RP - Sanjiv Goenka Group

Growing Legacies

India's youngest business group

Power & Natural Resources

CESC LIMITED

NPCL
NOIDA POWER COMPANY LIMITED

ICML
INTEGRATED COAL MINING LIMITED

Harrisons Malayalam Limited

Carbon Black

Phillips Carbon Black Limited

Retail

spencer's

music world

au bon pain.

Media & Entertainment

saregama
Soul of India

open media network

Education

IMI
INTERNATIONAL MANAGEMENT INSTITUTE

Infrastructure

CESC PROPERTIES

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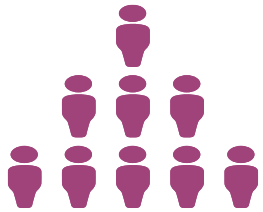
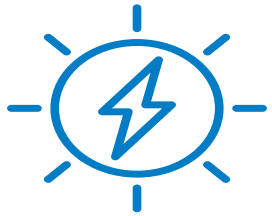
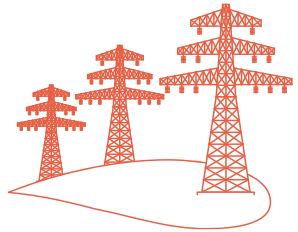
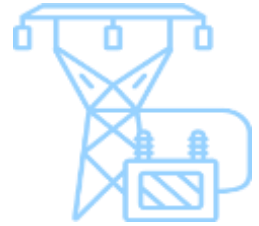
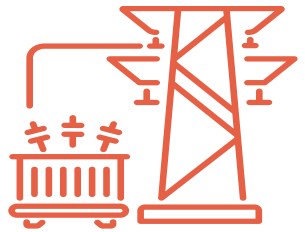
NPCL
NOIDA POWER COMPANY LIMITED

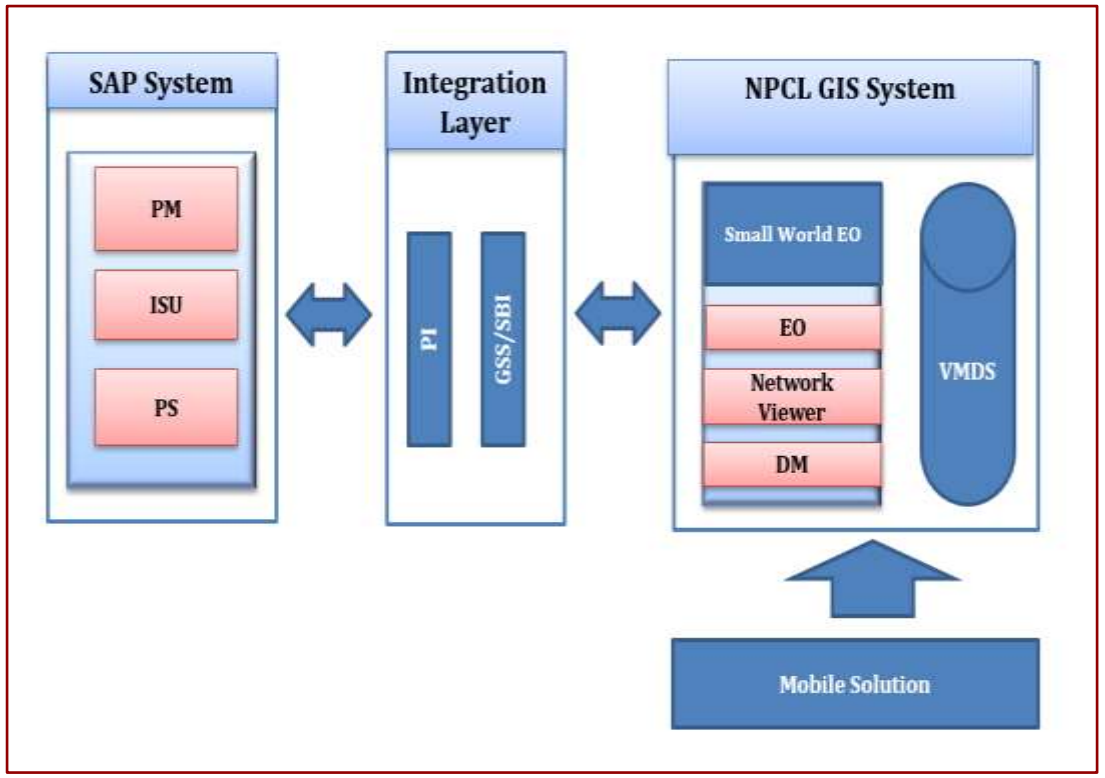
Smart Utility Planning through Mobile GIS: A Field-to-Backend Integrated Solution

NPCL OVERVIEW

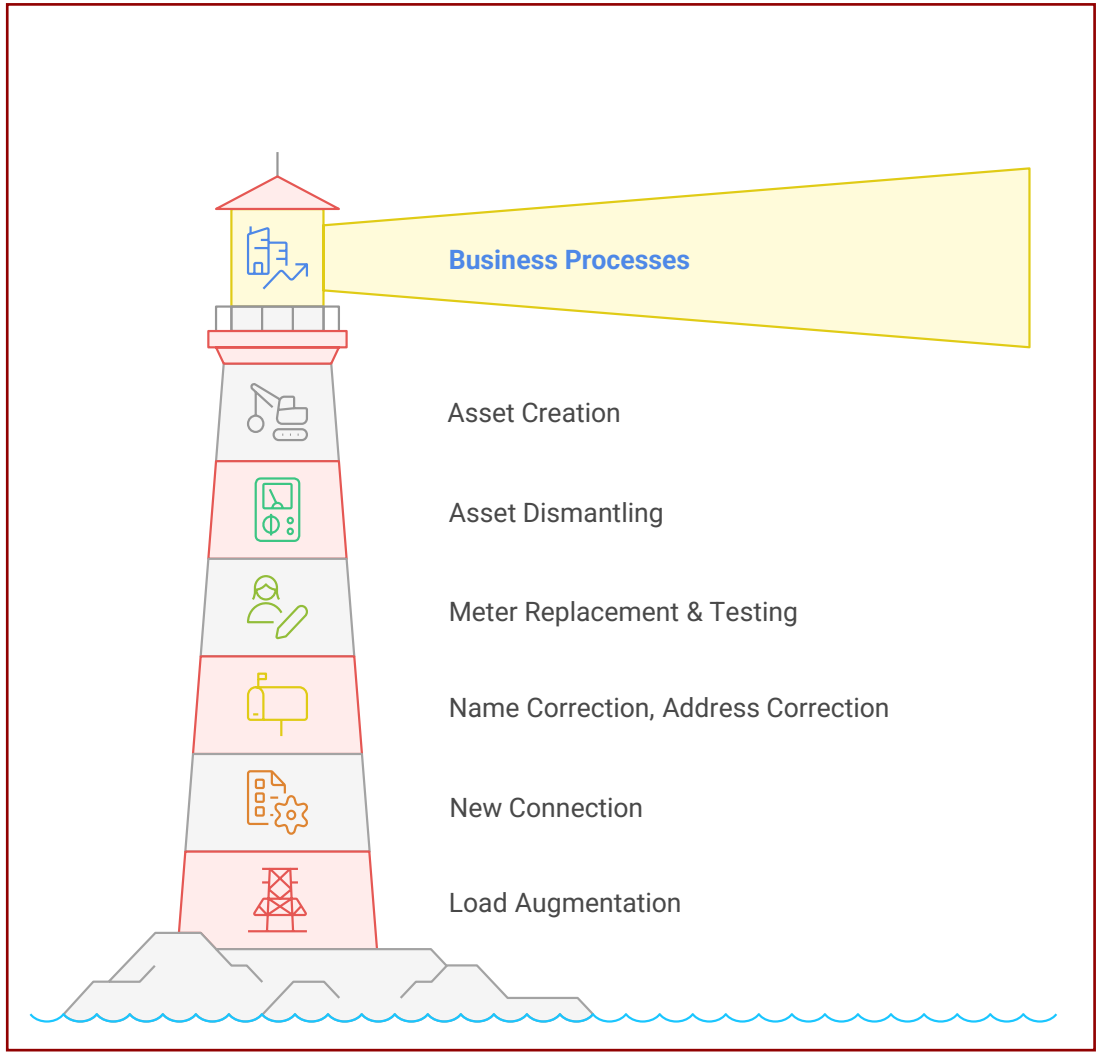
Serving as a "Power Distribution licensee" in Greater Noida (335 Sqkm.) area since 1993

Consumer	Energy Sales	Peak Demand	Network Length	Number of 33/11 kV Substations	Number of Distribution Transformers
2 L	3887 MU+	751 MVA+	7900 CKM+	78 No.	7186 No.
					
Residential: 91% **Commercial : 4%** **Industrial : 3%** **Others : 2%**	**Residential: 31%** **Commercial : 3%** **Industrial : 62%** **Others : 4%**	**652 MW** **FY24**	HT : 4000 CKM LT : 3900 CKM	958 MVA Capacity	757MVA Capacity

GIS LANDSCAPE



SAP Integration with GIS-Business Process



NPCL has implemented latest version of GE Smallworld Electric Office 5.2 with Design manager 5.2.6, integrated with SAP

CHALLENGES WITH TRADITIONAL METHODS

Field teams used paper maps, making verification slow and error-prone.

No mobile tool was available for on-site GIS data viewing or matching.

Field changes were reported late, leaving GIS data outdated.

Difficult to track the accuracy and completeness of field update.

Manual checks increased turnaround time for network corrections.

GIS updates couldn’t be checked in real time, causing data mismatches.

Different teams followed different mapping practices, causing inconsistency.

Coordination between field & GIS team, relied heavily on manual communication.

Lack of real-time status updates led to duplicated efforts by team.

IN-HOUSE PLATFORM VS EXTERNAL PLATFORM

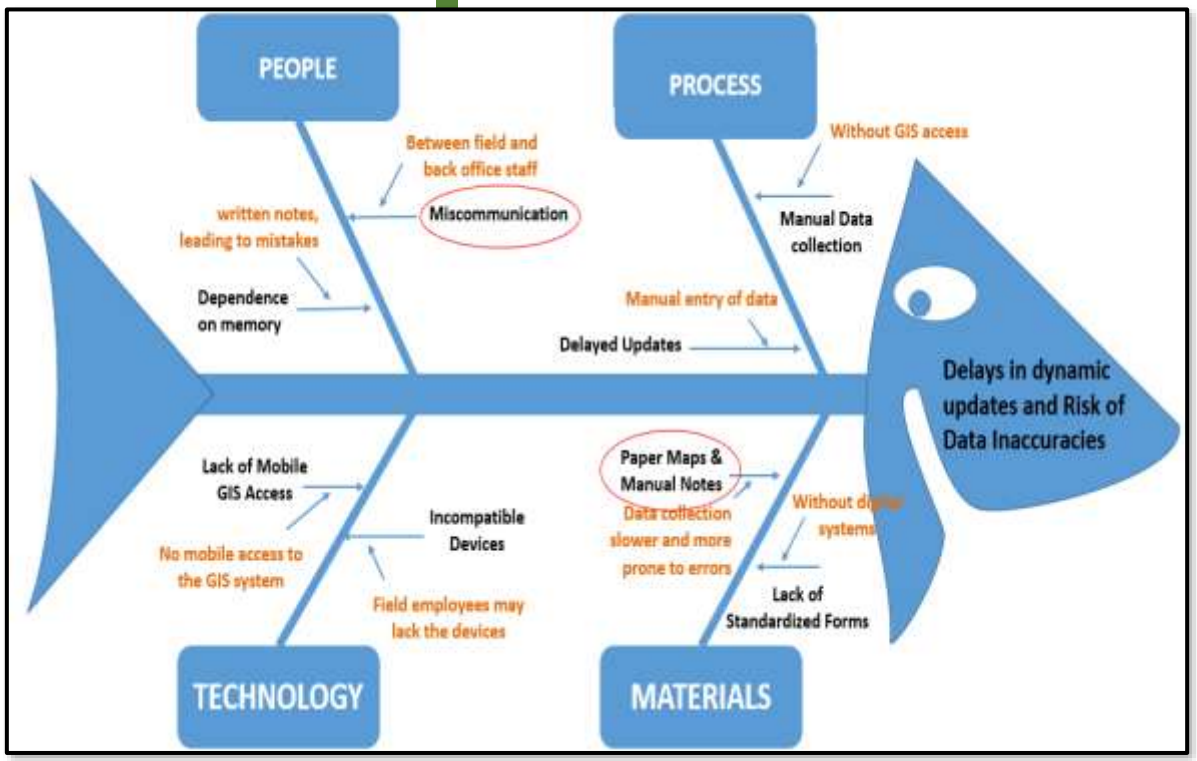
CRITERIA	IN-HOUSE PLATFORM (CHOSEN)	EXTERNAL/OFF-THE-SHELF PLATFORM
CUSTOMIZATION	Fully tailored to NPCL operational processes	Limited customization
COST EFFICIENCY	No additional license cost (Node.js, PostgreSQL, PostGIS)	High recurring license & integration costs
TECHNOLOGY STACK CONTROL	Modern tech stack: Node.js, PostgreSQL + PostGIS, OGC map services, Google Maps APIs	Dependent on vendor tech ecosystem
INTEGRATION FLEXIBILITY	Seamless integration with GE Smallworld Electric Office & Google Maps	Integration restrictions & additional charges
DATA SECURITY & OWNERSHIP	Full control over data, storage & access	Vendor-controlled data handling
ENHANCEMENT SPEED	Faster updates, agile modifications	Slow due to vendor release cycles
OPERATIONAL FIT	Designed exactly as per field & planning team requirements	Generic solutions, not purpose-fit

METHODOLOGY

Identification of Problem → **Selection of Problem** → **Identification of Causes & Analysis** → **SOLUTION- MOBILE GIS APP**

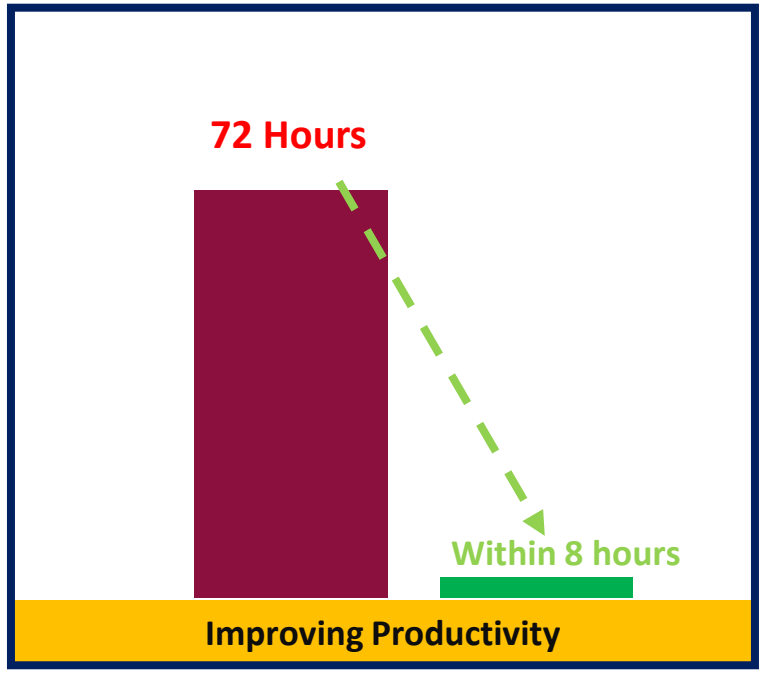
- Dynamic Change observation
- Risk of data in-accuracy
- Communication gaps
- No access to GIS data for field person
- Time delay in changes in the system

- SEVERITY
- OCCURENCE
- DETECTION

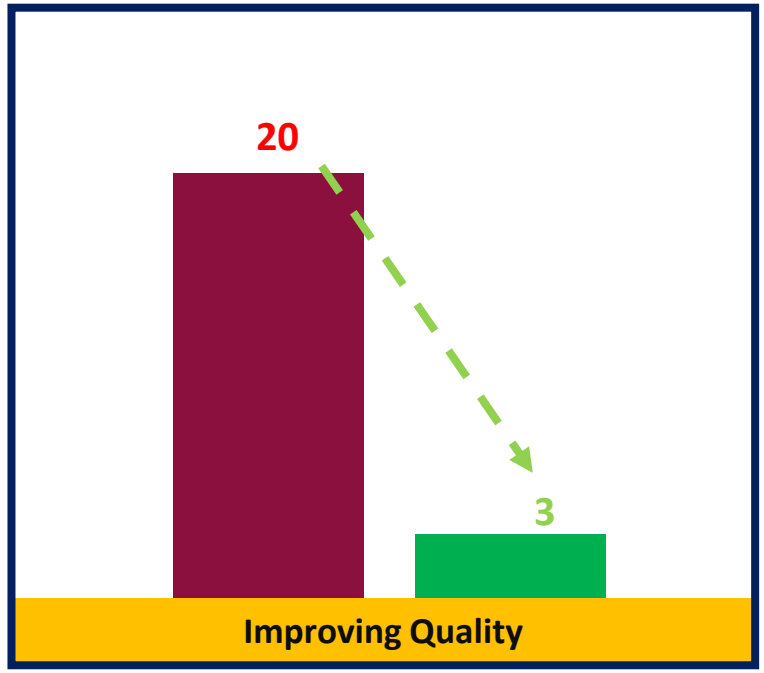


IMPACT ANALYSIS RESULTS

Time delay for changes in network (Involving data from month of January to April 2025



% Risk of Data inaccuracy



To enhance system efficiency by reducing network change delays and improving data accuracy through the use of the Mobile GIS application

MOBILE-GIS INTERFACE & ITS USE CASES

VIEW GOOGLE IMAGERY TO VISUALIZE THE SITE SCENARIO AT ANY LOCATION

MOBILE-GIS INTERFACE & ITS USE CASES

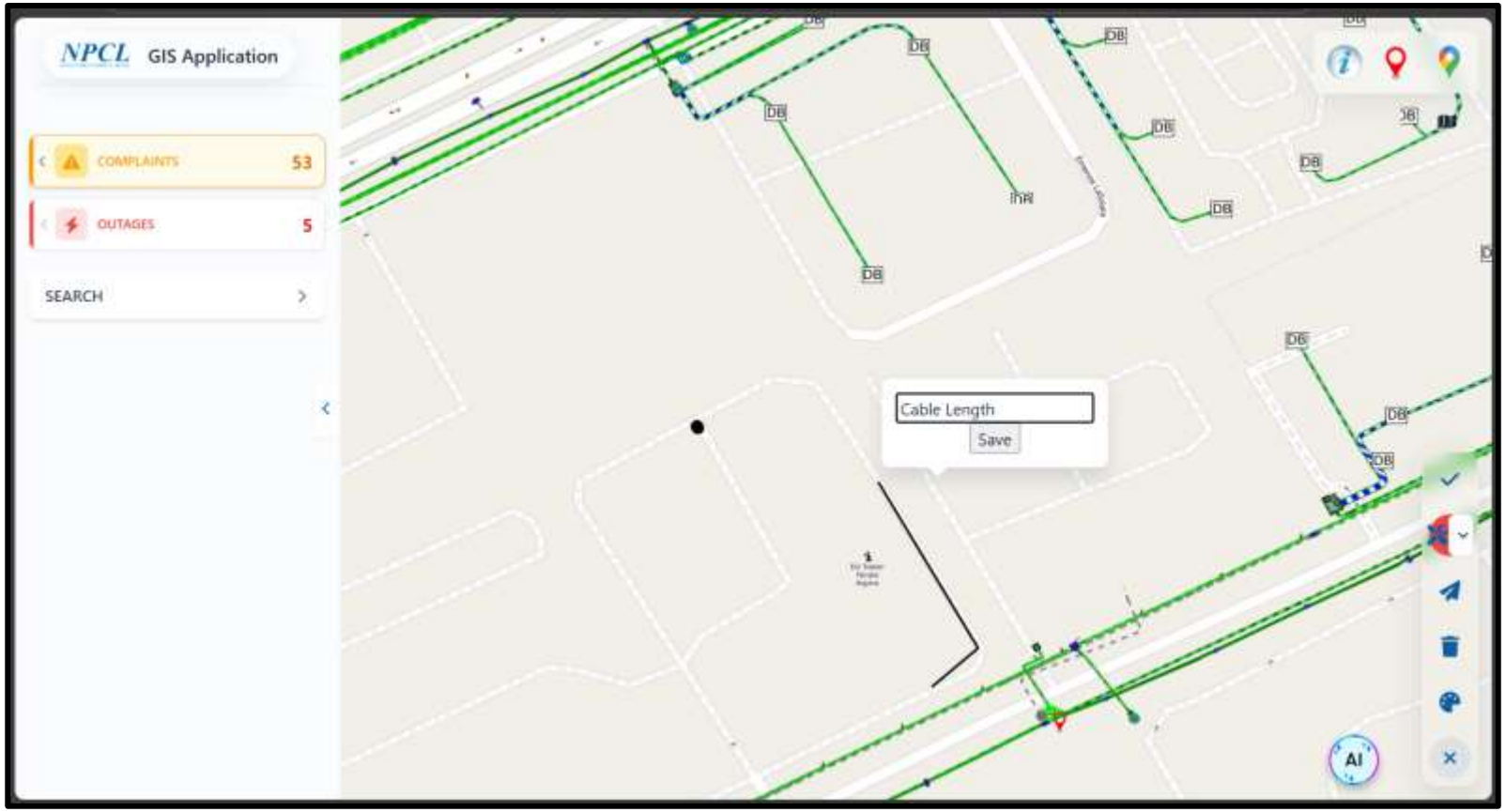
DEPICTING A PARTICULAR CONSUMER / METER / POLE / TRANSFORMER / FEEDER PILLAR / ISOLATING SWITCH / COORDINATES

MOBILE-GIS INTERFACE & ITS USE CASES

CREATING A POINT OBJECT SUCH AS TRANSFORMER, RMU, FEEDER PILLAR, POLE, SERVICE POINT, METER, C & R PANEL, ETC.

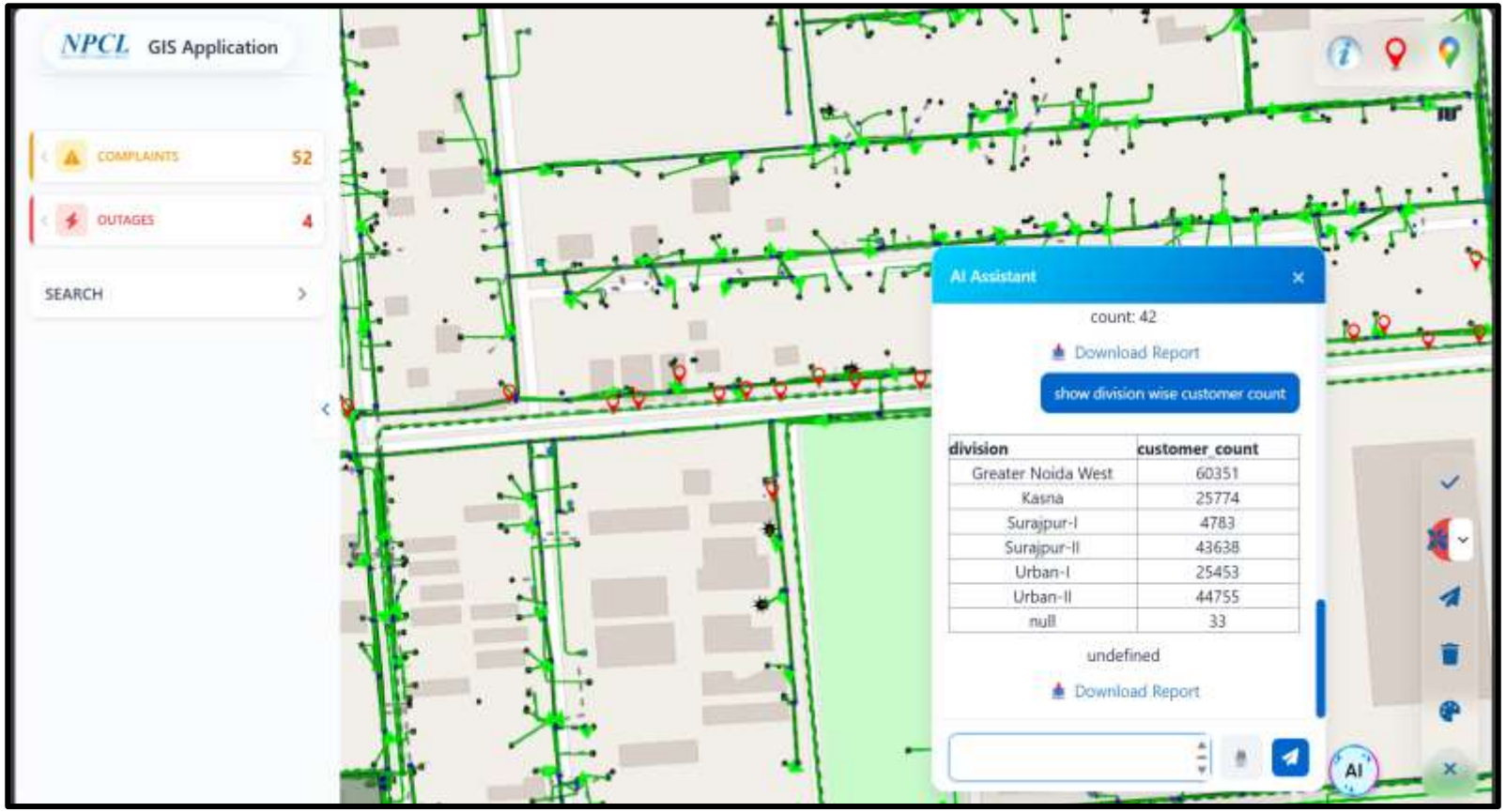
MOBILE-GIS INTERFACE & ITS USE CASES

INSERTING ANY TEXT TO REPICT ANY ELEMENT OR WRITE ANY COMMENT AS PER THE REQUIREMENT



MOBILE-GIS INTERFACE & ITS USE CASES

ASKING QUERIES IN AI CHATBOT – DIVISION-WISE CONSUMER COUNT



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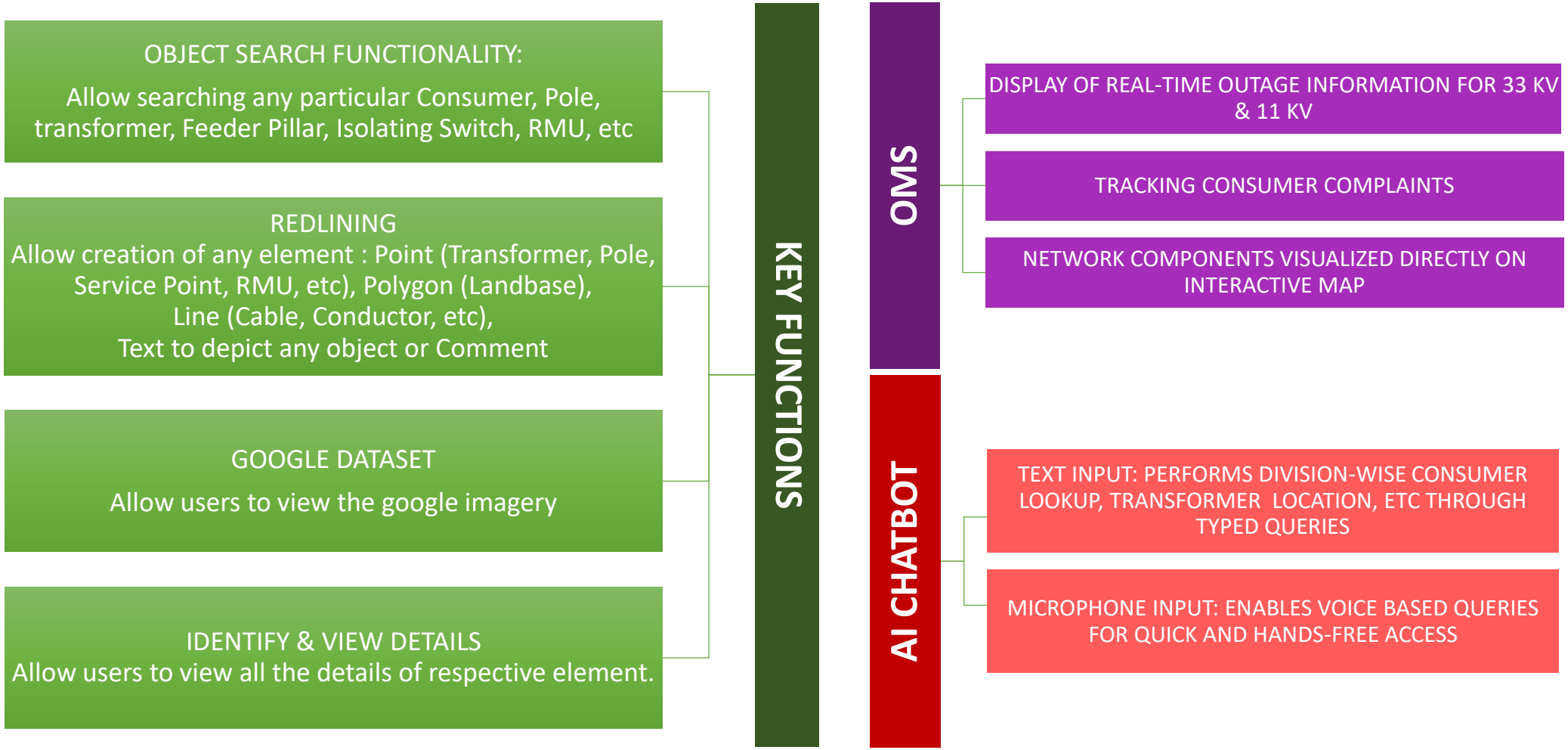
GLIMPSE OF MOBILE-GIS APP

KEY TAKEAWAYS/UPCOMING GLANCES



BENEFITS

Accurate Updates

Up-to-date GIS information regarding the GIS system

Better Accuracy

Dynamic updates reduce errors & Improve data quality

Manpower Utilization

Less manual work, fewer delays & optimized resources

Improved Collaboration

Seamless Communication between Field and office teams

Faster Response Time

Customer requests or issues addressed more promptly

Customer Satisfaction

Faster data Response to consumer requirements

Faster Decisions

On-the-spot data access for quicker decisions

MOBILE-GIS APP

THANK YOU