



Vodafone Global M2M



AMS chooses Vodafone's network for smart metering *power to you*

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IMPORTANT

New Zealand Case Study

Vector in partnership with Advanced Metering Services (AMS) are providers of smart metering solutions in New Zealand. AMS chose Vodafone to provide a reliable, cost-effective mobile communications network to transmit the metering data. Vodafone worked closely with AMS to provide a bespoke technical solution and to develop new price plans that ensured the smart metering solution met the requirements of New Zealand's energy retailers, consumers and distribution companies.



Vector and Advanced Metering Services pick reliable, cost-effective GPRS mobile network for smart metering

The need

Around the world, the electricity supply industry is turning to 'smart' meters to lower costs, reduce emissions and improve the management of customer supplies. Smart meters collect detailed consumption information and using this feedback consumers can better understand their energy usage which in turn enables them to modify their consumption to save money and help to cut carbon emissions.

A smart meter can be defined in many ways, but generally includes an element of two-way communication between the household meter and the utility provider to efficiently collect detailed energy usage data.

Some implementations include consumer feedback beyond the energy bill to include online web data, SMS text messages or an information display in consumers' premises. Providing a cost-effective, reliable communications mechanism is one of the most challenging aspects of a smart meter implementation.

In New Zealand, the utilities have embraced smart metering and designed cost effective ways for it to be implemented. The New Zealand government has encouraged such a move to smart metering by ensuring the energy legislation is consistent with the delivery of benefits to the consumer while allowing innovation in this area. On the ground, AMS is a leader in the deployment of smart metering and associated services.

Several of New Zealand's energy retailers were looking for smart metering services for their residential and small business customers which will eventually account for over 500,000 meters when the multi-year national deployment program is concluded.

To respond to these requirements, AMS needed to put together a solution that included data communications between each meter and the central data collection point and the solution proposed by Vodafone satisfied that requirement.

Environmental benefits

Smart metering provides a number of 'green' benefits. AMS's roadmap expands the options for providing information feedback to consumers, which will both motivate and enable them to reduce consumption and hence carbon emissions. Detailed smart meter data allows energy suppliers to use tiered pricing to encourage off-peak energy usage, such as in the evenings, which results in better utilisation of cost-effective renewable energy at these times.

Additionally, AMS's smart metering solution provides a cost-effective mechanism for environmentally minded consumers to recover a fee for power they feed back into the network, for example from small-scale wind turbines or solar power generation. This is particularly relevant in a country like New Zealand that has ready access to renewable supply options.

The solution

AMS decided to use a communication solution based around Vodafone's existing GPRS mobile network having considered the use of power line communications, WiMAX mobile broadband or a purpose-built RF mesh network.

"There were two principal reasons why the GPRS network from Vodafone stood out for us," said Atkins. "The infrastructure was already in place with ubiquitous coverage and a high reliability, the limitations of the other options would not have enabled us to roll out Nationwide".

Past experience of working together was also a factor, as Atkins explained: "We had used Vodafone's GSM network technology for several years without any problems, and Vodafone had always been open to making changes we needed."

In the AMS solution, a SIM card supplied by Vodafone is installed into the modem part of the smart meter. Regular readings are taken by the meter, and sent back automatically to AMS data management system over the Vodafone GPRS network.

"Vodafone had the ability to grasp the vision of what we were creating, and to form and empower a group within their organisation to help us achieve the required outcomes."

**Paul Atkins, Solutions Manager,
Advanced Metering Services (AMS)**



**Tailored solution**

For AMS's application, Vodafone needed to come up with a tailored solution both on a technical and commercial level. "There was no way an off-the-shelf data service could be applied to our solution, and Vodafone put together a team of people to develop the right answer," said Atkins.

"Vodafone took the time and effort needed to fully understand the problem and gave us the attention we required. The Vodafone team also ensured that what they did for AMS didn't compromise any other customers – for me, this was important in the long-term as it demonstrated that they wouldn't cause us problems in future when they added other new customers onto their network."

The solution needed to be optimised for the smart metering application, and introduced in such a way that Vodafone could manage the scale to ensure reliable data transmission. Vodafone also needed to devise an innovative commercial proposition that was able to support the business proposition for smart metering. To meet these challenges, Vodafone came up with a solution to provide reliable telemetry to AMS without compromising other network traffic.



Benefits

- Vodafone has provided a robust nationwide mobile data network that meets the requirements of the smart metering application
- Vodafone has developed an innovative price plan
- Vodafone has been innovative and worked closely with AMS to develop the best technical solution.

Vodafone has also enhanced its billing systems to meet the needs of AMS. It has developed a tailored billing module that provides a consolidated invoice, and has the flexibility to provide billing information in the formats required”.

Flexibility and effective collaboration were essential to the project’s success. “There were five technology companies providing software, hardware, service management and communications as part of the overall solution, and Vodafone was an essential component in this process,” said Atkins.

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