

Impact Report

Site Controls: one of a new class of energy managers?

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The focal point of eco-efficient IT has, in the past year, been on datacenter and desktop energy efficiency. But in the facilities management and energy distribution sectors, a parallel effort has been under way that not only mirrors many of the developments inside the datacenter, but goes far beyond it.

Site Controls is one of a number of small companies pioneering energy management and demand response systems. Focusing initially on retailers and organizations with multiple branches, such as banks, it also has its eye on any other sectors with distributed offices, devices or outlets. Its Site-Command systems technology links together multiple and diverse devices, records their energy use, and in some cases is able to turn devices on or off, and up and down. In this way, Site Controls' technology mirrors some of the innovations currently taking place in datacenters.

Its demand response systems take this one step further. It operates a service that acts as a broker between the utility and its customer. These clients are rewarded by the utility if they reduce demand for power on request. This is best done automatically, with Site Controls taking some of the savings.

Context

Electricity consumption by corporations has, over the past 18 months, become a board-level discussion, thanks to a deadly combination of escalating consumption, escalating prices, and associated carbon emissions. And it is also, of course, a big issue for utilities and regulators, which must somehow meet the challenge of rapidly rising demand and capacity constraints, all while hitting internationally agreed-on CO2 targets without adding such heavy costs that competitiveness is damaged.

There are many solutions on the table, some more feasible than others, but there is near universal agreement that energy efficiency and intelligent demand management are the two (interrelated) strategies that are likely to produce the most immediate results for the least cost. Energy-efficiency measures, according to figures from the US Energy Information Agency and various peer-reviewed studies, could cut US electricity consumption by between 10% and 30%.

Site Controls is one of a number of young companies that have developed software and services in this area. Its Site-Command system monitors energy use at retail outlets (or similar organizations), collecting data from a wide variety of devices and sources, many of which can also be controlled from a single portal. Customers save on power bills, because devices can be optimized, and they can also join demand-response initiatives, receiving discounts if they agree to cut their electricity consumption at critical times.

Site Controls is a private company, set up in 2000 by Dan Sharplin, the CEO, along with two colleagues, Jim Law and Colin Bester, in Austin, Texas. Its business model is the sale of software/hardware for monitoring, along with associated services; it also takes a portion of saved energy when demand/response systems are invoked. The company will not disclose any financial data, other than to say sales are in the \$15-25m range. It has staff of 90 people. The company has taken no outside investment, and is not seeking any. In 2008, Site Controls acquired the assets of Excel Energy Technologies, which supplied the IkanoSphere energy management product to retail chains.

Technology

Site Controls' Site-Command system is very similar to the type of integrated power management systems now being discussed for use in eco-efficient, power-managed datacenters. The main difference is that the devices managed are mostly simpler and less sensitive than servers or storage systems, and so can be more easily automatically controlled according to a set of rules or policies. In a managed site, a network, which can be wireless, links devices such as electric lights, signage, air conditioning and humidity control systems, to a local server. As in the datacenter, not all devices can be linked to a network, and only a fraction of those that can be networked are actually linked in. Typically, in retail chains, about a third are networked.

The server collects this data and provides managers with a total aggregated view, as well as the ability to drill down to individual devices. The data is held on Web pages that can be managed remotely, so that a manager can see and control devices at many stores or locations. The company now monitors about 300,000 end points at thousands of client locations, mostly retailers. The system can also collect environmental data, such as temperature, CO2 content in stores, and humidity, etc.

In addition to its energy management product, Site Controls also operates an aggregated demand/response system, sometimes called intelligent load management. The system works as follows: When a utility or regulator asks for demand to be cut, Site Controls automatically sends out messages to the Site-Command systems installed at its customers' locations. These can then cut demand automatically according to pre-agreed policies and rules. Utilities operate demand/response systems in New England, New York, PJM, Florida, Texas, New Mexico, California and Ontario. In Europe, demand/response is mostly a manual process – a call is made to a handful of very big customers. Automated demand/response, especially if a platform is used to aggregate smaller sites, has a big advantage, in that multiple, small cuts in demand can be made according to a policy, which is less expensive and intrusive.

Strategy

Site Controls is focused on energy efficiency and on building intelligence and flexibility into the demand side of the grid-utility network. It is unquestionably a market in its infancy, with high growth prospects, and with committed political and regulatory support. Site Controls provides a strong ROI to its customers, because of energy savings, and because of payments for participating in demand/response systems. Some utilities, such as Pacific Gas & Electric in California, will also offer some incentive payments to install the systems. Its software also gives its customers the ability to optimize their power use according to different pricing and tariffs, even on a location-by-location basis.

Site Controls has an ambitious strategy to build a large and automated load-shedding facility that it effectively sells back to the utilities. In one 2006 example in Texas, Site Controls cut demand among its customers by 38%, all achieved by turning down HVAC systems. Lights and computers, for example, were not affected. According to Site Controls, every 1,000 sites on the network create 40MW of low-consequence demand/response resources – enough to tip the balance and prevent rolling blackouts in some power emergencies. Across the US, Site Controls manages more than 220MW of peak load, more than half of which could be cut in emergencies. With demand likely to outstrip capacity in many areas in the next decade, this facility could prove attractive, if not vital, to both customers and utilities.

Competition

Site Controls operates in two distinct, but overlapping markets – energy management and demand/response systems. There are strong players in both markets, but most concentrate on large, corporate offices or industrial operations. For example, Honeywell, Johnson Controls, Siemens and Schneider Electric are strong players in energy management. Demand/response systems tend to be simple links between these large and often customized installations, and the utility.

Site Controls' innovation is to focus on large numbers of smaller outlets, providing energy management, and on aggregating the power use of its customers to provide a powerful pool of power-saving potential. In this way, it acts as a broker and a platform. Among its competitors, directly or indirectly, are Ziphany, EnerNoc, ConsumerPowerline, PowerIT Solutions and RTP Controls – all young companies. There are also companies like Tendril Networks that are developing similar technology for home users.

At present, Site Controls is focused on retail and has no intention to enter the complex and specialist datacenter market – although it might be a good partner for a number of suppliers. Datacenter monitoring and power management companies such as Trendpoint Systems, EDSA Micro, American Power Conversion, Sensicast, Modius and Synapsense have some similar or complementary technology.

SWOT analysis

Strengths

Site Controls has strong technology and is an early mover in a fast-growing market. A focus on retail gives it a strong vertical.

Weaknesses

Site Controls' current focus on retail may result in missed opportunities in commercial and IT sites. Size, profile and capital may prove limiting.

Opportunities

The market for both demand/response and energy management could be explosive in the years ahead, as capacity problems arise.

Threats

There is limited IP in any offering in this area, so big and small companies may crowd into the market.