



Mitsubishi Electric generating revenue for new business line with development of application



Mitsubishi Electric knew that the creation of data generated from their air conditioning and heating units would provide them with an opportunity to create a relationship with their customers and provide them with information to be able to improve their service. What they didn't know was how?

The Client

Mitsubishi Electric is a worldwide manufacturer of electrical equipment with £23 billion annual turnover. Their Living Environmental Systems business unit is responsible for the manufacture & sale of heating, air-conditioning and photo-voltaic devices. They operate world-wide, with a European management tier, and then individual businesses in all of the major European countries. We initially engaged with the United Kingdom business in early 2004.

The Challenge

Mitsubishi Electric needed a means to engage with their customers through their range of air-conditioners and domestic heating units. Through the use of a hardware device with a wi-fi connection they wanted to be able to:

- > Allow their customers to remotely control their air-conditioning and heating equipment from smart phones and tablet applications, as well as a web browser running on PCs / Macs.
- > Provide means for engineers to remotely diagnose faults and use reports to look for trends.

- > Collect and aggregate data submitted by thousands of air-conditioning and heating units across Europe into a data warehouse.
- > Analyse this data in combination with weather feeds taken from a global meteorological provider to examine the efficiency and usage patterns of their equipment in the field.

The Solution

We provided an end-to-end solution to Mitsubishi Electric, beginning with a full requirements analysis and technical architecture design for the system, and the graphic design of the mobile and browser applications. Of particular concern was the scalability of the architecture with requirements to support a very large number of concurrent units. We addressed this requirement by making use of the capabilities of Microsoft SQL Server Enterprise Edition to organise servers into Always-On availability groups, and by using de-centralised PCIe-based SSD storage to provide a dramatic speed improvement over traditional SAN-base database solutions.

Client >

Mitsubishi Electric

Sector >

Manufacturing

Project >

Application Development

Mitsubishi Electric Case Study



We then developed web-services using the .Net MVC framework both to communicate with the hardware devices and with the control applications. The control applications were developed using the Adobe Phonegap platform which allowed us to write a single codebase that supports all major mobile platforms. A significant challenge here was to produce a “responsive” user interface design that adapted well to both a 3” smart-phone screen and a 26” widescreen PC monitor.

The Benefits

The MELCloud application gives Mitsubishi a sales advantage over their competitors by being first to market with internet-based control of their air-conditioning and domestic heating range, and by being able to retro-fit this solution to existing equipment.

As well as giving their end users the ability to remote-control their equipment, the system also allows Mitsubishi to collect data on how efficiently their equipment is performing and on which features of the product customers using more frequently to guide their new product development.

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