



Silwana Infotech
Investing into Innovation

CASE STUDY

Building a Smart City Application for an Energy Company



Country
UAE

Domain
IT Services

OVERVIEW

There is a steady growth in world population and a decline in resources. To distribute optimally and ensure everyone gets a fair share, there have been numerous initiatives by the government. However, the first thing to do is assess how much resources are consumed daily. Using the technology of IoT and smart homes, and smart cities, governments can process data collected to get a clear understanding.

Our client wanted to combine this data from different sources and bring it under a single unified platform. This platform would be developed to collect all the data from the different stationed devices. This data can then be analysed to generate statistics.

This need was addressed when our client approached the Silwana team. We developed a web-based platform. This was built to generate data-driven insights and turn them into actionable insights. This data would be assessed by the infrastructure operators and council services.

CHALLENGE

Team Silwana was asked to create a web-based system for the local authorities to process and operationalise data from smart homes and smart cities. The challenges included:

- Collecting data generated from IoT-enabled devices and sensors embedded in assets, publishing them to APIs and creating interactive front end enabled with BI.
 - Supplying secure APIs of real-time IoT data, which is customisable and to be consumed by 3rd party services.
 - Utilising AWS to make an operational platform, which had to be in sync with the different devices stationed.
 - Creating a centralised dashboard where all the statistics generated would be published. It had to be then presented in an easy-to-understand manner for users.
 - Another challenge was creating a web-based solution to be utilised by the different institutions and authorities.
 - The infrastructure operators were given end-to-end software solutions.
 - A robust security system was also set in place to protect the sensitive data collected from these devices.
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The Silwana Team created a web application which is SAAS based. It is called the "Smart City System" and is readily accessible from the internet. This web application comes loaded with many features. Some of them are listed below.

User Interface: The web-based platform provides the users with an interactive platform, allowing them to access its features. The access to the platform is controlled by a Single Instance per Customer model. The different staff can then access it in a controlled manner, whereby the sensor data is segregated between customers.

Home Page: The home screen has a map showing the sensor locations and select data from the sensor.

Dashboards: Custom dashboards can be created to display data and share it with teammates in the organisation

Data Feeds: This provides a secure API to expose a selection of the data collected for use by third parties.

Data Export: Data displayed on the dashboard can be exported as a CSV file.

Devices: Customers can have a device management console where they can define device sensors, attributes, alarm types and teams.

Communication Gateways: It supports gateways like LoRaWAN Gateway and third-party software gateway.

The technologies and tools used in this project include:

- Serverless (microservices) was the server used.
- Development Platform used was Visual Studio Code
- It used technology like Node JS, Amazon services (VPC, CloudFront, React JS, Route53, WAF, Shield, IAM, Landing Zone, IoT, Quicksight, SQS, API Gateway, Lambda Functions, RDS, Cognito.
- Database was PostgreSQL
- The third-party apps and API were AWS Quicksight, OpenStreet Map, Sequelize SQL, OWASP Zed Attack Proxy (ZAP)

The Outcomes & Business Benefits

Silwana team successfully provided its IoT and app development expertise to build a robust app to serve the specific needs of the client. Using the web app, the client can let its customer,s who are infrastructure operators and council services, get data from the IoT devices. They can also turn this data into actionable insights. The client can now use the app to implement this software solution in instances like smart parking, assisted living, street lighting etc. Overall it improves the social welfare of the citizen as the local governing body becomes more operationally efficient with this solution in place. Our team not only provided the client with a helpful solution but also added value to society through this project.

Want to build an IoT application for your business?

Get in touch with us today!

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About Silwana Infotech

Silwana Infotech is a market-leading name in global IT services. With headquarters in Dubai, UAE, development centre in India, and presence across 7+ locations, we are spearheaded by a leadership team comprising industry expert, business-technical analysts, and subject matter experts with far reaching experience of more than 2 decades.

Our comprehensive IT services range from software development, product engineering, infrastructure services, and solutions based on emerging technologies like AI, BI, IoT, Blockchain, AR-VR etc. to digital marketing, content creation and resource augmentation. Our technology products include ERP, HRMS, CRMS, and various industry-specific solutions.

As a complete IT partner for enterprises and businesses, we harness advanced technologies to conceptualize, develop, and implement innovative products and solutions that make lives easier. We are proud to be your partner in success!



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