Quick Wins and Long-Term Results with Remote Monitoring

Manufacturing service professionals are problem-solvers, code-breakers and translators. In order to fix a machine that is unexpectedly offline, under-performing, out-of-range or otherwise anomalous, service technicians need to be fluent in the machine's language. And for industrial equipment, that language is real-time, accurate and accessible data.

Remote monitoring gives your machines a louder and stronger voice. They can tell you what's gone wrong—or what's about to go wrong—so you can fix it before your customer experiences any inefficiencies or downtime. Remote monitoring through an Internet of Things (IoT) platform enables your business to:

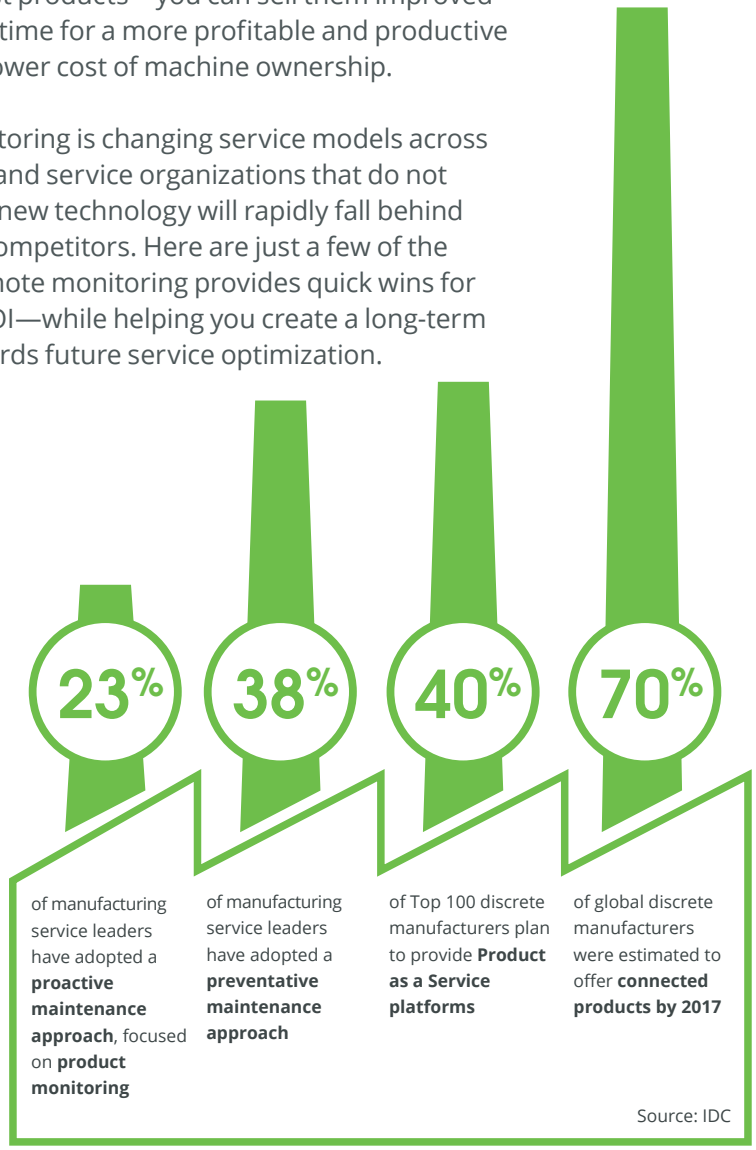
- Improve first-time fix rates (FTFR)
- Decrease mean time-to-repair (MTTR)
- Increase customer satisfaction
- Streamline predictive maintenance
- Create a future-forward servicing model that supports innovation and new revenue streams

> Remote data, which can track performance, failure reasons, and potential fixes, provides service technicians with the answers to solve customer problems faster."

–Aly Pinder Jr., Senior Research Analyst
Service Management, Aberdeen Group

These benefits help turn your service into an invaluable asset for gaining and retaining customers. With today's remote monitoring tools, you can sell your customers on more than just products—you can sell them improved plant floor uptime for a more profitable and productive factory, at a lower cost of machine ownership.

Remote monitoring is changing service models across the industry, and service organizations that do not embrace this new technology will rapidly fall behind more savvy competitors. Here are just a few of the ways that remote monitoring provides quick wins for immediate ROI—while helping you create a long-term strategy towards future service optimization.



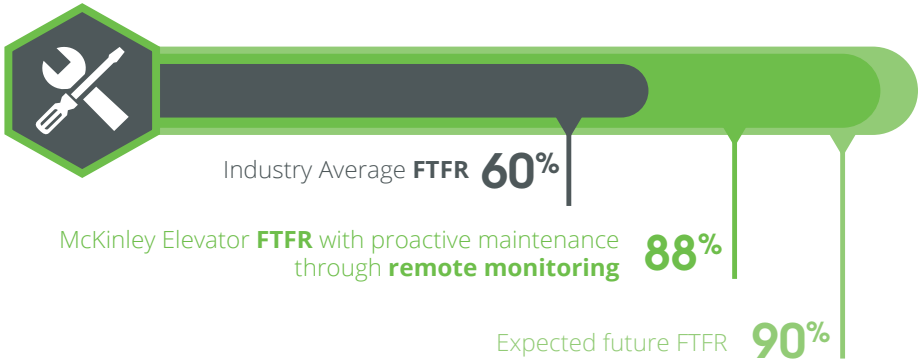
Solving Problems Before They Happen

What It Looks Like

Machines that seamlessly send real-time performance data to service professionals, who can then assess, analyze and act on issues before they become problems. With a centralized remote monitoring platform, service teams can easily leverage the diagnostics and sensor data that they need to become more proactive and less reactive. Technicians are able to detect faults and prevent downtime before it occurs—and often before the customer is aware of any issue. Predictive data also provides a holistic pattern for technicians, so they are better able to understand and monitor usage, performance, target parameters, productivity and more.

Real-World Results

With proactive maintenance through remote monitoring, McKinley Elevator has achieved an 88% FTFR—high above industry average of 60%. McKinley technicians continue to build on the benefits of increased visibility and expect to have a 90% FTFR—or higher—as their remote monitoring evolves.



We are changing the conversation with customers. For organizations, we are talking about data and how we give them insights into their operation. And for homeowners, our insights allow us to deliver a previously unreachable level of safety and service. The conversation is not about price. It is now about extending the life of assets and maximizing uptime."

–Kevin Rusin, McKinley Elevators CFO

Predictive Service

Quick Win: Cost-Savings
Long-Term: Extended Machine Life

Reactive Repairs

Technicians get a call from an unhappy customer whose machine is malfunctioning and causing downtime. The technician makes their repairs and the problem is resolved—with no further analysis of trending issue data or insight into contributing factors that could further impact the machine or other equipment.

Proactive Prevention

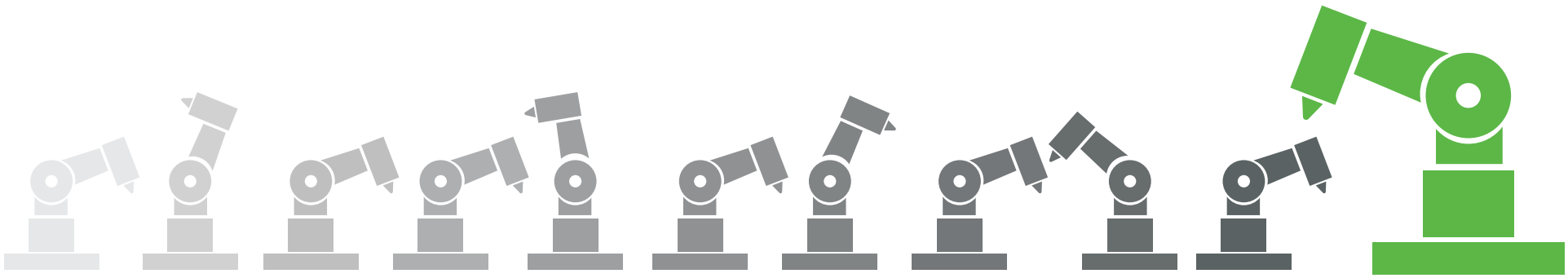
Technicians monitor equipment based on data sent directly from machines and can address malfunctions before they happen. After maintenance, technicians continue to collect data for trend analysis and gain insights into a wider picture of general maintenance and service needs—both across a single customer's toolset and across all deployed equipment.

Excessive Machine Wear-and-Tear

Industrial machinery is built to run in harsh environments, but it's not invincible. Breakage and repair strains can reduce equipment longevity—leading to frustration for customers who want to maximize ROI and productivity.

Extended Machine Life

Catching issues early—or preventing them altogether—means less overall wear-and-tear from breakage and invasive servicing. Equipment runs smoother and lasts longer, so customers gain more ROI—and remain loyal with future contracts when equipment does need to be replaced.



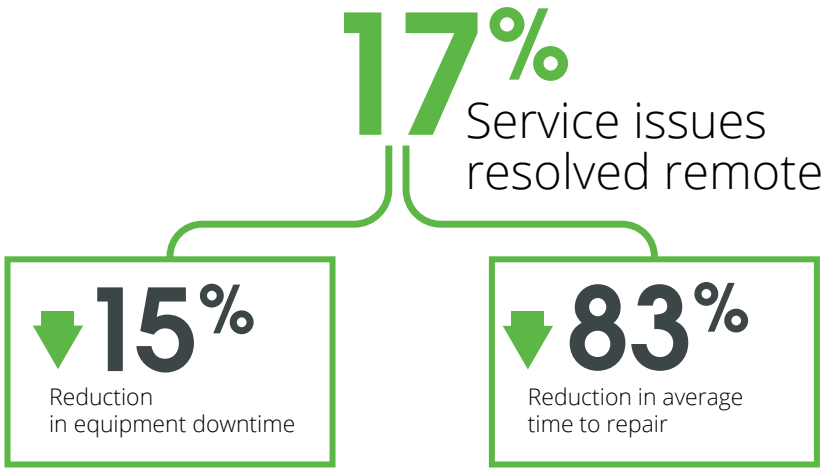
Immediate Solutions to Complex Repairs

What It Looks Like

Technicians always have real-time utilization, performance and failure data at their finger-tips. They receive in-depth product performance information from all deployed machines, so they can go into the field with data-based readiness, instead of relying on customer analysis of machine issues. With real-time data—and the ability to interact with the equipment fully remotely, for some issues—technicians can maximize repair efficiency.

Real-World Results

With more in-depth insights through remote monitoring, Diebold Inc.—a global leader in integrated self-service delivery and security systems and services—resolves 17% of service issues remotely, reducing average time to repair by 83% and decreasing equipment downtime by 15%.



> We needed to provide service more efficiently and cost effectively while delivering higher uptime and productivity to our customers, improving their revenue opportunity. Remote service software would allow us to service machines and respond to issues within minutes as opposed to sending a technician on site every time there is a problem. Finally, when we do need to dispatch a technician, we can eliminate unnecessary downtime by remotely diagnosing the problems while the technician is en route to the ATM."

–Shelly Ewing
Senior Product Manager of Service Product Management
Diebold, Inc

Optimized Field Service

Quick Win: Cost- and Time-Savings
Long-Term: Increased Customer Satisfaction

Reactive, Expensive Field Service

Technicians need to visit the customer's site in order to accurately diagnose and address problems. Often, when a technician arrives on-site, they don't have the exact parts they need because they were given partial or incorrect information about the issue. And if it is a complicated or unexpected repair, the time and money sinks can increase exponentially.

Proactive, Prepared Technicians

Technicians can identify the correct issue, part and solution before they get on-site—saving time and money for you and and for your customers.

Volatile Customer Satisfaction

Technicians and customers struggle to prevent downtime and preempt product failure. Incorrect diagnoses, slow resolution times and low FTFR lead to poor customer satisfaction.

Proven Value and Increased Satisfaction

Technicians come fully prepared, leading to improved FTFR, MTTR and overall customer satisfaction. Customers' uptime rates increase in turn, adding value to your service reputation and securing contract renewals.

Future-Forward Servicing Ecosystem

What It Looks Like

Technicians optimize their remote monitoring processes and gain confidence in role-based customizations. They find creative new solutions to old problems—adapting and improving service in ways that support each unique mission. And as they discover new benefits to remote monitoring and IoT connectivity, they unlock deeper analytics, more profitable contracts and additional revenue streams.

Real-World Results

Building on their remote monitoring solution, Trane—a leading manufacturer of heating, ventilating and air conditioning systems and building management systems—has improved the profitability of their service business by enabling new service levels and higher-tiered service contracts that improve margins. Beyond efficient servicing, Trane now delivers guarantees of 99% uptime and a reduction in client energy costs—both made possible by remote monitoring and IoT data.

> Now we describe our mission not in internally focused terms of product quality, profit goals or market share, but as 'helping our customers make their buildings better for life.' That's the life of the building as well as the lives within the building."

–Dane Taival
Vice President of Building Services and Customer Care
Trane

Made possible by:

- ☑ Remote Monitoring
- ☑ IoT Data

Revenue-Driving Service Model

Quick Win: Increased Profitability
Long-Term: Industry-Leading Reputation

Stagnant, Traditional Service

Service that meets customer needs, but doesn't anticipate how those needs will change and grow with new technology.

Scalable, Customizable Servicing Models

Remote monitoring initiatives open the door for advanced, scalable operational processes that create revenue and are ready for next-gen servicing opportunities.

Steady Service Goals

A servicing department that meets its goals, but doesn't reach beyond those metrics. While meeting customer needs is vital and valuable, keeping steady can really mean falling behind as competitors on-board remote monitoring and IoT technology.

Proven Value and Increased Satisfaction

An advanced service ecosystem that raises the bar for competitors and positions the servicing department as a revenue-driving leader across the company—and even the industry.

ThingWorx is Your Service Differentiator

The ThingWorx Industrial Innovation Platform has helped customers all over the world improve their service initiatives through remote monitoring. Purpose-built with reliable, feature-rich IoT solutions, ThingWorx enables you to quickly optimize your service and operational processes via a single platform with user-friendly development tools and advanced, role-based remote monitoring capabilities.

ThingWorx provides centralized remote connectivity, so service teams can do their best work using an industrial IoT platform that provides the most relevant data for their job. ThingWorx can easily connect to all your assets—no matter the device or location—and requires minimal IT interventions (if any). And ThingWorx is user-friendly and accessible to everyone across your enterprise: from technicians focused on the nitty-gritty, in-depth data to C-Suite professionals who want a higher-level view of department metrics.

ThingWorx Capabilities

Real-time asset monitoring

Critical alert notifications for service issues

Diagnostics to assist with issue resolution

Role-based apps for focused data access

ThingWorx Benefits

Increased equipment uptime

Reduced service visits

Scalable, future-forward service solution

Foundation for new business models

Improved customer satisfaction and contract renewals

Remote monitoring helps service providers optimize field service delivery, reduce costs and improve customer trust and satisfaction. The deeper data integration enabled by ThingWorx remote monitoring provides immediate insights—while creating a foundation for long-term service model improvements built on preventative maintenance.

Faster Service Delivery

50% ▼ **Reduction** in mean time to repair

50% ▼ **Reduction** in case resolution time

Reduced Cost Of Service

15-30% ▼ **Reduction** in truck rolls

15-40% ▼ **Reduction** in unplanned downtime

66% ▼ **Reduction** in service requests

Growth in Service Revenue

12-30% ▲ **Increase** in service contract renewals

33% ▲ **Increase** in customer satisfaction

source: PTC customer data