

Asset Management in Food Services

You have a large appliance that is crucial to your food service or restaurant business, probably many of them. No matter what type of appliance it is – range, freezer, fryer, warmer – it can take a great deal of time and effort to set up a system that lets you learn from that appliance and make business decisions based on the data it generates. This is the promise of the Internet of Things (IoT), to learn from device data, manage assets and run your business based on real information and insights, not guesses and past history. Eurotech and FramTack have the tools you need to develop a complete IoT solution for food service and restaurant use with instant application development and unprecedented time to market advantages.



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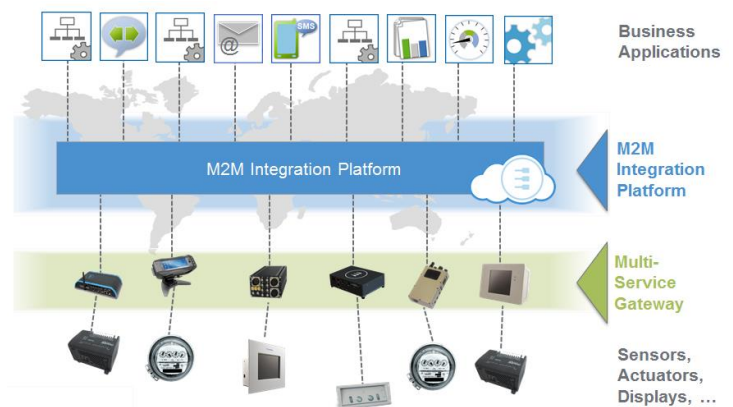
To operate smoothly, food service companies need to monitor and manage their assets, primarily large appliances. Whether the business application has one device, ten, or hundreds, a great deal of data is generated and must then be collected, stored, and analyzed to provide business value. Consider a commercial ice cream machine. If the ice cream freezer stops performing during any time of day or night, revenue drops, costs go up and, for a small business, the shut down could be debilitating.

A modern ice cream machine measures temperature, mixing ability, indicator light status, touch screen condition, power consumption, cleanliness, and more. A franchise owner may need to monitor multiple machines at several locations to ensure optimum operation and uptime across all their food service businesses. Just like any other business with valuable assets, such as large appliances, operators need a way to collect a significant amount of asset data, store it for an appropriate amount of time, and then access the data to manage their business operations and performance. This type of system, a Machine-to-Machine (M2M) system, is an important component in the Internet of Things (IoT).

Data coming from the assets can keep the business running and be used to make decisions about enterprise direction. If the ice cream freezer breaks down in the middle of the night, maintenance needs a text message or phone call. If the mixer is starting to wear down and parts are starting to show signs of failure, maintenance must be alerted before damage begins and stalls business. Data revealing how much of each flavor of ice cream is produced and consumed could potentially change marketing practices at the store.

Data is valuable, but most businesses do not have the technical expertise to set up this type of IoT/M2M system

and create business logic and applications that are specific to their environment. Even if they do, in-house development can easily take months. Framtack and Eurotech have joined forces to offer customers ready-to-deploy building blocks to connect M2M applications to the cloud with an unprecedented time to market advantage.



M2M Service Components

MULTI-SERVICE GATEWAYS

Once the data has been captured at the sensor or asset level, it must be collected and transmitted. Eurotech's Multi-Service Gateways, based on various processor families from Intel®, aggregate data from sensors, devices, actuators – assets that produce data and can share it. Different Multi-Service Gateways meet requirements of various vertical markets, with extended and commercial temperature support, ruggedization levels and connectors to meet industrial specifications, form factors that fit into your specific environment and support for industry-specific protocols to communicate with assets and appliances. Example Multi-Service Gateways include ReliaGATE 15-10, and ReliaGATE 50-21, based on Intel® Quark™ SoC

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X1000 and Intel® Atom™ Processor family, respectively.

the application.

APPLICATIONS ON GATEWAYS

With Eurotech's Everyware Software Framework (ESF) installed on the Multi-Service Gateways, programming the units is streamlined through the use of foundational and vertical-specific bundles of functionality, based on Hitachi's OSGI framework and Oracle Java. Applications built on one Multi-Service Gateway can be easily ported to other ESF-enabled devices, for long application life. ESF also allows for comprehensive device management as well, including bulk provisioning, configuration changes, and updates through an entire distributed asset environment, across a single restaurant with multiple appliances, or across several locations.

FramTack's Solution Family is a set of tools that simplifies the application development required to get data from appliances, send data from the devices to the Cloud, and finally change the behavior of the appliances with device rules. Solution Family can operate in conjunction with Eurotech's ESF on the multi-service gateway. Solution Family allows the subject matter expert to create their own M2M application without requiring them to know how to program. The Solution Family includes Solution Engine, Solution Builder and Dashboard Builder.

Solution Engine is an application platform designed to implement the data collection, communications and rules. It gathers data, analyzes it, sends it to and from the Everyware Cloud, and controls the appliance. Multiple Solution Engines are configured into an M2M system with Solution Builder, a user targeted development tool that creates rules with simple drag and drop capabilities and full access from the device to the cloud to create and design

M2M INTEGRATION PLATFORM

Solution Family integrates seamlessly with Eurotech's Everyware Cloud, the M2M integration platform that transmits, combines and analyzes data flows from the field devices to bring the data into a manageable and useful form for business applications. Everyware Cloud optimizes data collection using the open MQTT protocol, manages all the connected devices providing information about the status of every single device, and offers a sophisticated tool for analysis of real-time data for immediate action as necessary, while a long-term data store enables trend analysis over time. All these functions are accessible through programmatic interface by any number of business applications.

The Everyware Cloud integrates data from producers in many environments, which have been isolated in the past, to deliver information seamlessly to any number of data consumers (typically business applications). With data collected from numerous sources and processed as a whole, developers can conceive new services that are currently beyond imagination.

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Solution Family's Builder® and Engine®

CONCLUSION

Eurotech and FramTack help businesses develop both device-based applications and platform-based dashboards to simplify operations in a food service environment. With these tools, companies create the specific applications they need in a fraction of the time it would take to create applications otherwise. Solution Family products enable users to commission devices in seconds, publish and subscribe data, and drag and drop data collectors that publish new device data directly to the cloud via machine-to-machine communications. For more information on how Eurotech and FramTack can help you connect to the Internet of Things and increase your business success, please visit our websites at www.eurotech.com and www.solution-family.com.

DATA DASHBOARD

The Everyware Cloud M2M Integration Platform includes a console for information display as well as device and data management functions. For those who need only a certain subset of information from the assets, such as temperature and cleanliness of a freezer or fryer, FramTack also provides a Dashboard Builder to create simplified displays targeted to the needs of specific users. Administrators can use the Everyware Cloud console for administrative functions, while those operators who are responsible for the operations of a facility, for instance, can build a dashboard that shows them precisely the information they need in real time. Dashboard Builder is a web based development tool that allows for the creation of HTML web pages that connect to the data moved to the Everyware Cloud from Solution Engine. The Dashboard Builder simplifies the process of creating dashboards using clear representations of equipment functions, such as knobs, graphs and other elements, all while maintaining proper data security through managing user roles.