

Remote Healthcare Device Monitoring and Analytics Boost Device Manufacturers' Bottom Line

Beth Ellyn Rosenthal, Editor | September 13, 2012

[Wipro](#) Voice: Remote Healthcare



The recent U.S. Supreme Court decision on the Affordable Care Act (aka Obamacare) is just one business change buffeting the manufacturers of healthcare devices (which includes everything from MRI machines to cardiac pacemakers.) Like most manufacturers, their markets are flattening and so are their profits; developments that are squeezing their bottom lines.

Manufacturers typically have to devote a significant portion of their resources to post-market services to insure the devices perform as intended and with maximum uptime. “Manufacturers can maximize their ROI if the device performs as it is supposed to,” explains Jyotirmay, vertical head for Wipro’s medical devices and services practice, part of Wipro’s healthcare, life sciences and services business unit.

A large segment of the post-market service cash outlay goes to deploying field service engineers to provide services on site. This is how the manufacturers have serviced the devices for years. Many manufacturers also believe on-site service enhances customer satisfaction.

However, that is no longer true in today’s wired world. Now the most efficient way to stay profitable is to turn to the Internet to achieve “better outcomes at a lower cost,” Jyotirmay observes. That means the manufacturer must:

- Maximize the device’s up time
- Reduce the cost of servicing the instrument either in the hospital or on the patient. Jyotirmay says this is key to solving this business challenge because sending repair crews to fix devices on site is so expensive.
- Make services a reliable revenue stream
- Use the data the devices are already collecting to maximize performance and reduce service costs

Managing the devices remotely

Companies have been managing their IT infrastructure remotely for many years. Today service providers like Wipro have devised offerings that use a similar setup to monitor healthcare devices from remote global command centers.

Remote device management (RDM) includes remote:

- Monitoring of the devices
- Diagnostics for the devices
- Resolution of problems or failures, if possible
- Preventative maintenance
- Product upgrades

The goal, says Jyotirmay, is to “remotely monitor devices before or while a situation is developing that could lead to device problems or failure and then immediately fix it.” This ability “takes field service effectiveness to the next level.”

Jyotirmay estimates remote device management can:

- Reduce on-site field visits by up to 30 percent (a cost savings)
- Achieve a first-time fix rate of up to 20 percent (a plus for customer satisfaction)
- Improve field service engineer productivity by up to 25 percent (another cost savings)

Machine to Machine (M2M) communication plays a key role in RDM, enabling the device to communicate with a central server in real time. For example, software can monitor battery, parts and software performance and analyze real-time data to predict possible device malfunction. A surveillance tool can fix problems proactively or send a technician if the job needs to be done on site. RDM also helps with service scheduling based on parts availability. All of the above reduce field service visits.

The resulting analytics also can improve the productivity of the engineers. Since the data details the failure, the company knows which expert to send to fix it. “They know who is best suited to handle the repairs. This optimizes their logistics,” says Jyotirmay.

The importance of analytics

Analytics has become a big piece in healthcare device monitoring. Jyotirmay points out these machines have been collecting data for over a decade. “We now know how they behave in given scenarios,” says the Wipro expert. “We know what’s working and not working,” he points out.

For example, predictive analytics identify patterns that lead to device failure. The service provider then monitors the familiar failure patterns; if they occur, the software immediately alerts the remote service command center. There, experts initiate actions to prevent the device's failure *before* it happens. The outcome: increased availability and reliability.

Analyzing data from the devices:

- Helps the manufacturer understand the user's experience better
- Improves product reliability through engineering changes
- Boosts customer satisfaction

"We believe they should be looking at this data proactively. It is a strategic asset in their quest for profitability. Insights driven from analytics will help manufactures improve product improvement turnaround time and drive bottom line," observes Jyotirmay.

How to increase revenue

Difficult economic times have caused many healthcare providers to defer new purchases or replacements. One way manufacturers can make up some of this lost sales revenue is to increase their service revenue.

First, they can deploy variable cost structures for service based on the device's age. In addition, they can use RDM to cut costs. RDM allows manufacturers to migrate from an SLA-based approach to performance-based contracts. "We can manage service fulfillment, supply chain needs and revenue-cycle management to deliver business-linked KPIs instead of traditional SLAs," Jyotirmay explains.

This change typically increases sales of these services and enhances customer satisfaction because they can save money, too.

Selecting the right partner

There are few essentials that medical devices manufacturers should consider while partnering with organizations that can deliver RDM solutions to them.

1. **Service lifecycle management.** Apart from regular warranty and post warranty support, manufacturers should discuss service fulfillment and supply chain and revenue cycle management with the solution providers. These are important value adds to the engagement.
2. **Engineering support.** Articulate details of provisioning, monitoring, administering and troubleshooting clearly. These help drive operational excellence in the long run. Maturity of the details provided under this section will reflect the capabilities the service provider uses.

3. **Predictive device analytics.** The ability to make sense out of the multi-year longitudinal data to identify causes of device failure or scope of product improvement is a clear, distinct advantage and a must have for RDM solution providers. Jyotirmay says the goal is to improve the reliability of the device and either add features that improve ROI or remove the ones that don't contribute. The goal of these additions or subtractions is to provide inputs into the research and development department to improve product reliability.

WIPRO has partnered with Axeda, which pioneered internet-based remote monitoring systems in 2000, for delivering RDM. The engagement has matured and successfully implemented M2M communications and management of connected products over the cloud.

Using the Axeda platform, Wipro has set up remote device command centers that mirror its IT infrastructure monitoring units. "We installed these across multiple geographies," Jyotirmay notes.

Concepts like RDM have a short turnaround time from being best practices to becoming a necessity. Medical devices manufacturers have started to realize that RDM is driving cost out of the entire healthcare ecosystem in more ways than one. Rapid adoptions of RDM bundled with proven analytics will help bottom lines sooner than anticipated and has started playing a part in making the world a healthier place.