



BSNL is Analyzing Daily load of

# 110 million CDRs

with Echelon Edge Unified Data Lake Solution



## Data Quiipo

(Earlier known as Teralytix Edge)

Reduced data errors from 5% to just 0.5% while ensuring more accurate and reliable data.

Cut data management costs by 8-9% through optimized storage, faster queries, and quicker results.

Integrating data from different sources into a unified platform using Data Quiipo.

## About the Customer

BSNL is a tech-focused integrated telecom service provider offering a comprehensive range of services, including:

- Wired Services
- GSM Mobile Services (2G, 3G, 4G) and Value-Added Services (VAS)
- Internet and Broadband, including Fiber to the Home (FTTH)
- Wi-Fi Services
- Data Center Solutions
- Enterprise Data Services, like Leased Circuits and MPLS VPN
- National Long-Distance Services
- International Long-Distance Services

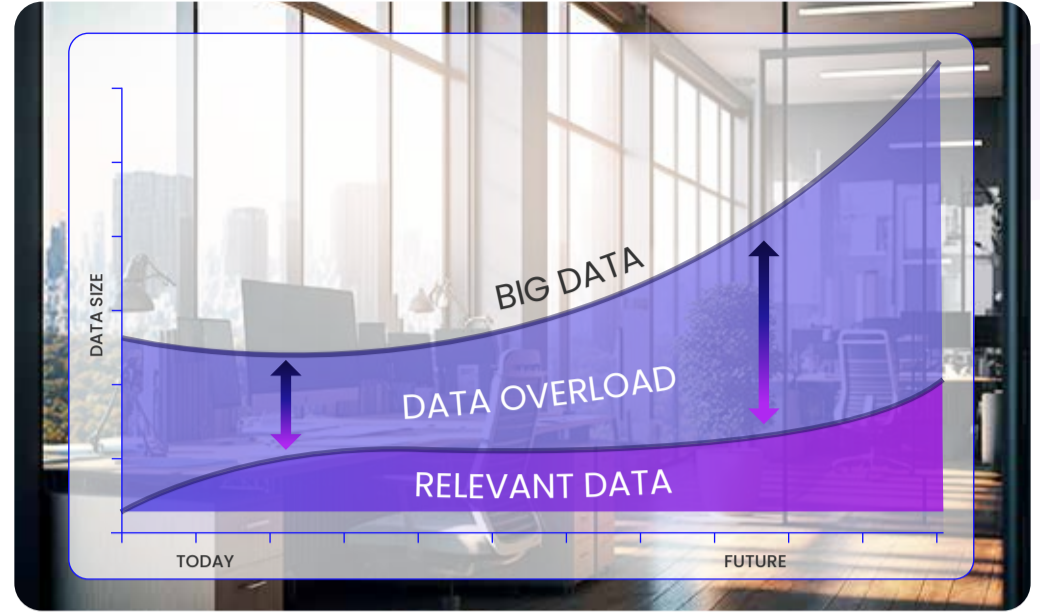


## Challenges

# Processing daily load of around 110 million CDRs

BSNL, being a telecom company, generates a huge amount of CDRs (Call Detail Records) in a single day. These CDRs represent a highly valuable data source within the telecom sector that offers various opportunities while maximizing its revenue and contributing to various community welfare initiatives. However, BSNL lacked an effective data analytics tool to analyze and work with this data.

- BSNL had no on-the-fly customization options available for the tool.
- There was a lack of a front-end graphical user interface (GUI) that could be extended to various geographical locations within BSNL.
- The daily loading of approximately 110 million CDRs posed a challenge, requiring a system that could handle this volume without lag.
- In addition to efficient data loading, BSNL needed the application to offer complete analytics and reporting functionalities to meet their business requirements.
- The system's interface needed to be simplified and highly intuitive, with business-specific features, including:
  - a. The ability to download reports in various formats such as XLS and CSV.
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  - c. Multiple criteria for CDR export, including options like MSISDN, Circles, & Cell ID, with different formats (e.g., 13 fields, 22 fields, and COVID-19).
  - d. Handling search criteria through Excel (Bulk) and GUI inputs.
  - e. The capacity to manage both single and multiple CDR requests without delays.



## Objective

# Extract, Transform, Load (ETL) Processes to Standardize & Integrate Data

BSNL maintains a huge database of Data Warehouse containing CDRs from all its network nodes. As a government agency, BSNL needs to access CDRs in various formats and generate custom reports for law enforcement agencies.

Previously, BSNL relied on a backend system that required Oracle query knowledge to retrieve reports. This limited the system's usability to individuals with Oracle expertise, resulting in an overburdened team at BSNL.

With the urgency of data required by law enforcement agencies, performance was a significant concern for BSNL Team when implementing Data Digger Tool.

EEPL recommended leveraging its innovative "Data Quipo" - Big Data Analytics Solution to solve problems and identify opportunities for processing, extracting, and loading data in BSNL.

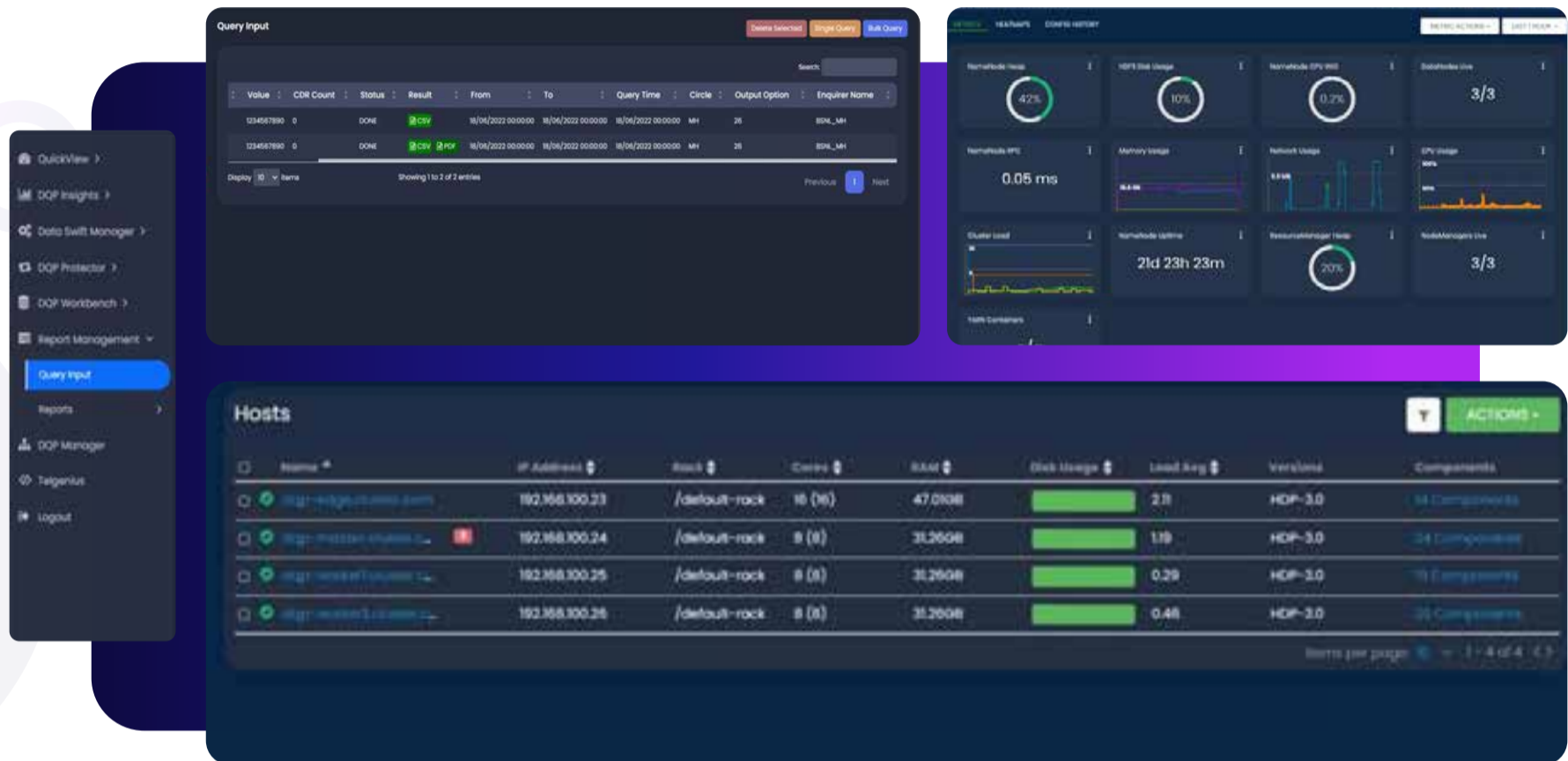


## Solution

# Deployed Scalable Software Solution to Optimize Queries and Indexes for Performance

The BSNL operator was in search of a vendor to update their existing systems and introduce an on-site software tool for better data management, advanced analytics, and streamlined processes. They decided to collaborate with Echelon Edge to meet these goals.

The solution involved implementing effective software solutions that could integrate data from different sources into a unified platform. This system empowered the operator to transform millions of data into actionable insights that come from multiple sources in diverse forms.



- Standardized and integrated data through Extract, Transform, Load (ETL) processes.
- Introduced data validation checks for accuracy & analyzed ongoing query performance.
- Enhanced performance by deploying scalable software solutions and optimizing queries and indexes.
- Strengthened security with robust user authentication and authorization mechanisms.
- Improved efficiency through well-designed data models, including appropriate indexes, materialized views, and partitioning of large tables.

## Outcomes

# Queries That Used to Take Hours, Now Complete in Minutes or Seconds

- Data errors were reduced from 5% to just 0.5%, improving accuracy and reliability.
- Data Quipo now combines data from different sources into one platform.
- Data management costs dropped by 8-9% due to better storage and faster queries.

