. Each candidate is taken through a mandatory introduction to freelancing course before specialised skills training. The trainers also encourage and help candidates make online profiles and acquire orders.

The specialised training track is an exclusive component added in collaboration with Facebook, where our Master Trainers build specialised course tracks for candidates in order to educate them on how to expand their work on social media.

This track is also beneficial for candidates interested in maintaining social media accounts for their clients. This training on its own qualifies candidates to take on accounts for digital marketing, social media marketing and social media handling.

There is also a monitoring and evaluation process to ensure quality of trainings being delivered to all trainees.

## COURSE TRACKS



Technical Training



Non-Technical Training



Creative Design



Facebook Training

### e-Rozgaar Lounge (Co-Working Space for Experienced Freelancers)

e-Rozgaar Lounge aims to give free co-working space to freelancers in all 36 districts of the province. All centres also double as co-working spaces after classes finish. The labs are equipped with free Wi-Fi and laptops facility.

### National Freelancing Convention

This event brings together leading freelancers from all across Pakistan as well as relevant stakeholders of freelancing to network and interact with one another.

The convention promises to not only build stronger ties within the Pakistani freelancing community but also help in creating cross-industry avenues for freelancers. The TechExpo at the NFC brings together freelancers, payment solutions, bloggers, IT companies and all other stakeholders of the relevant industry.

### Train the Trainer Programme

All e-Rozgaar trainers go through a mandatory two-day session with Master Trainers where they are taught everything from curriculum management to classroom management.

### Partnership with Facebook DevC

Through a partnership with e-Rozgaar, Facebook Development Circle will expand in Punjab through freelancing centres. The partnership will also result in development of specialised course tracks as per the needs of each domain and centre.

### Talks, Trainings and Workshops

e-Rozgaar has also held talks, trainings and workshops in col-



Award ceremony at National Freelancing Convention 2017.

laboration with CrossOver in e-Rozgaar centres.

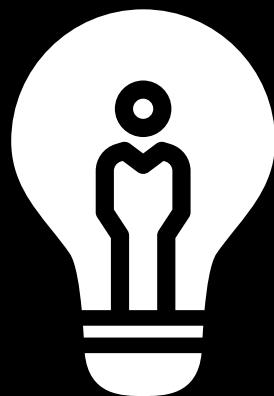
### Total Number of Application Received in First Cycle

PITB has registered 33,109 applications from graduates. Selected candidates will be given three months training for freelance self-employment. Five centres are dedicated for female candidates. In the first phase, 10,000 candidates selected on merit through a transparent process will be trained in three batches during the current year.

### Early Success

Students have started building their online platforms with the highest number of accounts on Fiverr, followed by profiles on UpWork and PeoplePerHour. The average rate of income is \$91.29 per order where the highest value order has been of \$1,000 and total earnings of \$9,000 approximately.

The latest centres opened in Sahiwal, Jhelum and Faisalabad are on average taking orders of \$15.8 per candidate.



# EXTERNAL PROJECTS



# Waseela-e-Taleem

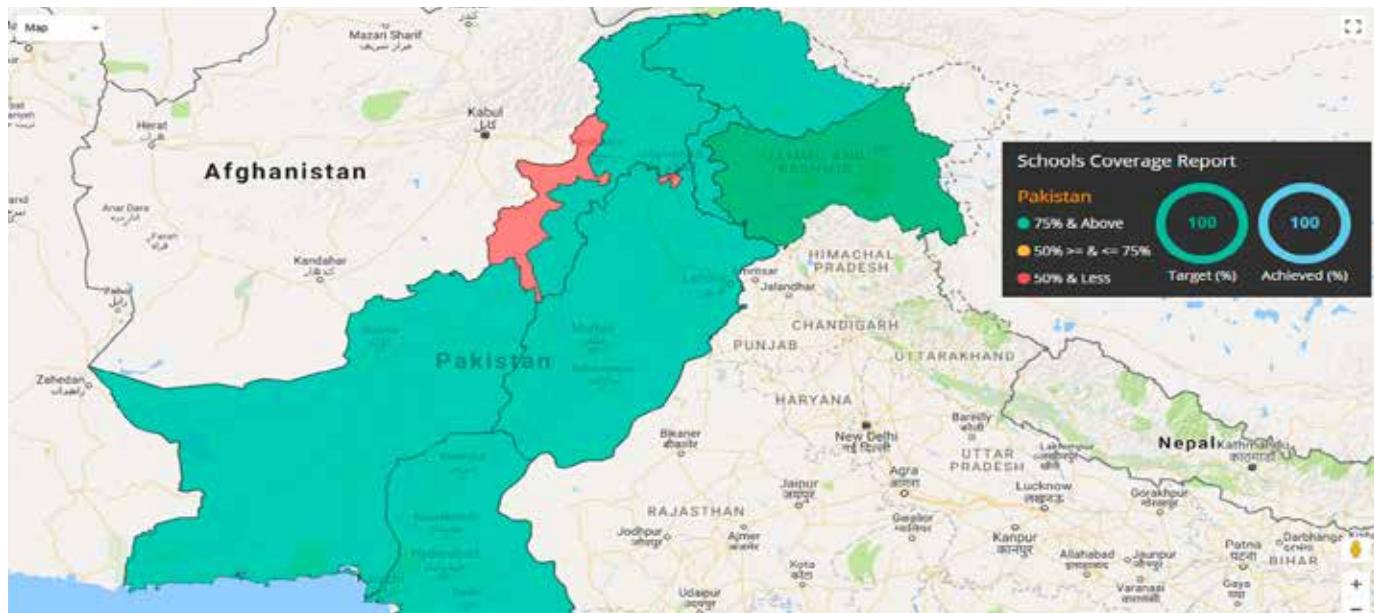
Irrregularities in stipend disbursement process of Waseela-e-Taleem program were a major challenge for the Management of Benazir Income Support Program (BISP). This program provides a quarterly stipend to deserving students based on attendance. BISP required a reliable system to eliminate these anomalies and streamline the overall process. They were looking for an accurate data collection model (that could geo tag the surveyor location for removing fake data). They required a system that would handle huge amount of data without any data loss and its integrity.

To solve these issues and to evolve an accurate data collection model that could geotag surveyors' location, PITB has developed a reliable system that includes an Android application for collection of data on attendance and distribution of stipends. The system also helps

BISP perform real-time monitoring with following features:

- Geotagging location of surveyors
- Photos of school and their head teachers for authenticity of data
- Change of class levels in case of promotion/demotion of student

Using the PITB-powered system, attendance of a total of 1.2 million students has been marked only in the first quarter of 2017. The BISP now has a working model which can be implemented in other field activities. It is planning to implement this model in a project called Micro Supply Capacity Assessment (MSCA).



# Benazir Income Support Programme - National Socioeconomic Registry

**A**s a major social safety net program by the Government of Pakistan, the Benazir Income Support Programme (BISP) maintains a National Socioeconomic Registry (NSER) - a database of information about the socioeconomic status of over 27 million households across the country (except two agencies of the Federally Administered Tribal Areas).

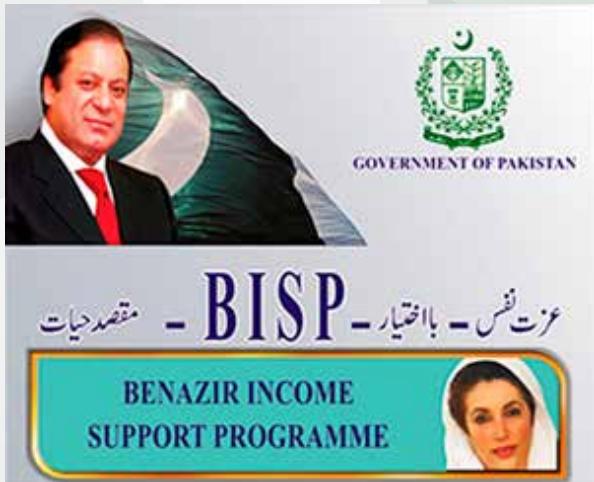
The registry was set up as a result of a Poverty Scorecard Survey (PSC). The survey covered 87% of the country's population. The registry enables BISP to identify eligible households through a Proxy Means Test (PMT) which calculates the poverty levels and determines the welfare status of a household on a scale between zero and 100.

A second household survey, planned for 2017-18, is in progress. An android-based mobile tablet application has been developed to capture household data for this purpose. The application uses automated data sampling for verification of information collected by enumerators and communicated to supervisors via bluetooth. Data, verified by the supervisor, is submitted to the central NSER database via a secure VPN.



Currently, 1,800 surveyors across 12 districts are using the application. A total of 2.2 million surveys have been conducted so far.

Courtesy of the World Bank



## NATIONAL SOCIO ECONOMIC REGISTER



# Hajj Operations: End-to-End Automation

Hajj operations were traditionally performed by Ministry of Religious Affairs and Interfaith Harmony through manual and severely cumbersome processes that had many drawbacks. In 2013, Ministry of Religious Affairs sought PITB's help to automate their complete end-to-end hajj operations with modern and robust Hajj Management System. The aim of the system is to ensure transparency, mitigate corruption, efficient management, usability, and convenience for all stakeholders.

The platform has more than 15 working modules including Pilgrim Registration System, Balloting, Automation of Haji Camps, Flight Booking, Building and Room Allocation for Makkah & Madinah, Online Differential System, Hajj Group Organizers' Management Information System, Monitoring System, Complaint Management, Online Inquiries and Mobile Apps etc.

In Hajj 2017 operations, 338,696 applicants (89,040 groups) were registered through the Government Hajj Scheme Applicants Online Registration System. This year 10 designated banks with 9,061 branches and more than 19,000 bank officials were involved in online registration for 10 days through a centralized system of PITB without a single second of down-

time. Previously, balloting for Hajj used to take 2 – 3 months but now it is processed in a day and results announced through SMS & made available online in just an hour's time.

There are number of features in Haji Camps automation system including the training schedule, attendance of pilgrims and vaccination activities etc. Presently, Flight scheduling and booking takes only 2 days. Whereas, building and room allocation used to take at least six to seven hours which is now accomplished in just 20 minutes. Through improved coordination with banks, differential amounts are now being reimbursed to pilgrims before the departure of their flight through a centralized system.

Hajj Monitoring System has also helped to improve monitoring process through feedback and complaints launched on the system. It also provides comprehensive dashboard to all the concerned authorities for better management and timely decision-making.

These revolutionary solutions are well-received by the pilgrims and the Ministry alike during management of Hajj operations every year. In addition to this, it has been a matter of great honor for PITB to implement the same for Nigerian government.



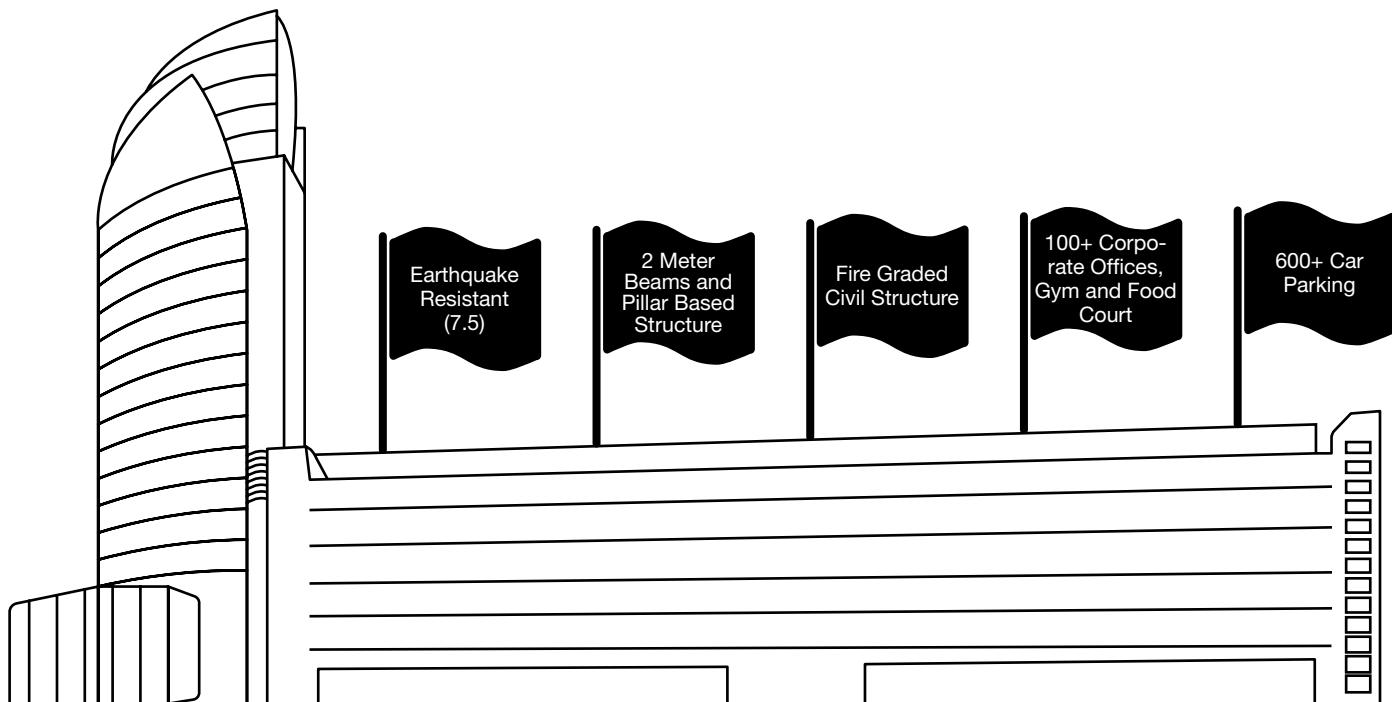


# Arfa Software Technology Park (ASTP)

Lahore has a vibrant IT industry but the majority of its software houses were scattered all over the city's various commercial areas. Keeping in mind the global practice in the IT industry, Arfa Software and Technology Park project was initiated in 2012. Back then, the project's name was Lahore Technology Park but it was later renamed to honor the memory of late Arfa Karim, a Pakistani com-

puter prodigy who became the youngest Microsoft Certified Professional at age nine in 2014.

ASTP is the country's largest Information and Communications Technology Park. Its 17-storey building is the first such international standard facility in Pakistan. Another motivation for the project was to disseminate the Government of Punjab's IT vision to the general public and businesses.





# Peaceful Pakistan



Lifetime Fan Base  
**157K**

Organic Reach per Month  
**10-15 Million**



Number of Tweets  
**2,046**

Number of Followers  
**3,247**



Monthly Page Views  
**15,000**

Monthly Visitors  
**10,000**

The Peaceful Pakistan programme was undertaken as part of the 'Institutional Arrangements for Improving Media and National Narrative' project in collaboration with the Information and Culture Department, Government of the Punjab, and the Inter-Services Public Relations (ISPR). It aims to promote tolerance, interfaith harmony, peaceful co-existence and an overall positive image of Pakistan over popular social media platforms (Facebook, Twitter) and through the programme website. It entails production of highly creative content including short films, animations and infographics which target impressionable segments of the society. Peaceful Pakistan has, since its birth in 2015, expanded its reach phenomenally to around 40

million people across Pakistan. Thus far, more than 3,000 original graphics and over 850 campaign videos have been produced by Peaceful Pakistan with an active outreach of 157,591 followers on Facebook and over 3,000 followers on Twitter.

The team at Peaceful Pakistan is also responsible for analysing and vetting possibly objectionable Facebook/Twitter pages, blogs and websites promoting violence, hate speech, sectarianism and extremism in Pakistan. In case such material is found, these weblinks are directly reported to the Pakistan Telecommunication Authority (PTA) for necessary action on a regular basis. Out of a total of 2,950 links vetted by the team, 171 were declared objectionable and duly reported to the authorities.

