



Ensuring Food Security through Inclusion, Efficiency and Transparency



Guidance

Guiding the implementation of an efficient, effective and transparent Public Distribution System



Governance

Good Governance through pro-active intervention, enabled by accurate & timely information



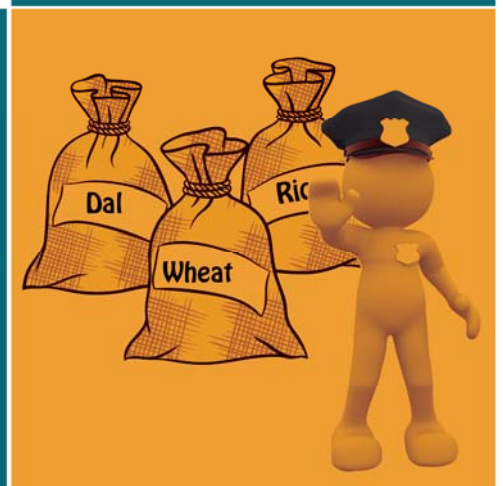
Guarantee

Guaranteeing a Trusted Database by Elimination of Errors of Inclusion & Exclusion



Guard

Guarding against Pilferage, Impersonation and Fraud



Scalable Ubiquitous Responsive Enabling (SURE)
Public Distribution System (PDS)



Public Distribution System (PDS) is a program which has the highest impact on the Government and the people. The primary aim of the system is to ensure food security. However, the sheer scale and complexity of the system has resulted in a number of inadequacies and deficiencies. Typical problems faced by key stakeholders are depicted below.

Problems faced by beneficiaries



- Difficulty for eligible and excluded beneficiaries to obtain new ration cards.
- Difficulty in getting mutations done like addition / deletion of members, change of address, change of fair price shop etc.
- Migrated labour have to forego ration during the period they leave their native villages in search of work.



- Ration shops do not open every day, nor do they keep regular hours. Even on the days that the FPS is open, ration card holders have to stand in long queues. The objective could be to limit access to / discourage people and divert food grains and other commodities to the open market.
- FPS dealer may declare "No Stock" even when sufficient stock is available.



- Ration card holders may not get their rightful entitlements in terms of quantity. What is meant for them is diverted to the open market.
- Overcharging & Underweighting of commodities is often done by fair price shops.



- Ration card holders are captives of specified ration shops thus leading to poor service by the fair price shops.
- Several instances of dealers misbehaving with beneficiary happen.

Problems faced by Fair Price Shop (FPS) dealers



- Low rates of commission makes running an FPS unviable, prompting the dealers to resort to malpractices.
- FPS dealers need to incur considerable cost and time in making payments for obtaining commodities.



- FPS dealer has to maintain registers manually and has to spend considerable time to submit reports to the Food department.
- No incentive to encourage FPS dealers who provide good service since they have captive consumers.

Problems faced by the Government

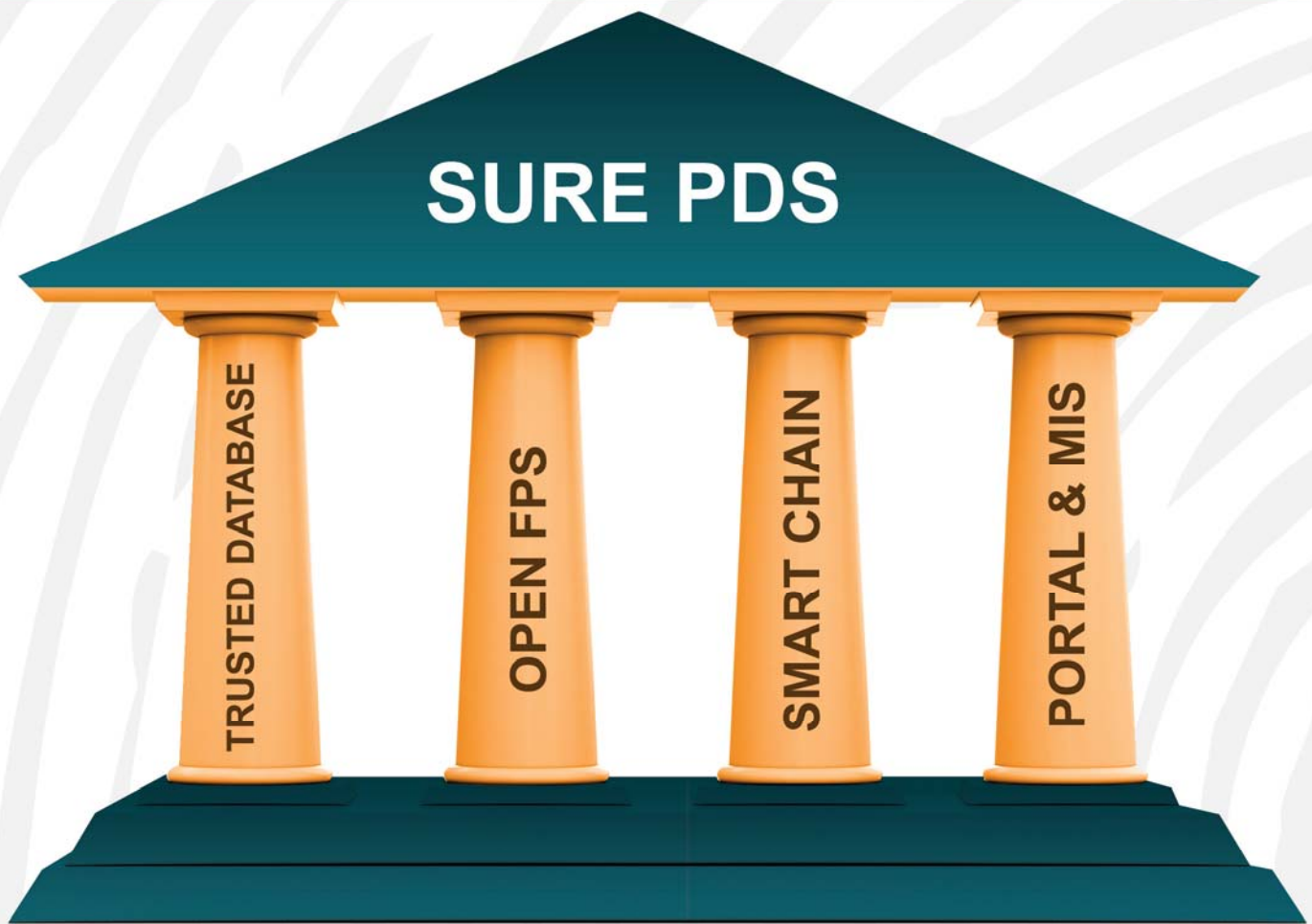
- No mechanism to identify inclusion errors such as duplicate, bogus / ghost and ineligible beneficiaries.
- No mechanism to identify eligible beneficiaries who are excluded.
- Absence of a beneficiary friendly and fool proof system to facilitate mutations.
- Lack of an effective grievance redressal mechanism to address the problems faced by various stakeholders.



- Lack of an automated system to allocate commodities upto FPS level.
- Inefficient monitoring due to lack of real time data.
- Absence of an effective supply chain management system to track stock or movement of commodities at various stages.
- Absence of a decision support system to effectively monitor the PDS ecosystem.



Scalable Ubiquitous Responsive Enabling (SURE) Public Distribution System (PDS)



The Public Distribution System (PDS) is one of India's oldest and well established welfare programs that touches the lives of millions of poor people. Food security is a priority for the Central and State Governments today and effective functioning of PDS is critical to the implementation of the Right to Food in our country.

The SURE PDS solution suite from 4G Identity Solutions has been built by leveraging the deep domain knowledge and extensive experience gained by 4Gid during implementations of PDS solutions in different states in India. SURE PDS addresses the key challenges of beneficiary identification, errors of inclusion / exclusion, diversions and leakages, movement and timely distribution of food grains and enables effective accountability and monitoring.

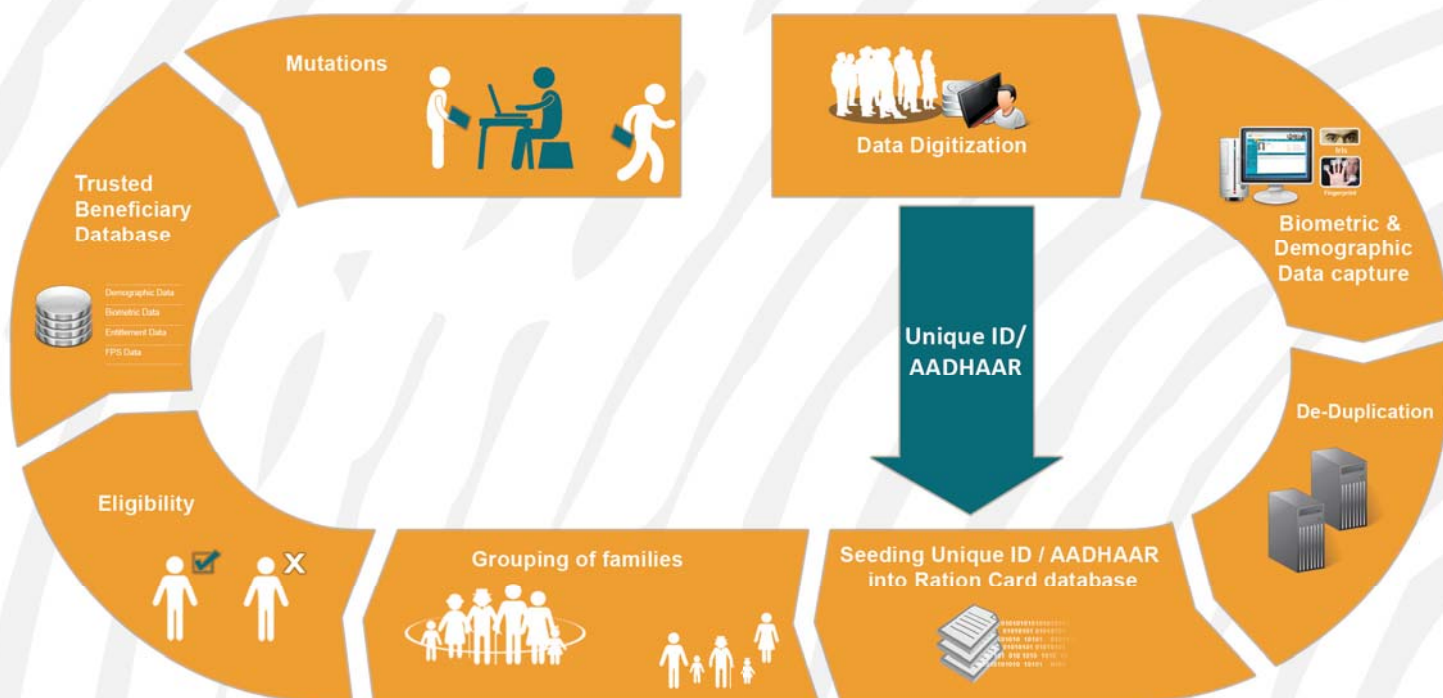
The solution is modular and flexible and can also be implemented in stages by configuring it to the specific requirements of the Food & Civil Supplies department in the state.

SURE PDS solution suite comprises the following modules.

- 👁️ A **TRUSTED DATABASE** of the residents built by leveraging the Unique ID / AADHAAR.
- 👁️ **OPEN FPS** which is a Point of Sale and Smart Card solution at Fair Price Shops that provides the critical link between the beneficiary and the food department.
- 👁️ **SMART CHAIN** solution for managing the supply chain that commences with the procurement of paddy from the farmers and ends with the distribution of commodities at Fair Price Shops.
- 👁️ A comprehensive **Portal and Management Information System (MIS)** to manage the PDS ecosystem.



TRUSTED DATABASE



Public Distribution Systems in all the states have been plagued by the absence of a trusted database of beneficiaries / ration card holders leading to large scale errors of inclusion and exclusion. Trusted database in the context of service delivery means not just uniqueness. While uniqueness of a person can be achieved by using a Unique ID / AADHAAR, building a trusted database involves the following:

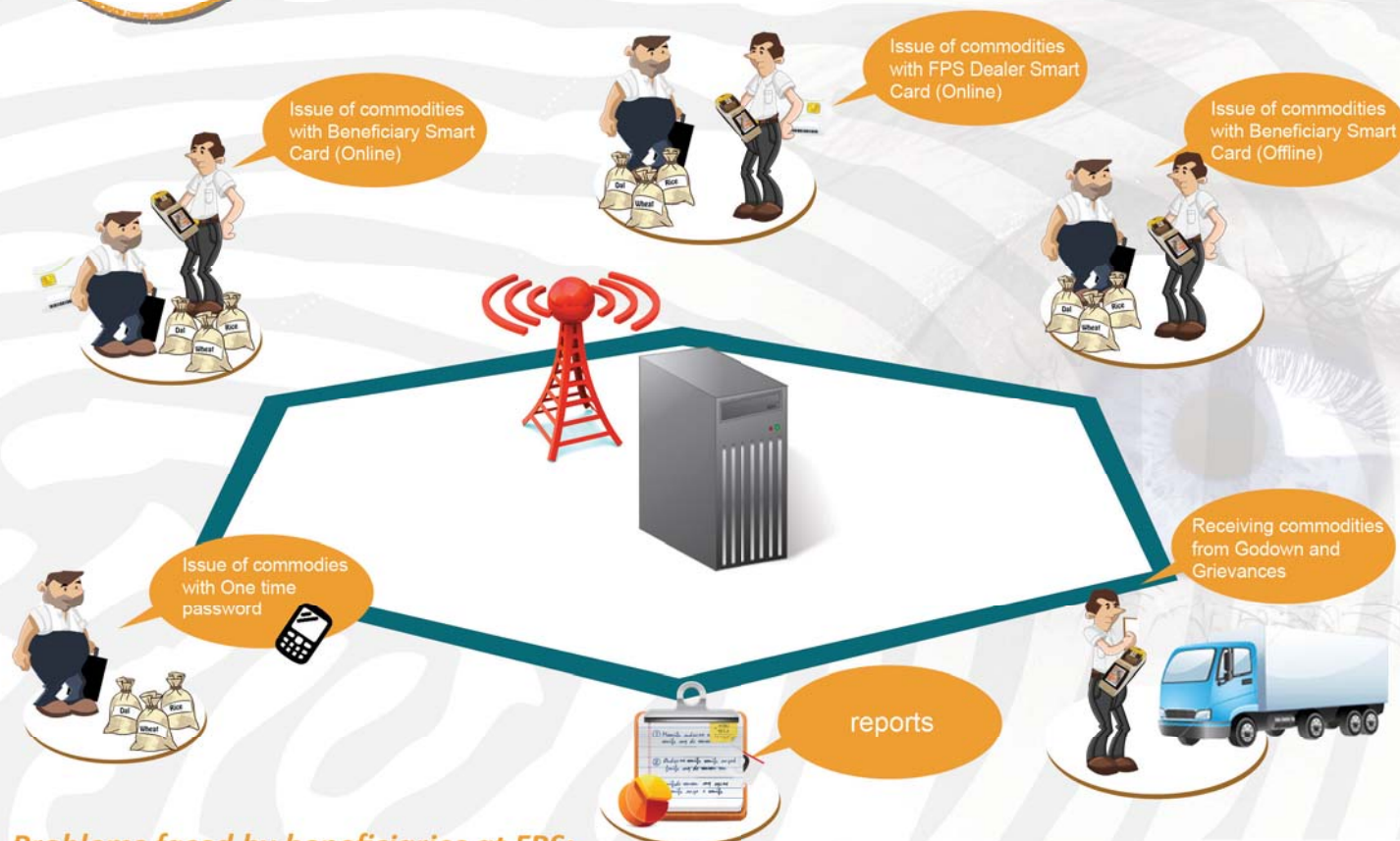
- Incorporating the Uniqueness into the user departments' databases (Seeding Unique ID / AADHAAR into departments' databases).
- Ensure that residents are grouped into families as most of the welfare programs are family based.
- Ensure that the genuineness of the socio-economic category to which the families are mapped.

Approach to building the Trusted database:

- Uniqueness of the residents can be achieved by data digitization, biometric enrollment of the residents, de-duplication and issuing a Unique ID.
- Incorporating the Uniqueness into the departments' databases (seeding) can be done in two ways.
 - Organic approach: By including a unique parameter (e.g ration card number) into the enrollment data of the residents so that the unique ID gets linked automatically linked to the resident's data.
 - Inorganic seeding: By incorporating unique ID of the residents later into the departments'databases. This will involve interacting with the resident.
- While grouping of families can be done for residents in the existing ration card database since ration card number is a number given to a family, for others it will involve interaction with the resident. However, it has to be ensured that one resident is not a member of more than one family.
- Eligibility of a family / resident for a particular welfare benefit depends on the socio-economic category which can be checked in two ways.
 - By linking the identity of a resident with his/her identity in other departmental databases like transport, electricity etc.
 - By physical verification, but this approach can be subjective and is prone to errors.



Organized Proactive Efficient Networked (OPEN) Fair Price Shop (FPS)



Problems faced by beneficiaries at FPS:

- Beneficiaries are tied to one FPS creating a monopoly situation.
- Fair Price Shops do not open as per convenience of the beneficiary.
- FPS dealer displays "no stock" board in spite of abundant stock.
- Misbehavior of FPS dealer with the beneficiary.
- Intentional Fraud in weighing of commodities.
- Beneficiaries need to spend at least 2 to 3 hours in queue.
- Quality of commodities may be deteriorated by the FPS dealer.

4Gid's OPEN FPS addresses the above challenges. OPEN FPS eliminates all the common problems faced by a beneficiary at FPS as it empowers the beneficiary to go to any FPS. Beneficiary has the choice to go to any FPS where service is better.

Solution Highlights:

- De-links beneficiary from the fixed FPS and gives the beneficiary choice of selecting FPS (Portability).
- Smart Ration Cards are given to all beneficiaries.
- Every FPS dealer is given a smart card and a Point of Sale (POS) device.
- Ration can be issued with the beneficiary card or with the FPS dealer card.
- Commodities issued to the beneficiary are recorded in the beneficiary smart card and in the central server.
- Enables linkage to Unique ID / AADHAAR for biometric authentication.
- Transactions can be done in online and offline mode.
- Enables FPS dealer to record receipt of commodities from the Godown.
- Using the POS device, FPS dealer can lodge a grievance if poor quality commodities are received from the Godown.
- Introduces complete transparency into the consumption pattern and allocations to every FPS.
- Highly suited for urban areas due to proximity of FPS shops and very helpful in rural areas for migrated labourers.





The Public Distribution System depends on a supply chain that commences with procurement of paddy from the farmers and ends with the distribution of commodities to the beneficiaries at Fair Price Shops.

The system involves several stakeholders such as a food department, state civil supplies corporation, farmers, millers, Food Corporation of India (FCI), state godowns and the Fair Price Shop dealers. The supply chain is characterized with leakages and diversions and difficulty in tracking inventory and commodities at various levels in the supply chain.

Smart Chain is a solution that has been designed to cater to the needs of the all stakeholders in the supply chain. Salient features and benefits of the solution are given below.

- Handles paddy procurement from the farmers with provision to make instant cheque delivery there by eliminating middlemen.
- Reconciliation of paddy procurement with storage, quantities milled through millers and receipt of custom milled rice by FCI and state godowns.
- Effectively manages movement of commodities across the entire supply chain starting from FCI to the Fair Price Shops eliminating scope for diversions and leakages.
- Manages registration of mills, godowns and fair price shops.
- Ensures better inventory control resulting in optimal capacity utilization.
- Web based MIS for creating transparency in the procurement and movement so that any citizen can access the information.

SURE PDS Portal and Management Information System (MIS)

A comprehensive Portal and MIS for managing the entire PDS Ecosystem. Some of the important features include:

- Enables management of the Ration Card database.
- Rules engine based generation of key registers and allocations upto the Fair Price Shop (FPS) level based on categories of ration cards, entitlements and utilization.
- Helps in managing mutations such as issue of new cards, addition / deletion of members, change of address etc.
- Tracks Inventory and movement of stock across the supply chain.
- Track release orders, issuance and utilization at Fair Price Shops.
- Enables delivery of other services like issue of income, residence, caste certificates etc due to presence of the trusted database and biometric authentication.



Our Experience

UNWFP - Odisha Targeted Public Distribution System Project

United Nations World Food Programme, India country office (UNWFP) on behalf of the Government of Odisha has taken up the project to strengthen the infrastructure and systems of the Public Distribution System by leveraging Multimodal Biometric, Smart Card and ICT technologies for better management and monitoring of the distribution of food grains in Rayagada district of Odisha.

- Data Digitization and Integration of databases.
- Development and Deployment of Demographic and Multi biometric enrolment (Iris, Fingerprint and Face) Application.
- Multimodal biometric De-duplication with manual adjudication.
- Printing and personalization of different credentials: Laminated cards, food coupons with security features and Smart Cards.
- Authentication of beneficiaries before distribution of cards.
- Handheld authentication solution at FPS for distribution of commodities.
- Public portal and centralized MIS system for comprehensive monitoring.



Chhattisgarh Centralized Online Real-time Electronic Public Distribution System (CORE PDS)

A Smart Card and POS based PDS system which enables the beneficiary to draw subsidized items from any FPS without linking the beneficiary to any particular FPS.

- Smart Card issued to BPL families and POS devices deployed at FPS.
- Delinks beneficiary from the assigned Fair Price Shop.
- Competition between the FPSs to improve their service.
- To ensure the PDS commodities reach the right beneficiaries.
- To create transparency in the issue of PDS commodities to the beneficiaries.



Andhra Pradesh State wide Online Real-time Ration Card Management System

- Real Time Iris based 1:N Identification System with server side response time of less than a second for 90 Million resident database.
- Supports real time identification across hundreds of locations.
- Generation of Dynamic Key Registers.
- De-duplication (N:N) of 56 Million people Iris data and 82 Million demographic data.
- 6.26 Quadrillion iris matches in record time of 60 days.
- 15,45,951 duplicate and ghost BPL Cards identified and deleted.
- Integration of Ration Card data with Pensions & Housing Departments.
- 16,51,466 bogus pensioners identified.
- 12,88,670 bogus housing beneficiaries identified.



About 4Gid

4G Identity Solutions (4Gid) is a Pioneer (since 2001) & Global leader in providing large scale identity management solutions leveraging smart cards and biometric technologies. 4Gid specializes as an end-to-end identity management solutions provider & system integrator in Civil ID, Homeland Security & Law Enforcement for government, corporate, banking and defense sectors. 4Gid has re-defined ID management business space by providing thought leadership and proof of concepts that led to the world's largest ID programmes. 4Gid has executed many of the world's first large scale identity management solutions for federal governments, multilateral agencies and top notch corporates, and is currently delivering the world's biggest Civil ID project – India's Unique ID / Aadhaar.

4Gid strives to contribute in bringing today, best of the breed technologies of tomorrow and has set new benchmarks in the identity management industry. In terms of innovation and solution readiness, 4Gid has consistently been ahead of the pack. 4Gid believes and practices a proactive approach to solutioning. 4Gid experts are consistently helping in understanding client requirements and working on novel approaches to meet the same. 4Gid has pioneering solutions catering to the needs of Public Service Delivery Infrastructure, Public Distribution System, Pensions, Social Welfare schemes, ePassport, eVisa, Immigration & Border Control, Voter ID and National ID.

4Gid strong delivery capabilities in handling large scale identity management projects has already resulted in phenomenal savings to the government exchequer, running into hundreds of millions of dollars - eliminating the errors of inclusion and exclusion in government welfare schemes thereby bringing value to millions of citizens and preventing leakages in the delivery of government welfare services like food subsidy programmes.

Our Trail Blazers:

- World's Largest Biometric Identification - India's UID/Aadhaar 1.2 Billion Residents
- World's First Multi-Modal Biometric Civil ID 10 fingers (4-4-2), 2 Iris & Face
- World's Largest Supply of 4-4-2 Slap Fingerprint Live Scanners 15,000 devices
- World's Largest Coastal ID 7517 kms, 12 Million Citizens
- World's Fastest De-duplication 6.2 Quadrillion matches in 2 months record time
- World's Largest Corporate ID 470,000 Employees
- World's Largest 1:N Realtime Identification 90 Million Citizens
- India's First Automated Realtime Criminal ID Connecting 148 Police Stations

Awards

- Ranked 4th in Inc. 500 fastest-growing companies 2012
- Ranked 23rd in Deloitte Technology Fast 50 fastest growing companies 2012
- Channel World Premier 100 Award 2012
- ETNOW Leaders of Tomorrow Award 2011
- Aadhaar Excellence Award 2011
- ID World Outstanding Achievement 2010 Award



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