

Remote monitoring: Why it's suddenly of interest

Remote monitoring of equipment and processes is used in many industries today to improve efficiencies and reduce costs. In some sectors, lights-out operation is common –with automated machinery supervised on nights and weekends by data feeds to the smart phones of key personnel.



While data centers have been slower to adopt remote monitoring, Jim Shanahan, head of ABB's Global Data Center Automation business, believes that's about to change. We asked him why:

Why do you believe remote monitoring is about to become a common topic of discussion among data center managers?

Shanahan: Colo (colocation) data centers are being asked by tenants to provide views of infrastructure that are relevant to them. If you're a colo customer, you usually want to know how much power you're using; if you're paying for five 9's availability or guaranteed temperature and humidity, you want to know you're getting them. Earlier this year, when Digital Realty Trust [the largest wholesale developer of data centers] began implementing its EnVision DCIM (Data Center Infrastructure Management system), some of these features were part of it. For the first time, they intend to routinely give customers the ability to view this information on demand – and that has kind of put it up to everyone else.

With remote monitoring becoming so common in other sectors, why have data centers – as technologically oriented as they are – been slow to apply it?

Shanahan: More than anything, it's a concern about security. But that concern exists largely from misunderstanding how remote monitoring capabilities are designed.

Data is gathered on the data centers' secure networks and systems. Then a subset of this information is pushed to a secure "outside" location for viewing – so it is outward-only information.

This is what's being done in colo facilities; it allows the colo operator to provide just the information that is appropriate to share – and clients get a near real-time view of the information they want.

This architecture can be applied just as effectively at the enterprise or corporate facility.

Speaking practically, a big need today for remote monitoring is when data centers contract with an outside service to maintain specific systems, such as standby generators and UPS (Uninterruptible Power Supplies).

They don't necessarily want us to have internal access to their data or systems, so again, we will send outward-only information, which can be limited as needed to things like emails and alarms. These techniques can take the headache out of security.

What are the main benefits of remote monitoring?

Shanahan: First there are the obvious things: Remote monitoring can allow you to reduce round-the-clock staffing in certain areas. You'll still have people on call, but you may not need them onsite.

It can also improve response time to diagnose and repair failures, so there is a direct relation to reliability and availability.

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And there are some really interesting opportunities emerging.

For instance, by providing early warning it can allow you to improve support costs by setting call-out agreements at lower levels.

Some critical system providers such as ABB are beginning to discuss how remote monitoring might help them lengthen equipment lifecycles – perhaps allowing the option for extended warranties on things like UPS. It's still early, but being able to monitor such assets remotely is a game changer for service providers that will bring significant benefits to the customer.

Where does remote monitoring provide the best financial return?

Shanahan: The answer to that obviously will vary from one operation to another. But the most obvious financial benefit so far is coming from colo chargeback reporting. You'll also get a good bang for the buck anywhere automated remote monitoring is combined with e-mail/ SMS alerts and automated escalation to speed up identification and response to performance irregularities.

And finally, remote monitoring of critical equipment against peers or expected performance curves can open up the whole area of condition-based maintenance. For example, a chiller may be nowhere near raising an alarm, but the data may indicate maintenance is needed and – paired with the right kind of intelligence – a work order can be generated automatically.

Are most data centers technologically ready for remote monitoring?

Shanahan: Once a data center has basic metering and environmental sensors – if it doesn't, we add them – the critical equipment normally has built-in intelligence that can be utilized. The missing link would generally be that we have to install a secure collector/ visualization/reporting tool such as ABB's Decathlon®. It is usually done as a hot install with no disruption to operations. After that, it's just about agreeing with the customer what they would like to happen once we detect particular events

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