LoRaWAN®

LoRa Alliance®

LoRaWAN Empowers Very Low-power, Wireless Applications

Editor-in-Chief: John Koon

TECH IDEA

tech idea international

6.5 Microshare Smart Facilities Management Solutions on LoRaWAN®

The promise of LoRaWAN will be realized with IoT solutions that support your business initiatives and grow and change as your business grows and changes.

Microshare offers Smart Facilities Management accelerators in the form of starter kits that enable you to deploy a working IoT solution on a LoRaWAN network in less than a day – without IT involvement.

By Charles Paumelle, Ellen Brockley and Tim Panagos, Microshare, Inc.

The explosive growth of IoT sensor and network technologies promises to change the way we live, work, and earn in ways we cannot yet imagine. Innovation is lowering the cost of ownership and increasing ease-of-use to enable ubiquitous IoT adoption across every industry, home, and office around the world. The LoRaWAN infrastructure is available, evolving, and fast becoming the de facto standard for IoT across the board.

Now we need IoT solutions that deliver real-time and historical data – the kind that fuels insights for better decision-making. IoT solutions should be cost-effective and flexible enough to adopt new technology innovation as it emerges. They should collect and protect data from multiple sources. Business users should be able to consume and leverage IoT data with minimal training or technical expertise. Data should flow to the people who need it at the right time on their preferred devices with complete control and compliance.

In short, IoT solutions should *work out of the box* supporting your business with insight that helps you make better decisions and protects your data. IoT ecosystems should grow seamlessly and change with you – from your first installation to your ultimate smart facility. You don't want to be locked down with proprietary devices, data silos, and me-too apps. You want data to be available but secure.

There are many questions when embarking on your IoT journey. Where do you start? Which sensor technology is best for your use case? What expertise do you need to build a whole solution? How will you deploy? Will you have to train users and convince them to leverage new information to optimize your IoT value? How long is all of this going to take?

Definitively answering all of these questions up front wastes valuable time and precludes taking an early advantage to create value. That is, you leave a lot on the table if you insist on developing your long-range plan up front. You will be stalled by the inertia of inactivity. What you need is forward momentum. It is best to just get started with a platform that gives you the confidence that your IoT ecosystem will evolve with technology advancements, user acceptance, and your own knowledge and expertise.

To that end, Microshare offers a data sharing platform that supports any IoT solution from any industry. The platform is technology-agnostic, so you can plug and play with new devices and

other solutions as they emerge. To help you get started Microshare also provides solution accelerators in the form of starter kits so you can deploy a working IoT solution on a LoRaWAN network in a matter of days – without IT involvement.

Let's evaluate the framework with examples from facilities management.

Microshare Data Ownership Framework

Microshare is a simple tool to use. There is one RESTful API call to inject data (via POST or web socket), and there is one RESTful API call to retrieve data. Behind the scenes is a data lake that stores the introduced content that has been decorated with metadata. When you want the data back, you call for it. No matter what the format or source, you get your data back from the data lake. See Figure 1.
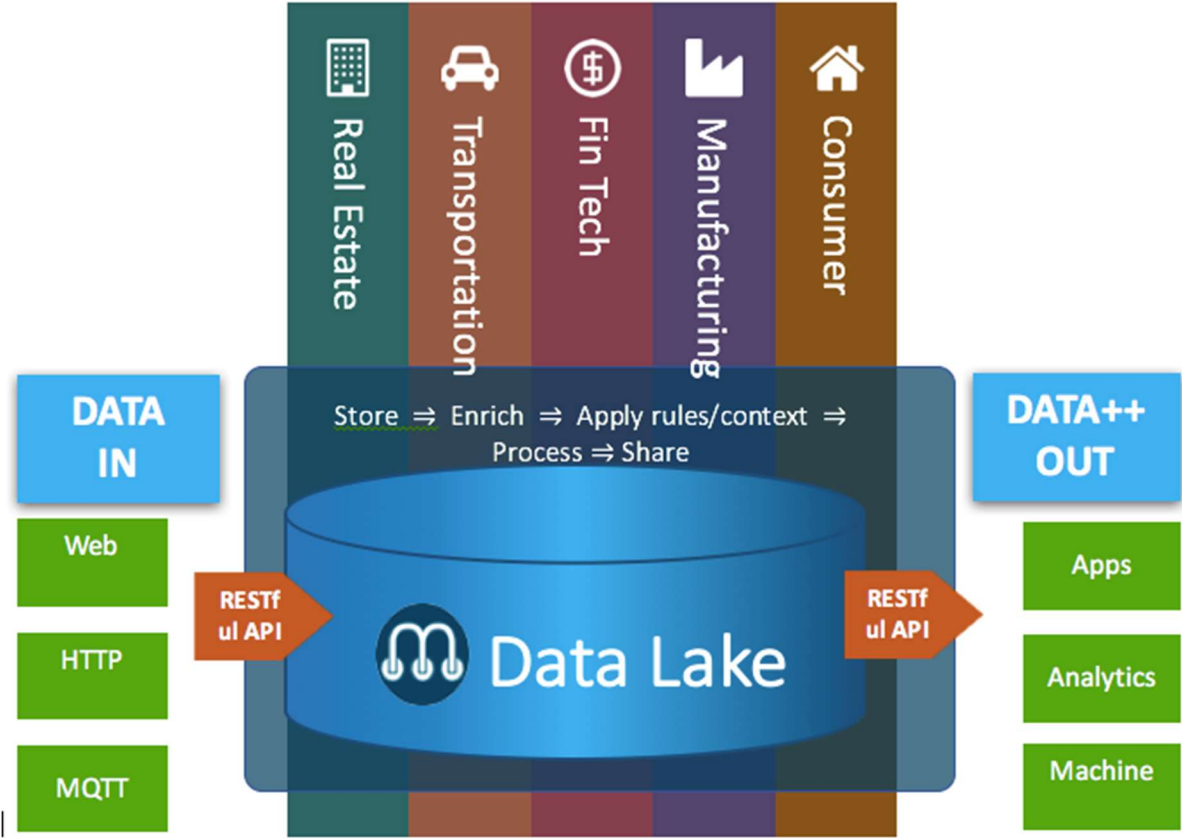

Figure 1. Microshare Data Ownership Framework

The magic of Microshare is the automatic application of data governance policies to determine which data may be retrieved in any given circumstance. Microshare uses three important elements to make this application possible:

1. Ownership metadata collect when an object is created;

2. Request metadata derives when an inbound request is made;
3. Rules that codify the conditions and context of access.

Data owners have the right to set the Rules that determine who, when, and how their stored data may be accessed by any Requestor. In simple terms, Rules determine what data is returned, to whom, in which circumstances. Inside of Microshare is a purpose-built Rules Engine that combines the context of ownership with the context of the request and evaluates your established policy to determine which 'rows' and which 'columns' of data are appropriate to return. Rules can show one set of data to party A and a different set to party B without the need to duplicate that data or perform costly offline transformations. See Figure 2.
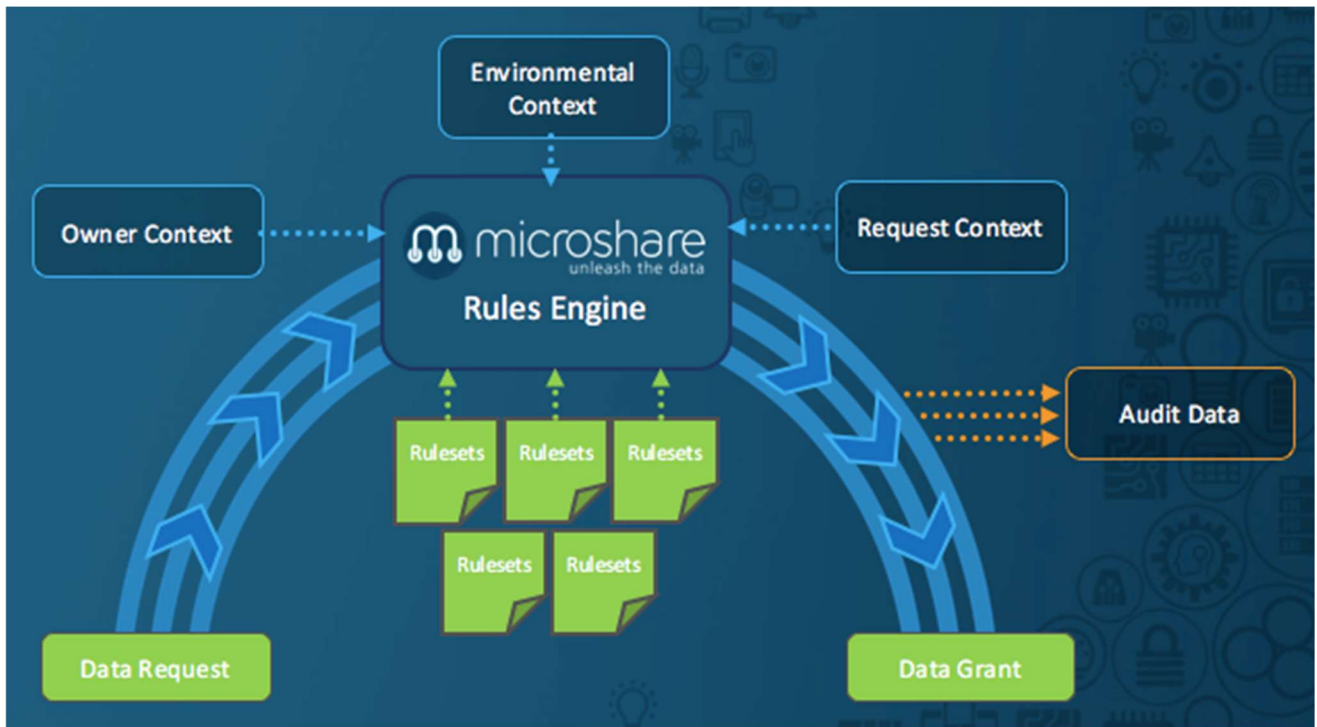

Figure 2. Microshare Rules Engine

By using the single Microshare GET API to interact with stored data, the end users, their application software, and the developers that support them need not be aware of the centralized governance decisions. That's because the data and the API remain constant even as the underlying policies change to follow evolving business needs. The whole system allows organizations to get started quickly with the assurance that their governance processes can continue to evolve without the need for costly rewrites or software crashes. Organizations using Microshare can act without fear of making irrevocable mistakes and focus on the needs of the business and the demands of the regulatory environment.

All requests, the Rules considered, and the important context used to evaluate the outcomes are logged durably to feed reporting, compliance, fraud, and analytics tools and dashboards. Running GET & POST activity through Microshare gives you a complete log of all data access regardless of source and destination.

That is the core value proposition of Microshare. The right data is made available to the right people. That is true from day one, but it is never set in stone. Microshare applies to data shared amongst users, across business units and geographies, and between organizations with equal ease.

Microshare Solutions – Smart Facilities Management

With the Microshare data sharing platform as the foundation, you can start building solutions that address your specific needs. A good place to start is commercial real estate in general and facilities management in particular. Operational improvements in cleaning and maintenance as well as space utilization not only save on costs but also improve efficiency and customer experience.

Microshare allows you to manage your entire operation with the power of real-time information about how people really use your space. With that knowledge you can make better decisions about resource allocation, space utilization, and environment quality that will reduce cost, optimize efficiency, and improve customer experience.

Microshare enables you to tailor IoT solutions with your choice of thousands of sensing devices to meet the specific needs of your business. Our starter kits get you up and running in a single day – without IT – so you can reduce costs, improve efficiency, and delight your customers all at the same time.

Starter kits include sensor and gateway hardware, application software in the cloud, and simple instructions to deploy your solution. See Figure 3.

1. Unpack the box.
2. Attach the sensors in your desired locations.
3. Name your locations on your sensor map and upload to the Microshare cloud.
4. Plug in the gateway.

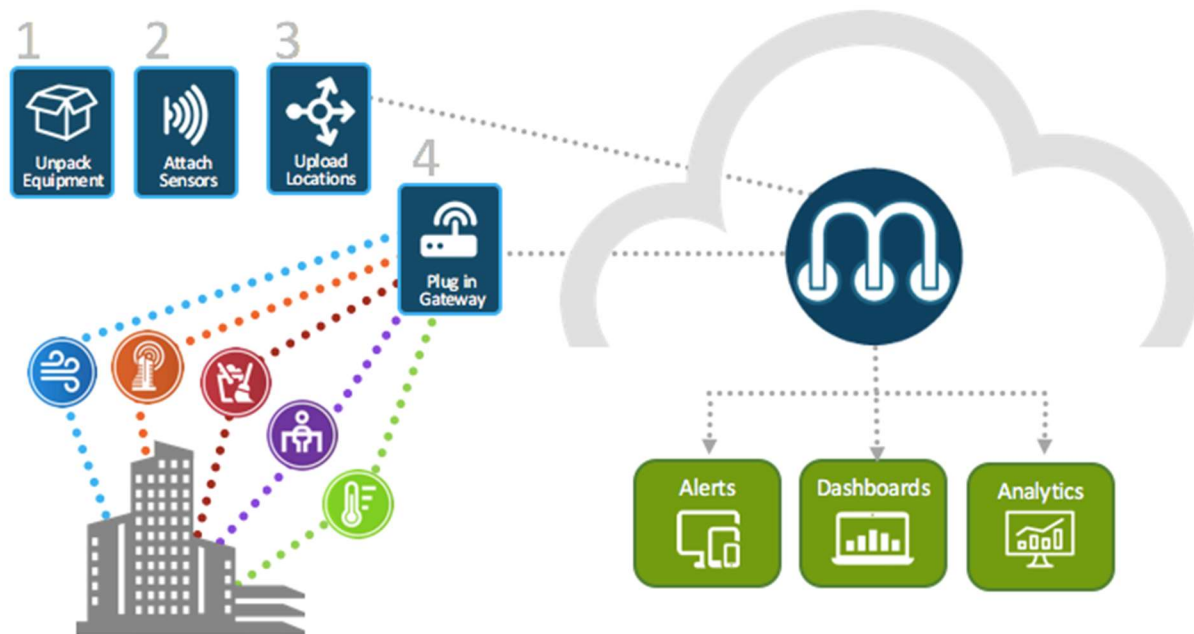Within 24 hours your dashboards will display your data – in real-time

Figure 3. Microshare Starter Kits

Microshare offers your choice of three solutions to get started:

- Predictive Cleaning
- Desk / Meeting Room Occupancy
- Healthy Office

Data from each solution is presented in a specialized dashboard and can be combined with any other data source to provide a holistic view of your entire operation.

Predictive Cleaning

Most facilities managers spend significant budget cleaning areas that are already clean, emptying waste bins that are only partially full and responding to predictable crises because they don't have real-time insight about when to intervene. This approach is expensive and inefficient.

Data generated by actual use allows you to move from wasteful schedule-based cleaning services to more efficient just-in-time cleaning. For example, you could set a usage threshold on a space that would trigger an alert to a cleaner when that threshold was met.

With insight into usage patterns you can transition from simply reacting to crises and customer complaints to proactively addressing issues before they become problems, thus improving the experience of your customers. In addition, service sensors keep you apprised of cleaning

activities so you can monitor and enforce your service level agreements with your vendors and staff.

Desk / Meeting Room Occupancy

As a tenant, it is almost impossible for you to know if you have leased the optimal square footage and implemented efficient usage programs to house your operation. You just can't be everywhere all the time to observe space utilization. How well is a hot-desk program running? Where are available desks? Do we really need this many meeting rooms?

Occupancy sensors give you real-time availability information as well as historical usage over time. Real data provides evidence needed to right-size your real estate footprint, potentially saving up to 25% in rental or leasing expense.

Healthy Office

As co-working spaces are disrupting the competitive landscape for office tenants, facilities managers are under increasing pressure to ensure tenant workers are happy, comfortable, and delighted. Workers are demanding amenities and refuse to settle for office space that is sub-par. Healthy environments are not only essential to keep tenants, they are also cost effective.

Real-time monitoring of temperature, humidity and CO_2 levels leads to real energy savings across a floor, a whole building or multiple buildings. Consolidating data over multiple facilities over time provides a comprehensive view of trends and performance, including the impact of external forces such as weather that leads to more informed and better decisions.

IoT Solutions for LoRaWAN

The value of the LoRaWAN network will be realized as new solutions are adopted and deployed within expanding IoT ecosystems. Leaders from businesses in every industry in every geography can make better decisions with insight derived from data. You don't have to be an IoT expert to take advantage of these digital transformation initiatives. You just have to get started.
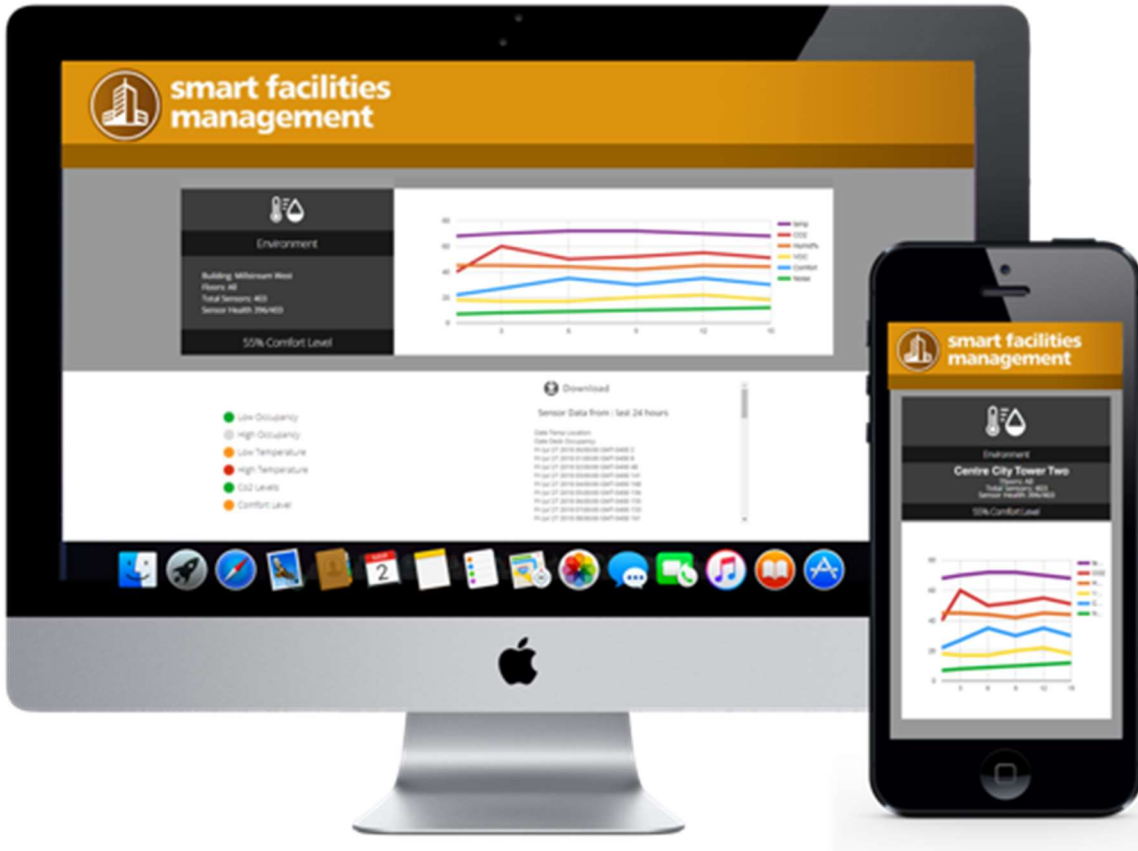
Figure 4 – Microshare Dashboard

About the Author

Charles Paumelle is a Microshare Co-Founder and leads both our global marketing effort and our international business development. An evangelist for the Internet of Things, Charles was chosen as the Co-chair Marketing for the LoRa Alliance, the fastest-growing Low-Power Wide Area Networks (LPWAN) organization. Prior to helping launch Point.io and then Microshare.io, Charles led the Accenture practice for business process management (BPM) across Europe, Africa, and Latin America. He was also Managing Director International for Knowledge Rules, a global BPM consultancy. Charles held a number of eBusiness/eCommerce leadership positions for Dell Computers, and Shell Gas LPG. Charles started his career whilst still at university working for Pegasystems (NASDAQ: PEGA) where he helped grow their business in new sectors and geographies.

About the Company

Microshare is a patent-pending Data Sharing Platform that delivers disruptive operational savings and insights across all industries leveraging IoT and Data. The Microshare Platform drives Digital Transformation and Data Monetisation including new revenue streams, new business models, and strategic differentiation by delivering a unique data governance fabric to the Internet of Things revolution.

https://www.microshare.io/