



Remote Monitoring—Your First Step in IoT Implementation

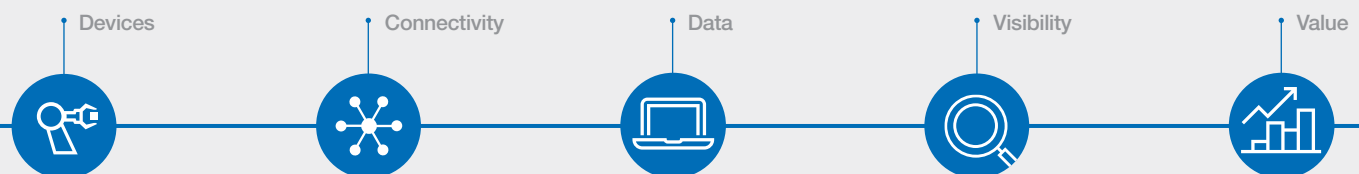
How to capture business value by visualizing, analyzing and optimizing your operation.

Visualization for Facility-wide Insights and Optimization

Process industries are undergoing a major change which many are calling a revolution, one offering virtually unlimited potential to organizations that embrace it.

The foundation of this revolution is digitalization; facilities, data, equipment and people seamlessly interconnected through the Internet of Things

(IoT). And the payoff is real: plant-wide visualization, improvements in efficiency; smarter, faster decision-making; plus insights for developing better products, services and processes. Remote monitoring is the first step in this transformation.



What Is Remote Monitoring?

Remote monitoring is the starting point for gaining visibility into your operations and realizing the benefits of the new industrial revolution. It enables visualizing data from all your assets—everything from pumps, compressors, pipelines, tanks and more, allowing you to use that data to monitor performance, trigger actions, and gather valuable information that can yield bankable business value.

See the Big Picture

Digitalization through the Internet of Things (IoT) will transform industry, helping companies drive strong growth, forge ahead of non-IoT competitors and lay the groundwork for innovative new services and processes. Remote monitoring is step one.

Visualize. Analyze. Optimize.

Assets located nearly anywhere can be monitored remotely—across multiple facilities or sites spanning national or international boundaries.

Remote Monitoring Benefits

Remote monitoring provides both up-front benefits and long-term value, helping you make real improvements to your operation now while building a strong analytics foundation for a broader IoT initiative later.

Up Front

Almost immediately you'll be able to start evaluating and improving operational performance, seeing issues before they become problems, make faster, smarter decisions, reduce downtime, and start cutting costs.

5 Things Remote Monitoring Can Help You Do Right Away

- 1 Quickly identify problems
- 2 Make faster, smarter decisions
- 3 Preempt equipment downtime
- 4 Evaluate and improve performance
- 5 Identify opportunities for cost savings

Long-term

Along with substantial up-front benefits, remote monitoring promises bigger benefits down the road. Simply by adding more advanced analytics to your solution you'll be able to improve productivity and yield rates, optimize workflows, reduce costs, and open new revenue streams through the development of better products, services and processes.

Future-Proof Your Operation

Remote monitoring is a way to quick-start your digital transformation and future-proof your operation. By adding more advanced analytics down the road you'll soon be able to:

- Improve productivity and yield rates
- Optimize systematic workflows
- Reduce overall costs
- Develop better products, services and processes

The Importance of Key Performance Indicators

Data is the lifeblood of digitalization, remote monitoring and the new connected facility. But data alone doesn't add value. It must be visualized within a practical context—in other words, conveyed as information that applies to your operation.

This information is often referred to as Key Performance Indicators (KPIs) and often includes things like temperature, pressure, and chemical levels—or any critical information you need to run your operation.

Typically, KPI's are created to provide insight into critical areas like;

-  Temperatures
-  Pressure
-  Energy usage
-  Operational efficiency
-  Hours of operation
-  Chemical levels or contaminants

Remote monitoring solutions help you transform data into information—KPIs to be exact, then information into insights, and finally insights into action.

Edge Computing—Where Real World Meets Cyber World

Using sensors, and gateways, edge computing facilitates remote monitoring, connecting equipment and shifting processes to the cloud to drive near-real-time visualization and optimization.

Imagine More

Remote monitoring provides a level of visibility and operational control that was once impossible.

What to Look For in a Remote Monitoring Platform

It's easy to see how remote monitoring can deliver big benefits to your operation right away, while opening the door to a much wider, transformative industrial IoT program.

Taking time to evaluate and select the optimal solution based on your unique set of criteria will help you realize immediate benefits and save potential headaches in the future.

A good remote monitoring solution offers:

- Out-of-the-box connectivity
- Plug-and-play quick-start capabilities
- Easy scalability
- Starter applications
- Visually compelling dashboards
- Integration connectors and tools
- Customization without recoding
- API compatibility with other applications
- Secure data transmission

Remote Monitoring For a More Profitable Tomorrow—Starting Today

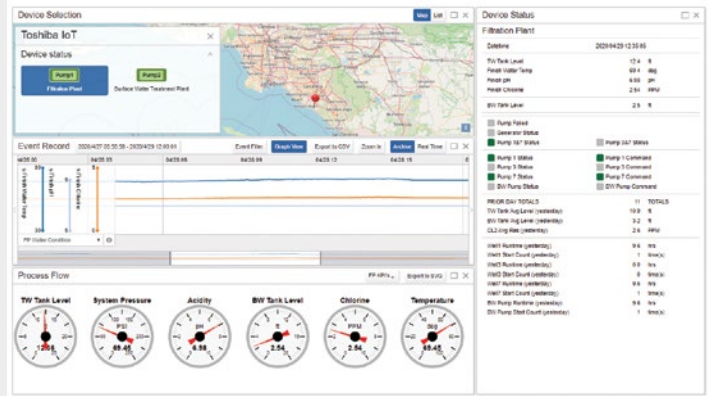
Remote monitoring can deliver rapid value by helping your company gain visibility into your entire operation. Taking that

important first step doesn't have to be hard. Just start small and let your solution grow over time.

Begin by finding a trusted, IoT-savvy partner who can get you up and running right away, but also help you execute a larger strategy and reap the many rewards of having a smart, connected site. Toshiba can help.

Dashboards—Where KPIs Come to Life

Like the dashboard of a car, digital dashboards with dynamic graphics give you critical information based on KPIs. They're the most effective way to visualize device and process status, events, and basic analytics.



Helpful Terms



Internet of Things (IoT)

A new paradigm in which physical devices communicate with each other, and with people, through sensors and other hardware across the internet, and can thus be monitored and controlled remotely.



Key Performance Indicators (KPIs)

Such as temperatures, pressure, turbidity, error codes, alerts or other critical information you need to run your operation more effectively and efficiently.



Digitalization

Translating the performance of industrial assets into digital data that can be quantified, visualized and analyzed using computerized applications.



Gateway

A piece of hardware or software that serves as the connection point between the cloud and Edge devices.



The Cloud

Computing power, data storage and other services available through a network of remote internet-based servers rather than local servers or personal computers.



Edge Computing

An IT architecture that allows data to be processed as close to the source as possible, decreasing lag time (or latency) by minimizing interaction with the cloud. It facilitates remote monitoring, while driving near-real-time visualization and optimization.

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