

INTEGRATED MANAGEMENT INFORMATION SYSTEM FOR SMART WATER MANAGEMENT

After implementing the Integrated Management Information System, revenue collection has increased by more than 250%, and water loss reduced by almost 50%.

SPML Infra has indigenously developed an Integrated Management Information System (IMIS) for smart management of water utilities. A powerful enterprise management system designed to meet day to day operations of water distribution utilities, seamlessly manages entire gamut of services. This is the only system in world designed specifically as per working conditions of Indian government departments and consumers. Going forward with development of smart city, this integrated system will be essential for smart operation of water supply and distribution management in the cities.

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Implementation

Issues: Karnataka Water Board (KWB), Dharwad city faced higher percentage of Nor Revenue Water (NRW) close to 53%, among the highest in the country with large number of illegal water connections, poor operation and maintenance of infrastructure, poor customer service etc. All these problems led to decrease in revenue collection, consumer unhappiness and frequent complaints.

Solution: The problems led to deployment and implementation of suitable integrated management information system consisting of recording and processing of maintenance requests, allocation and scheduling of work orders for preventive and proactive maintenance, revenue collection, debt management, meter reading and monitoring of flow measurements, demand forecasting, load analysis and dynamic master planning for forecasting of network components, suitable cash management and financial accounting, network management with ability to do simulation and digital terrain modeling, graphical interface with zoning facilities for 44,000 water connections serving population of more than 4,00,000 residents of Dharwad city. This project was first of its kind in India in the water supply and distribution sector. To address the issues, special designed integrated system has been implemented on a single platform having the following modules:

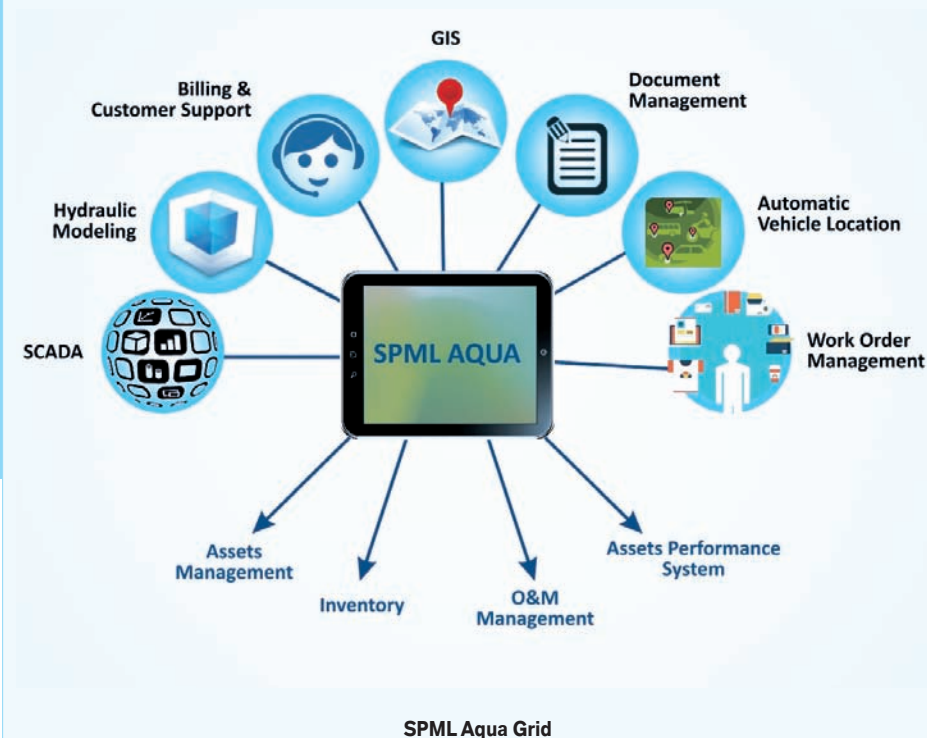
- » Billing and customer information system
- » GIS and network asset management
- » Operation and maintenance management system
- » Network analysis
- » Demand management system and asset management
- » Finance management system



By Tejus Kumar

Key Features

- » Client can view and analyze GIS and consumer data over the internet
- » Can access and collect GIS data from their laptops in excel or PDF formats for further analysis
- » Connects the entire organization with customers, suppliers, partners, contractors and employees
- » Improves efficiency of all operations and eventually enables the water distribution utilities to take real-time and informed decisions on time, thus facilitating swift decision making
- » Easy to use navigation menu
- » Integration with detail database information
- » Easy to access on the internet browser
- » Professional print and report generation
- » Custom and advance search functionality
- » User friendly System, among others



Improvements

With the implementation of integrated system, Karnataka Water Board, Dharwad division was able to reduce non-revenue water from 53% to 28%, a drastic improvement as compared to NRW management in other cities of India. Improved customer service was main aim of this project which was achieved, and illegal connections were traced and regularized. With help of mobile app, citizens were made aware of their bill payments, water supply timings etc which increased consumer servicing. Maintaining proper pipe network asset of 600 km in city led to tracking and repairing water leakages which also required old pipe network to be replaced to new system which reduces Unaccounted For Water (UFW) drastically. By installing billing and CIS module, accurate bills were distributed to citizens in timely manner which helped them to pay their water bills in time and also suitable consumer kiosk was opened across the city which helped to set right collection system, thus increasing revenue for water board. By implementing operation and maintenance system, maintenance

of assets such as preventive maintenance, proactive maintenance which resulted in handling leakages, maintenance requests from consumers in methodological way that helped in reducing revenue loss to water board.

By using demand management system, water board could do timely analysis of water demand in newly built up areas and supply them drinking water more accurately. By integrating Network analysis module, small water hydraulic model was simulated in system itself for designing water supply pipe network in newly developed areas. By integrating finance module, all accounting operations were streamlined. Tendering and supplier management were streamlined along with human resource management of employees by introducing finger print bio scan devices for access in government water board. Warehouse and store management was streamlined with proper maintenance of equipment and records.

Results

These efforts have yielded good results that led

to increase in revenue collection to water board. The revenue collection for water board was INR 36 Lakhs per month before SPML took over task of increasing performance. The revenue collection has increased by more than 250% to INR 95 Lakhs per month and water loss reduced by almost 50%, a record in itself.

About the Author

Tejus Kumar is Head, IT of SPML Infra Limited. He leads the IT project division and handles various smart utility projects of SPML Infra and its group companies. He was responsible of implementing Integrated Management Information System for Dharwad city.

SPML Infra Ltd. is one of the leading Water infrastructure development company of India having over three decades of rich experience in executing 600 Projects with an Annual turnover of approx. INR 20,000 mn.

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