Comprehensive end-to-end FSM solution to manage the whole metering process for Utilities

Overview

Energy suppliers have been increasing the number of smart meters they install and subsequently service. This program is an essential infrastructure upgrade digitalizing the energy system, providing greater understanding of how much energy is being used, where and when, improving the efficiency of forecasting demand. This will help the consumer lower their energy bills and carbon emissions. Improved forecasting will help reduce waste in the energy system and in the future enable greater provision to be from local and renewable resources.

The deployment of smart meters must be carried out safely, keeping the consumer and supplier technician safe but at a reasonable cost. Scheduling appointments is an important part of the process reducing interruptions in service during the installation process with power only switched off at the point the meter is changed. Consumers know when technicians need to have access and clear the space around their meter.

For many years, utilities companies have been carrying out manual readings, relying on estimates or customer provided readings and then using the resulting data to make decisions. Inherently leading to a reduction in the ability to provide accurate billing and forecasting with higher meter reading logistic costs.

01 **Manual meter measurements:** First, meter reading was a cumbersome process and required the physical presence of technicians who had to be able to access the consumers premises. This method involved the need to maintain a large number of field employees. It also generated high costs and caused huge logistics problems for distributors and volatility of customer' appointments.

02 **Meter measurements using wireless technologies:** In the second stage, remote data collection was made possible by wireless technologies (e.g. radio and GSM) or solutions with converters in meters, which enabled remote data reading using the "drive-by" method. These remote monitoring tools only allowed meters to be read from a few meters away. Readers physically still had to visit a given area and suppliers did not have permanent access to up-to-date information.

03 **Remote data measurement - smart metering:** now a new era of readings has begun. Companies from the utilities sector are now able to access user data remotely, 24/7, with no necessity for physical staff to take readings. With the latest smart meter protocols, this means that information can be transmitted automatically, directly from meters to information systems. Information can be sent over very long distances, allowing suppliers (operators) to efficiently manage resources and detect leaks, anomalies and security breaches early. Typically, usage data being collected monthly, daily and every half hour.

The future of smart metering systems will be based on technology that lets consumers control their energy usage and pay for it digitally. Through an IoT platform, consumers can better manage their energy consumption and receive notifications. This approach will create a more efficient system that serves the interests of all involved, including energy suppliers, governments, and consumers alike. Moreover, the use of this technology can help to create more efficient and sustainable cities.

What are smart meters?

Smart meters are a state-of-the-art technology that makes it possible to remotely read utility meters. It also enables communication between smart meters, utilities, and suppliers. Originally it concerned only electricity meters, now it also includes meters for water, gas, heating and other utilities, and is closely related to the concept of the Internet of Things (IoT).

Advanced communications infrastructure (or AMI) is a sophisticated system of smart meters, data networks and other technologies that provide utilities with the ability to measure, manage and report on electricity consumption. It includes systems for two-way communications among the utility and user, as well as an extensive computerized data management system, such as:

- **Automatically and remotely measure energy use**
- **Connect and disconnect service**
- **Detect tampering**
- **Identify and isolate outages**
- **Monitor voltage**

Advantages of AMI

At a large scale, communication technology will become an integral part of managing the grid. When energy is sent through power lines, it will be received by smart meters that will send data back to network providers. This new technological solution will help manage energy needs and supply in a faster, more efficient manner. In the event of an outage, energy could be re-routed via a different path to the customer. It also allows for renewable energy to be better integrated in the system.

At a personal level, having more information about energy consumption will help consumers understand how they are consuming and how to make more efficient choices.

Challenges in setting up a meter replacement field service process

▶ The smart meter rollout must be carefully planned and executed, to ensure that it is safe, cost-efficient and minimizes service disruption for customers. There are numerous exceptions, customer interactions and appointments that have to be factored in to the planning and scheduling optimization.

Smart meter rollout - Key topics to address

- How to assess and manage the enormous field services workload peak for the initial smart meter rollout?
- How to supervise the progress of the initial smart meters rollout with minimized internal planning resources?
- How to integrate and acquire master data from third party systems?
- How to plan a territory rollout?
- How to optimize the sequence of the jobs to ensure customer satisfaction?
- How to cope with volatile schedules?
- How to ensure the accuracy of data collected on field?
- How to involve field service subcontractors efficiently?
- How to assist customers in the post meter replacement process (e.g. boiler rebooting)?

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Next-Gen FSM Platform
End-to-end FSM solution

MOBILE
EXECUTION

01 | Master data management

The Next-Gen FSM Platform provides the capability to acquire, manage and represent the entire set of data and mandatory information to optimize the meter replacement process:

- Data acquisition from third party systems such as Billing (e.g. SAP ISU, NET@Suite, Oracle CC&B).
- Master data from both customer and property information.
- Existing meter master data (capacity, year of fabrication, manufacturer, model, etc.).
- New meter master data (capacity, year of fabrication, manufacturer, model, etc.).

Leveraging advanced GIS cartographic features, the Next-Gen FSM Platform enables master data to be represented on visual maps (Google, Here, BING, ESRI, …)

Thanks to its Integration Layer Multichannel, the Next-Gen FSM Platform facilitates a real-time bidirectional communication with third party systems to push data back.

02 | Field organization

Based upon the cartographic and area/street or part of street, the system allows you to select a cluster of meters (e.g. divided according to geographic areas and technical features), in order to generate a replacement activity schedule.

Having created the replacement plan, the Next-Gen FSM Platform provides an overview of the activities to be performed directly and an exported list for each individual subcontractor responsible for delegated meters.

03 | Customer booking

With inbuilt methods to integrate with your CRM and Contact Center, the Next-Gen FSM Platform provides you with a tool to optimally book appointments with customers whilst taking into account the geolocation, technicians' availability, assignment area, cost, at risk customer needs, and customer specific premise siting of the meters, for example notice and access requirements such as indoor, outdoor, in public areas, security etc.

The Next-Gen FSM Platform allows you to book, rebook, and cancel service appointments, optimize technicians schedules, by reducing travel time, increasing utilization, maximizing jobs per day, grouping nearby appointments and thus improve customer experience and communication.

04 Scheduling and dispatching

The Next-Gen FSM Platform offers a schedule optimization engine to maximize the assignment of Work Orders to both internal field teams and third-party contractors. Schedule optimization helps Utilities comply with Service Level Agreements, hardware to be installed, priorities, and minimize travel time, overtime, costs, late arrivals and no-shows.

05 ⫝ Mobile execution

The Next-Gen FSM Platform Mobile is the platform independent App (iOS, Android, Windows) providing both full online and offline mobility, for example:

- Visualize the list of assigned work-order;
- Collect technical data;
- Confirm the replacement of the obsolete meter;
- Take photos and capture signatures as proof of replacement performed;
- Report the activity;
- Rebook intervention or a follow-up visit;
- Take photos of difficult siting (e.g., customer has new fitted kitchen so rejects replacement positioning).

In collaboration with some of our Customers responsible for smart meter replacement and reading we have incorporated specific functionality in the mobile to optimize the process (e.g., allow technicians to pick a meter from an alphanumeric list or from a map displaying the meters' location).

06 | Reporting and monitoring
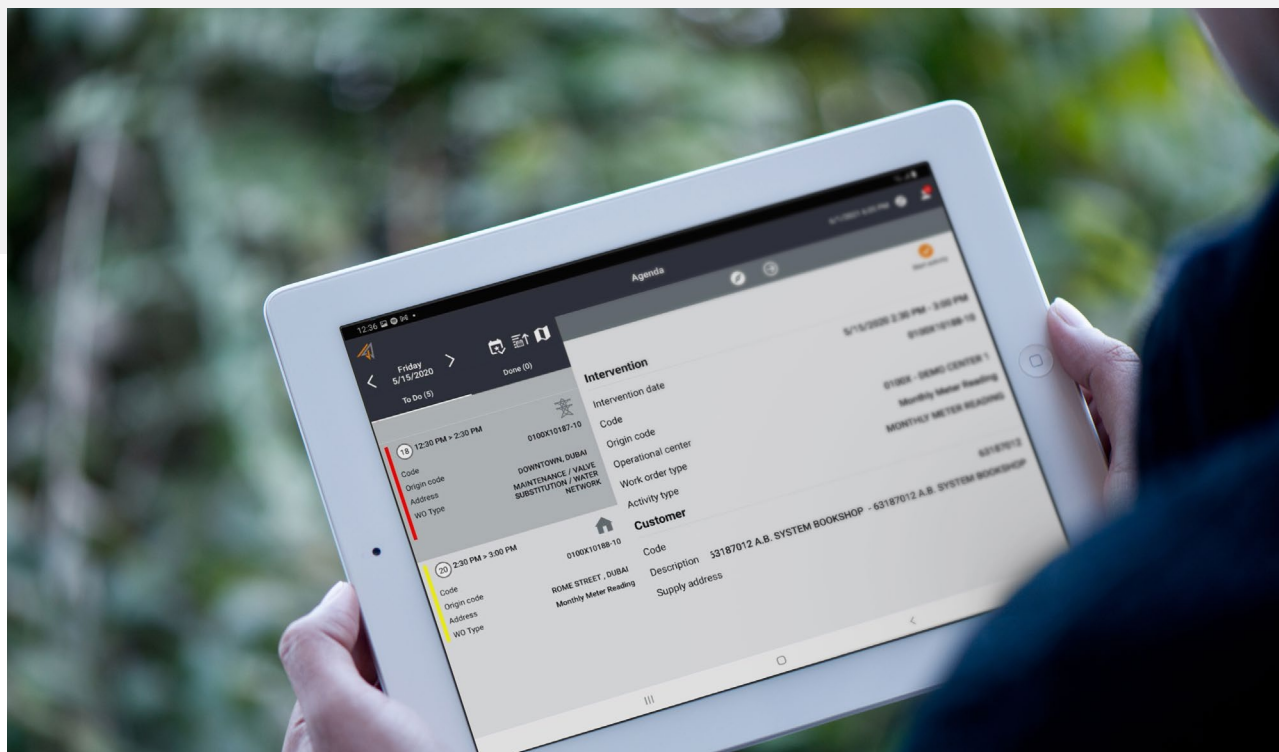
The Next-Gen FSM Platform provides dedicated monitoring tools to visualize, monitor and supervise both internal staff and contractors activity progress.
KPI and metrics are represented through reports, dashboards and features that can be visualized including on maps.

07 | B2C remote assistance

More frequently, especially in the unfortunate current environment, customers are expecting Energy suppliers to be able to remotely provide support with any troubleshooting task related to the meter replacement and other associated services on home appliances e.g., water boiler, thermostat.

Thanks to the Next-Gen FSM Platform's Augmented Reality visual support agents can see the customer's physical environment via their smartphone, providing simpler resolutions to the majority of technical support issues and provide high levels of customer service for all field interactions.

Similarly subject-matter experts and experienced personnel can provide direct and subcontract technicians collaborative support through the use of Knowledge Management, Augmented Collaboration and AI driven automatic capture and automatic workflow capture.
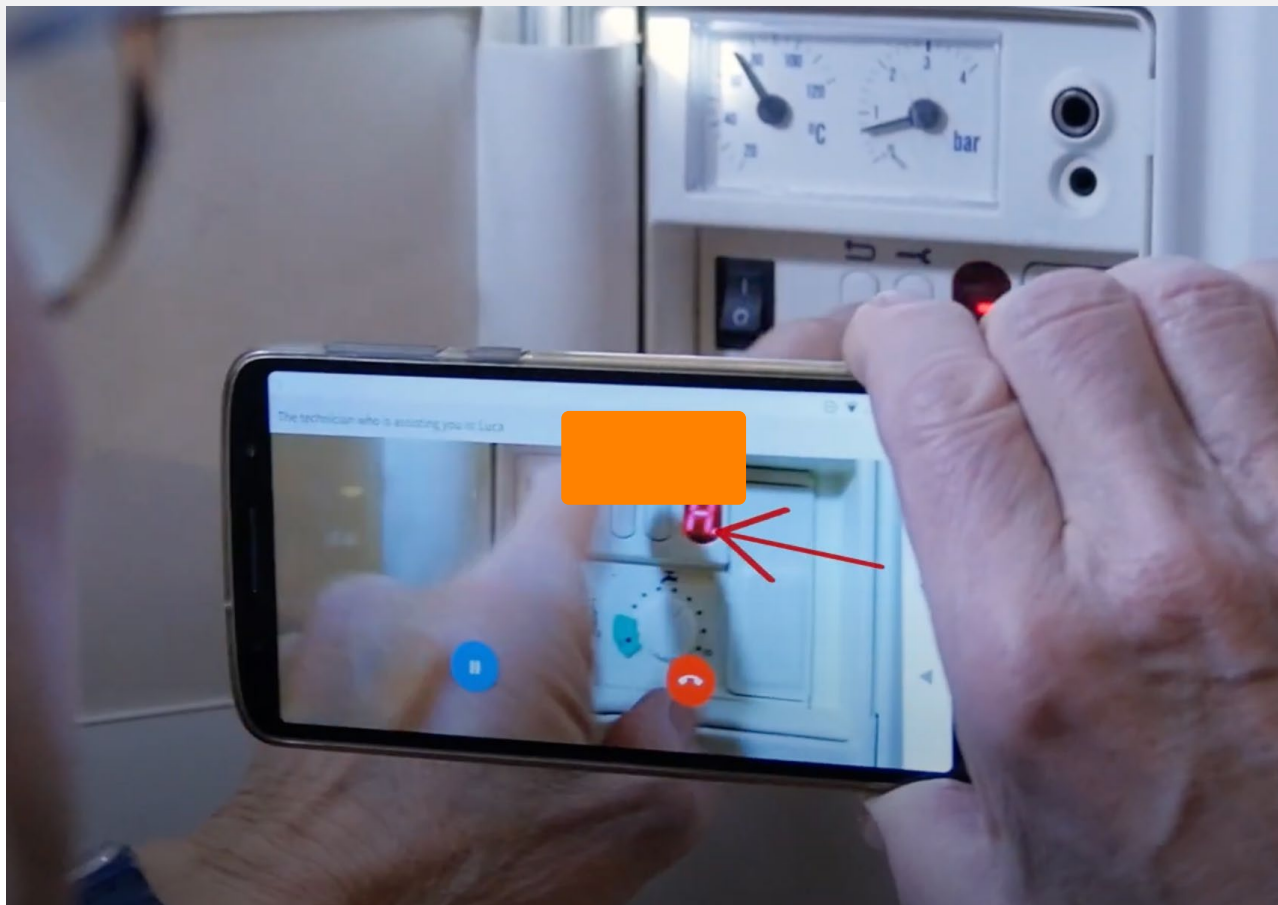
Benefits

- Streamline work orders and improve job scheduling

- Handle emergency jobs and improve the accuracy of data

- Support integration to billing system for invoicing

- Reduce costs with fuel control and route optimization

- Increase customer satisfaction improving first time fix rate

- Improve monitoring and orchestration of contractors

- Meet SLA

Conclusion

The complexities of smart meter replacement and field service can be managed, with optimized planning and execution with the Next-Gen FSM Platform, the leading Field Service Management product by OverIT

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OverIT is a multinational company backed by US capital, with more than 20 years of international and cross-industry experience in Field Service Management. It is recognized by premier global advisory and consulting companies as a leading vendor in the FSM, Mobile WFM, and AR industries, providing more than 300 international customers and 150,000 Field Service users with process knowledge, innovative functionalities and cutting-edge technologies.