

REMOTE ASSET MANAGEMENT BEST PRACTICES WHITEPAPER

IoT, Imaging and Cloud are making it possible to improve security, save costs and improve uptime at remote offices. Read on to see how.



The IoT Revolution

The World is seeing the dawn of a new industrial revolution, arriving on the wings of wireless communications and fostered by the rise of connected objects. Today, it is widely known as the “Internet of Things” (IoT).

Remote Asset Management is one of the many use cases of the IoT revolution. The world of sensors, gateways and cloud applications is transforming the entire landscape of management and control at the disposal of an organisation that has assets in remote offices and dispersed areas. Many industries have already benefitted tremendously from video surveillance and its applications.

The Banking industry has applied the technology to watch over its ATMs. This paper discusses the significant value and enhancements that the application of IoT is bringing to the Remote management of ATM sites. Sensors are at the heart



The significant enhancement in bandwidth and coverage of mobile data, together with declining costs per MB, are making it possible to haul massive amounts of data over huge distances. This is making possible use cases of Remote Asset Management which were unthinkable just a few years back.

The GSMA e-SIM is making possible an always-on connection, providing mission critical connectivity by automatically selecting the best available network.

Whilst Sensors, Gateways, Networks and the e-SIM are providing the plumbing, the availability of inexpensive and on demand computing power, together with disruptions in real time machine learning and analytics are the engines for creating actionable insights from the “trillions of bytes” generated by the billions of connected objects. These nerve centres can analyse incoming data from Sensors located thousands of miles away to provide real time monitoring, control and action.

The New Capability

of the IoT revolution. The proliferation of Sensors is driven by the creativity and innovation in the area, and the massive rate at which the cost of sensors has declined.



Solution Overview

The Gateways come next, which are responsible for capturing the sensor data so as to transmit it to the Internet based application.

Impact Areas

The coming together of the forces described above provide Banks and ATM Providers tremendous opportunities for enhancing value from the ATM site in each of the following areas

1. Remote Monitoring
2. Machine Control
3. Service Uptime
4. Energy Savings
5. User Comfort
6. Engagement

The new capabilities translate into improved security, better service, lower costs and new revenues.



Solution Overview

The ATM Management solution is a clever selection of Sensors, Switches, Cameras, Gateways and Connectivity options deployed at the site, managed by a configurable Cloud application which implements Business Rules defined by the business.

The Business Rules make it possible for the business to implement real time and automated control actions, whilst also providing real time alerts and

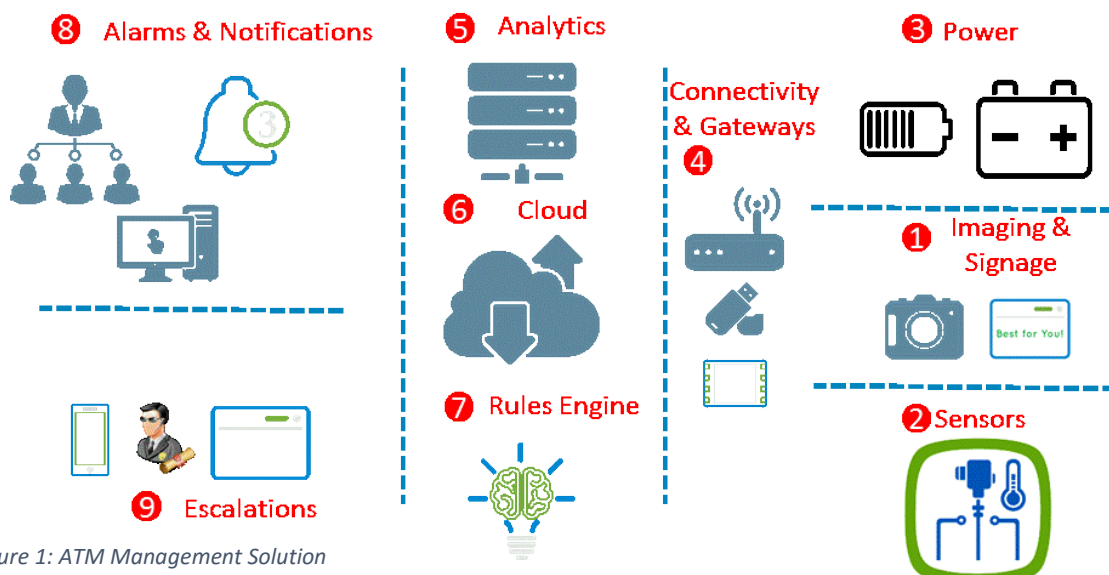


Figure 1: ATM Management Solution

notifications to the Care and Service Teams, or Officers responsible for supervising the command and control centres.

A typical solution has the following components deployed at site:

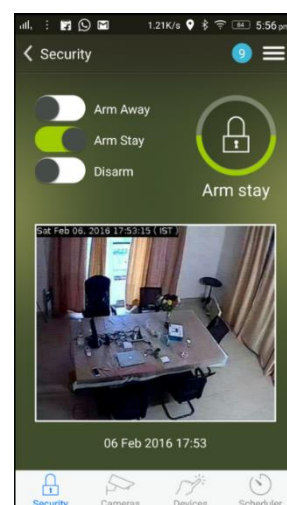
1. Cameras and Video Storage
2. Sensors (Smoke, Temperature, Fire, Light, Motion, Contact, Proximity, etc.)
3. Always on Connectivity (Router, DSL, Mobile Broadband, e-SIM)
4. Remote controlled Power Switches for ATM Machine, AC and Light etc, Actuators such as Door Locks, Power Switches, Air-conditioner
5. 2-way Audio & Hooters to assist customers or act as deterrents for mischief mongers
6. Remote managed digital signage for user engagement

The Cloud based Server Applications perform the following actions:

1. Record, analyse, manage and act on the Sensor Data, Video and Image Feeds
2. Present Notifications and Alarms to Site supervisors
3. Powerful rules engine that automate actions based on the real time inputs coming from sensors, cameras and switches deployed at the site
4. Web and Mobile Applications that help Service Managers and Supervisors view and control the remote sites
5. Analytics that work on the massive amounts of Video, Image and Sensor data to advice of trends and variances that are important to keep the site secure, control costs and deliver comfort

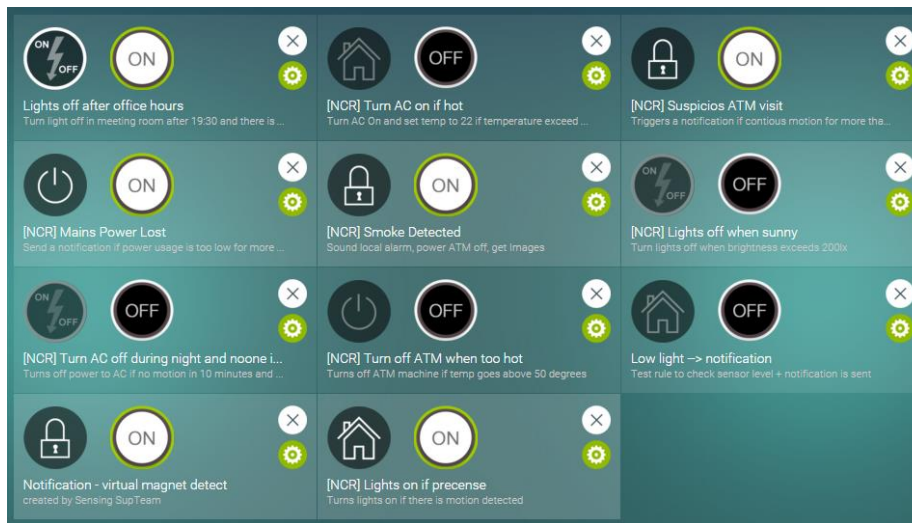
Mobile App

The Mobile App provides real time alerts and notifications with complete control of the site equipment. The simple and intuitive App adds tremendous value to the managers and supervisors of the site.



Rules Engine

The heart of an effective control system is an ability to convert incoming data and analytics into actionable rules. The new age



IoT platforms are powerful as they distribute intelligence in Sensors, Gateways and Cloud Applications. An extremely flexible and diverse set of rules are implementable with Schedulers and Rules Engine, the Figure on the left exemplifies a few of these.

Video Analytics

Video Analytics adds a new dimension to remote surveillance by detecting situations such as intrusion, loitering, crowds etc. Given that it may not be possible to promise 1MBPS connections at all remote ATM sites, the application of compression technology, optimised video transfer and post facto analysis of video streams adds tremendous power to the management of ATM sites.



Scheduler

It is impossible to make it economically viable to manage mundane tasks of an ATM site by deploying staff at each site. The Scheduler adds invaluable capability for performance of



automated and periodic functions that can save costs, improve security and add convenience to the users and managers of ATM Sites. Amongst many others, the Schedulers can

- Turn ON and OFF the ATM machine at set hours on set days
- Turn ON and OFF energy loads such as to optimise energy consumption
- Set Air-conditioners to predefined temperatures as per the requirements of the city and season
- Arm the Site to High Security during wee hours, and to Monitoring mode during the day

The advancement produced by applications of IoT are not incremental; they are transformational. Industries and businesses that harness the power of IoT will derive substantial value from the optimised operating processes and business models. Remote management of offices and work sites such as ATM's, BTS's, Warehouses etc. is one such area, which benefits significantly from the IoT transformation. Forward thinking organisations are adapting and benefitting from the new capability.

Sharad Arora sharad.arora@sensorise.net

The Author is the Managing Director of Sensorise Digital Services Pvt Ltd, an IoT Services Provider



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