BSES
BSES Yamuna Power Limited

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Power reliability with GIS

Client:	Website:	Industry:	Location:
BSES Yamuna Power Limited	bsesdelhi.com	Power Distribution	East Delhi and Central Delhi

Organization Profile
BSES Yamuna Power Ltd. (BYPL) distributes power in central and eastern Delhi. The company aims to provide customers with superior, high quality services that are reliable and safe.

Solution
ArcGIS Enterprise, ArcGIS Desktop, ArcFM

Highlights
Esri India helped BSES by:
- Improved consumer communication
- Real-time update to field staff
- Efficient operation management
- Reduced overall cost

Project Summary

BSES Yamuna Power Ltd. (BYPL) covers several areas of East and Central Delhi with its power distribution system. The organization has over 16.5 lakh customers and 14 division offices. In an effort to improve its services, BYPL upgraded and augmented its infrastructure, investing over INR 6,600 crore in this exercise. Despite this success, BYPL was plagued by the problem of outages. It needed to efficiently identify and resolve them. The company, therefore required a solution that would change the way it worked, brought in greater transparency, and integrated its disparate enterprise systems into one. BSES Yamuna Power Ltd., thereby developed an Intelligent Outage Management System (i-OMS) that used the power of ArcGIS to improve the quality and reliability of the power it was supplying to consumers and make significant savings.

Challenges

To cater to the ever increasing power demand, BYPL was looking at optimizing their power distribution network to eliminate bottlenecks and improve reliability. Identifying and resolving outages promptly was also becoming imperative for BYPL.
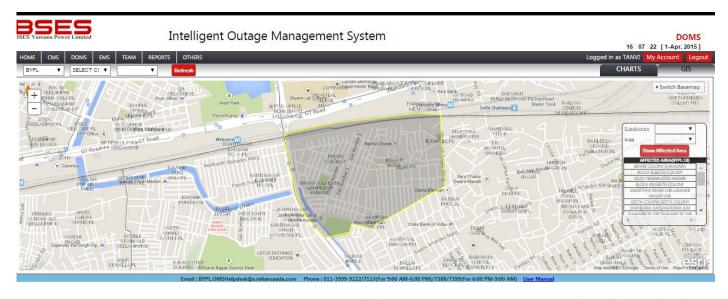The company's traditional Outage Management System (OMS) had certain disadvantages such as the fact that it was built on an old platform, had slow server response and a heavy application, was non-predictive in nature, non user-friendly, and non-compatible with smart apps. The OMS had to be downloaded frequently and offered limited reports. The older version of OMS was relying on inputs from SCADA/DMS/EMS or IVR systems to estimate the location of the faults causing the outages, generate switch orders and manage work crews. This approach was reactive since the analysis and the location of the faults were occurring well after the outage had taken place. The precedents that were critical to the analysis of potential and future outages or their likely impact were not being recorded or were lost. One of the major problems was getting data and its quality. The users were pulling data from the highly scattered databases. Many users had created their own databases which were not synced.
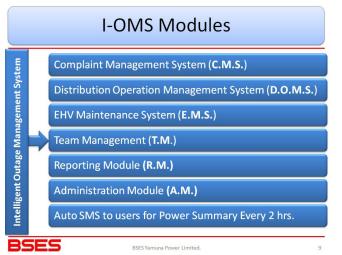
Solution

A GIS-based outage management system was the solution to BYPL's challenges. Not only, it could help them manage outages better, but also have a single repository of all data. They now have a robust system, each and everything is getting updated into GIS, so whatever changes are happening is getting into the GIS and now users are connecting into one GIS database. With this, they are getting the correct information. BYPL has made GIS the main database, making

> *"By implementing the Esri GIS solution, BYPL has transformed its working style. The organization has been able to improve the overall productivity of its network engineers by almost 20 percent."*
>
> ***Anish Kalucha***
> *CIO, BYPL*

all their enterprise systems connected to only one database.

The Intelligent Outage Management System (i-OMS) has been effectively implemented by BYPL. Various technologies were used for the development of a GIS-based scheme creation module including the ArcGIS Enterprise, ArcFM, ArcGIS Desktop and ArcGIS API for JavaScript. As the application used the ArcGIS architecture, the accuracy of its corporate data assets was enhanced exponentially.

The Intelligent Outage Management System (i-OMS) is connected to other enterprise systems like SCADA, SAP and ERP systems for real time information sharing.

Apart from this, the same i-OMS is working at their call centers as well and when consumers call, its centers share with them the real time information about any planned/emergency outage or breakdown and even inform them about the time when that will be restored.

Benefits

Since i-OMS is based on GIS, whenever there is an outage in the field; that outage first goes to SCADA and since i-OMS is integrated with SCADA, the outage automatically gets updated in i-OMS. Hence, whenever there is an outage, an SMS will be automatically sent to all its consumers, so that they get first hand information about the outage in their area and the time required to restore the electricity power. While, consumers are getting the information, their field staff is also getting alerts on a real time basis. BYPL has given them Android-based mobile applications so that they can respond to an outage in real-time and close the information on the field itself.

The i-OMS has significantly reduced the cost of a breakage/ shutdown for the utility and its rate payers. BYPL is now being able to provide quality power 24x7.