

Introduction to Common Mobility Card (CMC)



Urban Mobility India 2010 Conference

New Delhi

3 to 5 Dec-2010

Evolution of Tickets

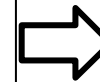
After paper tickets, Magnetic ticket system came into being.

- Proprietary inflexible solution, deemed dated now
- Devices have many moving parts involving high maintenance & operational cost
- The result was a poor user experience with fraud possibilities



Single operator Smart card ticketing system

- Still deemed proprietary solution but complex design
- Devices have no moving parts and thus operational cost somewhat under control
- The result was a better user experience with fraud under control



Unified Ticketing

- The front-end ticketing across operators remain whatever they have installed
- Financial data passes through single transit clearinghouse to handle settlement across all operators and all modes
- Open system of clearing house gives flexible modern solution
- Banking cards, NFC devices, telecom-transit products all can be accommodated
- The result was an excellent experience



India Adoption – A Background to Common Mobility Card

- The Ministry of Urban Development (MoUD) is spearheading a national program of interoperable Automatic Fare Collection (AFC) systems for public transport :

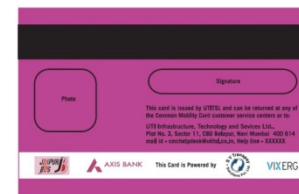


- Common mobility card across modes of transport and cities
 - Convenience and seamless experience for commuter
 - Economies of scale to bring down costs compared to solo efforts of Public Transport organizations (PTOs).
- UTI ITSL has been awarded the task of :
 - Issuing Common Mobility Card
 - Bringing out common interface standards for unified ticketing
 - Provide AFC systems wherever required
 - PTOs will continue retain control over pricing, routes etc. of their fleet management.
 - Business rules of PTOs will be incorporated in AFC & Common mobility Card

Common Mobility Card (CMC) for Public

A day in the life of a typical commuter in a large city

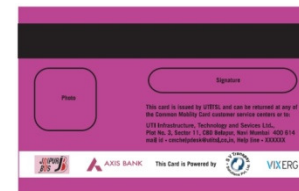
- Leaves home area in a bus for connection on a Metro, mono rail or suburban rail
 - For a regular commuter the pass on the CMC product purse
 - For casual customer, trip ticket on CMC using common mobility purse
- Alight a Metro, Mono, suburban rail or different PTO – Same facility for commuter
- Got to a different city in urban agglomeration– Same facility for the commuter
- Use Toll Road – money deducted from Common Mobility purse or product purse depending on whether casual or regular commuter
- Occasionally use own transport – money deducted from common mobility purse for Parking



A Technical Description of Common Mobility Card (CMC)

The CMC is :-

- A Definition of a contactless smart card's data layouts & access rules.
 - Standard interoperable ePurse feature, and dedicated space allocated for AFC Systems to store local fare products.
 - Multi-modal applications on transport, toll, parking etc.
- Described by standardized specifications which detail all things necessary to issue, add value to and consume value from a CMC.
- Includes a complete set of standards ranging from security key management through to system interfaces.
- A Certification Process of AFC system to ensure CMC acceptance and comply with the CMC standards.



Benefits of Common Mobility Card

- Interoperability for passengers between various modes of transport
- Lowers the total cost of ticketing operations in tandem with AFC
 - VTS, PIS and AFC in one module
 - Long life Plastic replaces recurring cost of paper tickets
 - Joining the common back-end(for Bus, Metro, Rail etc.) lowers the cost for PTO due to economies of scale
- Improves efficiency, increases accountability
 - Assist in reducing Fraud, Cash handling & paper ticket cost
 - Implementation of complex tariff schemes
 - Automation of daily reconciliation of Fare collection
 - Timely MIS/Feedback for better planning & Fleet Utilization
 - Audit Trail

How UTI ITSL will implement the system

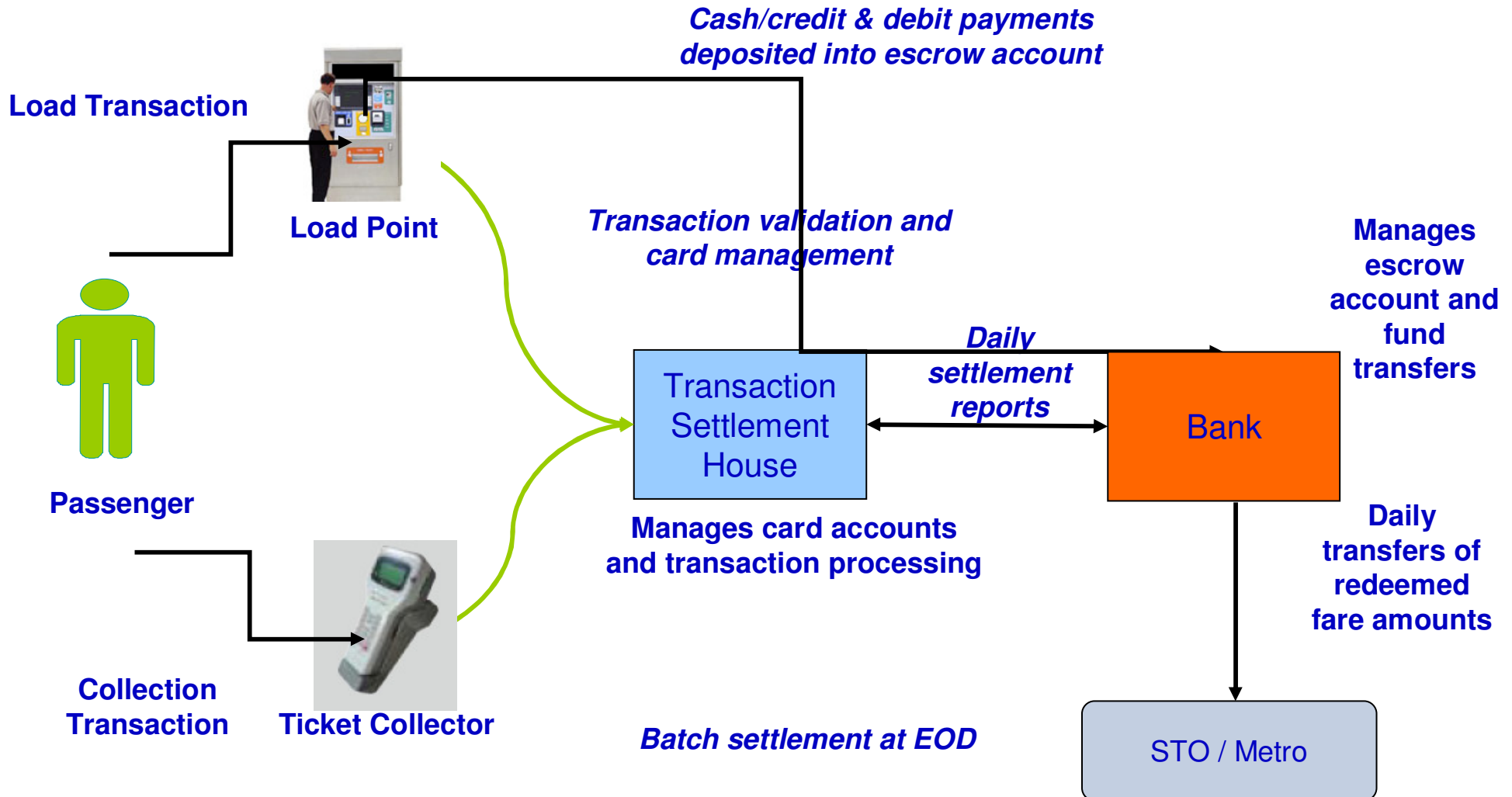
- Design, Architecture & Specifications completion
 - Consultation process with stakeholders in the last phase
- Tie-up with global leaders like Vix ERG for technology and license of key modules like the clearing house
- Offer customised solutions for India clients based on proven core platform
 - ETMs to manage both cash and card
 - Fixed Validator for full scale AFC
 - Business rules of each PTO
 - Security of Data
- Explore in enhancing the functionality of the only existing transit clearing house in the country so far of Delhi Metro supplied by Vix ERG.
- Invest and operate on behalf of Public Transport Organizations
- Host, Operate & Maintain the system

What UTITSL Brings to the Table for PTOs

1. Proven & tested software solution for :
 - Common Transaction Settlement House for multiple PTOs
2. Interface Specifications for third part AFC providers to integrate their hardware to the back-end hosted by UTITSL(AFC Vendor Independent)
3. Enable set up AFC hardware for buses, Metros and other modes of transport through various models of investment
4. Economies of scale
 - Cost of hardware negotiated for multiple PTOs (Thru Global tender)
 - Common Back-end at city level for all modes of transport will reduce cost in long run

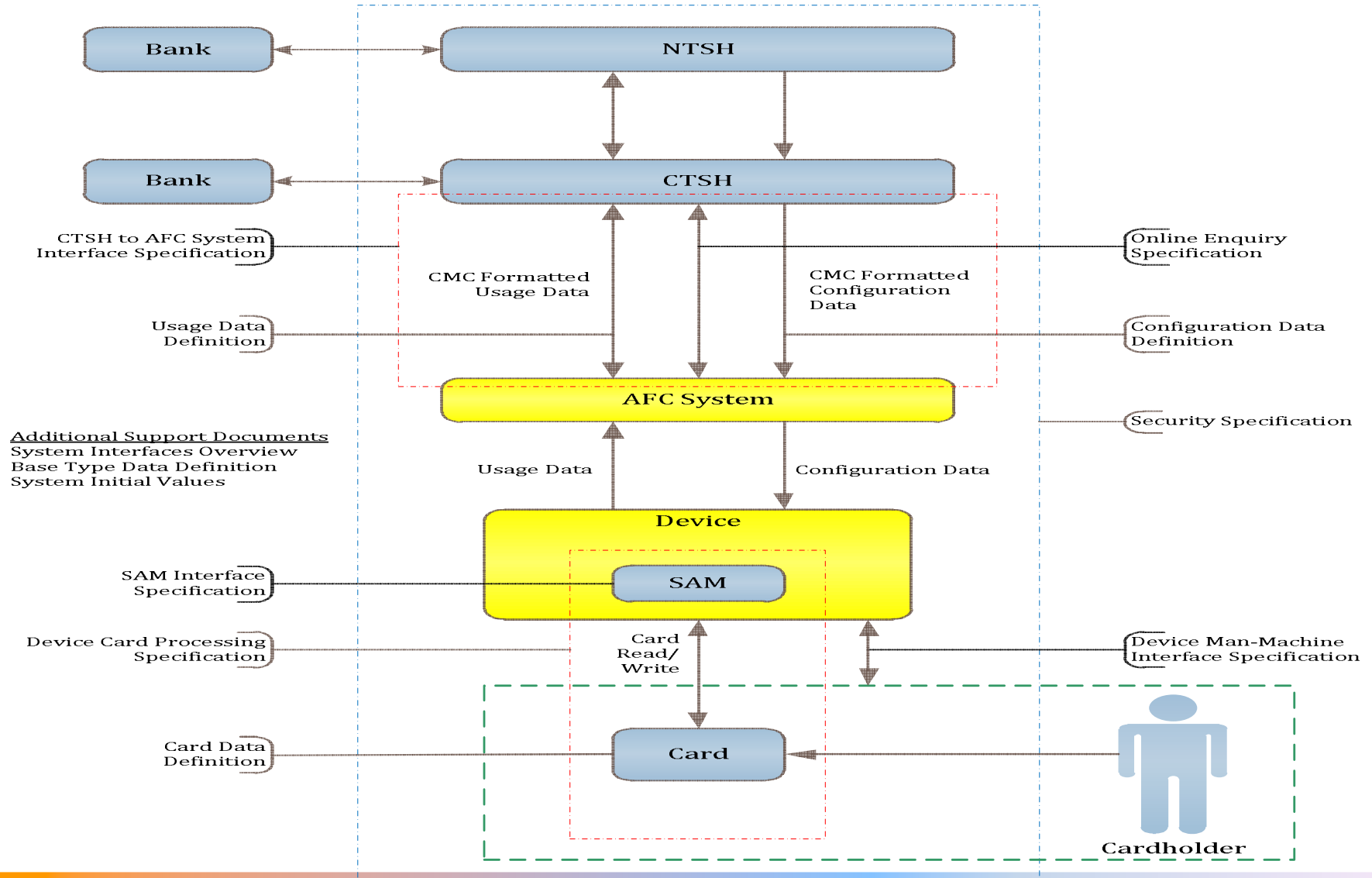
Brief Overview

The Whole System Overview



Interfaces and Standardization Touch Points

CMC specifications that apply to the AFC system and devices



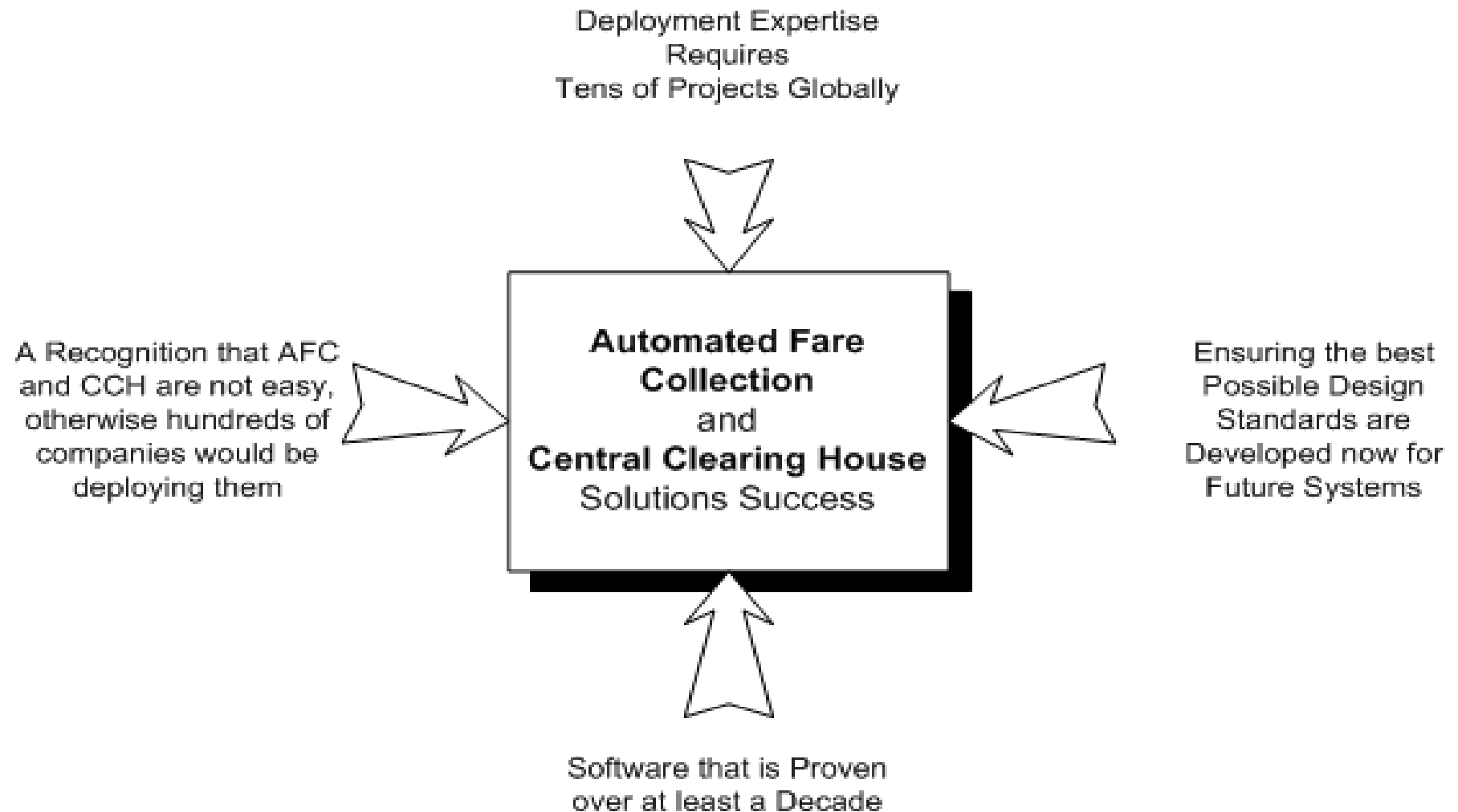
Snapshot of Clearing House Components and their Usage

Component (Module)	Usage
Financial services	Settlement and apportionment
Card services	Card issuance and management
Configuration data services	Business rules issuance
Blacklisting services	Card control (lost or stolen cards)
Reporting services	Report production
Cryptographic services	System security management
Asset management services	Tracking and managing assets
Access control services	System user rights and access
Smartcard services	Post-card-issuance card services

UTIITSL Clearing House - Features/Benefits

- Designed for expansion beyond Transit
 - Micropayments on the same card and infrastructure
- High Performance/Cost effective
 - High Card Volumes (> 30M)
 - High Transaction Loads (>40M/day)
- Based on Commercial off the shelf software packages
 - Oracle DB - long term storage of transactions, summaries
 - Business Objects – best-in-class reporting support
 - Complete set of standard reports are provided
- Plug-in Pipeline architecture
 - Minimises risk and re-test when adding custom plug-ins
 - Core plug-ins are highly configurable
 - Validation rules defined and configured in the field

Critical Success factors for AFC & Clearing House



Who Brings in CMC

UTI ITSL – The Driving Force of CMC

- Incorporated in 1993 as a 'Government of India Company' wholly owned by Ministry of Finance.
- ISO 20000-1:2005; ISO 27001:2005; ISO 9001:2000 Certified Company.
- IT enabled Service Provider, IT Consultancy and Project Management.
- Largest Financial Service Provider in India.
- Largest Card Issuer in India – Have issued more than 40 million PAN cards alone
- Headquartered out of Mumbai with presence in 60 cities and having 1400 touch points

IT Capabilities of UTIITSL

- Experience In Handling:
 - IT Consultants (e-Governance)
 - IT Project Management (Software & Hardware)
 - Software Development
 - Managing Networks of all kinds
 - Smart / Plastic Card personalization and Roll Out
 - Facilities Management (Network, LAN/WAN, Data Base, System / Desktop)
 - Providing Data Center Facility
 - Large and complex database management
 - Migration from legacy systems data formats to RDBMS

Resources	Remarks
Data Center	'State of the art' at Navi Mumbai, 8000 Sq. Ft.
BCC	'State of the art' at Hyderabad, 4000 Sq. Ft.
Presence	30 Cities and 3000 contact points
Technical Manpower	About 120 skilled technical & IT Engineers as Project Leaders, Coordinators and associates
Ability to raise capital for investment	As part of the UTI family, we have group companies
Fully owned by Ministry of Finance	Trust and confidence to deal with for critical & long term projects

Major Clients

- Ministry of Communication and IT
 - Consultants to State / UTs for State Portal & SSDG Implementation
- Ministry of Company Affairs (MCA)
 - MCA-21 Project towards Modernization and Computerization of MCA
- Central Government Health Scheme (CGHS)
 - Adjudication of Claims and settlement
- Employee Provident Fund Organization (EPFO)
 - Issued National Social Security Number Card (NSSN)
 - “Reinventing EPF, India” Project
- ELCOT, Tamil Nadu
 - Software Development, Processing and Issuance of EPIC Card / Driving License in 107 Centre
- Central Board of Direct Taxes (CBDT)
 - Issuance of PAN across India
- CESC Ltd. (erstwhile Calcutta Electric Supply Corporation Ltd.)
 - Software Development & Hardware Installation

Major Clients

- Specified Undertaking Unit Trust of India (SUUTI)
 - Software Development and complete Back Office Operation for UTI AMC across the country
 - Management of Main Data Center & Disaster Recovery Center
- India Post
 - Printing of 'Proof of Address' Cards
- Govt. of Tripura
 - Website Development, Hosting & Maintenance for SS & SE Dept.
- Maharashtra Public Service Commission (MPSC)
 - Website Development, Hosting & Maintenance.
- Govt. of Himachal Pradesh
 - Industrial Development Resource Planning
 - Jan Seva Kendra – Consultancy to State Govt. to identify Citizen Centric Services at District Level

Thank You
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