

Monitoring Critical Assets - in times of a crisis is even more important

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Some questions for you

- Do you have any processes that are critical to your industry business?
- How can you ensure the continuity and safety of your operations from afar?
- How can you reduce travel to your facilities if for example you shall avoid leaving home?

Motivation

Currently, a pandemic is dramatically changing not only our lives, but also the economy including manufacturing industry. Whole countries are going into lockdown for some time, or strong rules for hygienic actions must be applied inside facilities so that the local authorities allow operations to continue or re-establish production. Travel is restricted to a minimum.

At the same time, beside hospitals other critical industries (pharma and food of course, but also utilities and energy) must be even more stable and stay 100% in operation without any kind of defect to keep the whole critical infrastructure system running.

Zero defect manufacturing stands for business continuity

But how can you do that if your job is to maintain the critical infrastructure for your organization? How can you reduce your travel to your facilities? How can you ensure the continuity and safety of your operations from afar? Questions that are also relevant in other day-to-day situations in a global world with distributed processes and responsibilities.

There are possibilities in helping this out using the technology of the Internet of Things, integration, and transformation in an industrial environment. Especially manufacturing industries, if used properly, show a raising potential where ensuring business continuity simply also means having zero defect production processes.

Sensors are constantly available

You or your customers must react on different circumstances and thus you must support and protect people that are responsible for sensitive assets, but they might not be able to access them physically for several reasons. For example, suppliers might not be allowed to do their work as usual, but you depend on them to keep your production line operating at an expected quality level.

So, it would be possible to solve the problem of getting for example, critical liquids such as oil or fluid solvents, to customers by using IoT to monitor the fill level of the bottles. With real-time data on thousands of tanks and bottles deployed at the customer, alerts can be received on usage conditions as well as consumption. This allows automatic replenishment policies, ensuring the businesses do not run out.

By using IoT sensors on your assets you can monitor your equipment safely and remotely from anywhere. No more on-site visits. No disruption to your business.

With remote monitoring of IoT sensors, you can for example check:

- Temperature: Ensure the temperature of key process equipment—such as steam generators, industrial heaters and freezers—is monitored closely to avoid breakdown. Get alerts to potential issues based on current and historical trends to trigger automated responses that need no human intervention
- Pressure: Whether it's steam for equipment sterilization or compressed air for pneumatic processes, early warning of pressure drops allows you to avoid catastrophic consequences. Know when there's a potential problem to act immediately. Be there without "being there"
- Fill level: It is essential to know the amount of water, oil, or chemicals in local tanks used by emergency units, in back-up generators or for local fuel supplies for you to ensure efficient and timely replenishment. Avoid critical levels and expensive last-minute call outs. Be out of range, but never out of touch

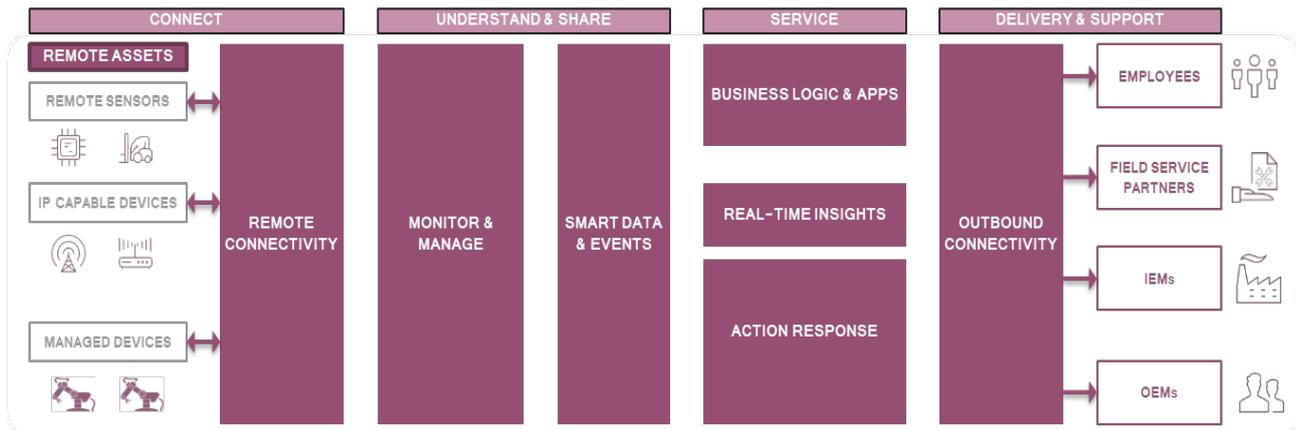
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- **Vibration:** Vibration is an essential indicator of the operational performance of motors, pumps and fans. With continuous real-time monitoring, you'll know the instant your system stops running smoothly, ensuring that on-site visits are only conducted when necessary. This is the first step in predictive maintenance, which not only ensures your equipment is running properly, but also ensures staff need not make unnecessary visits to check equipment

Remote IoT monitoring can protect your assets while staying safe and ensure zero defect business continuity even in difficult and challenging circumstances.

Blueprint for Remote Assets

The image below shows a typical schematic of the data and information flow between IoT devices and end points



What will ZDMP achieve

The Data Acquisition and IIoT component of ZDMP will give the natural contact point for leveraging all remote assets to Industry 4.0 capabilities. Independent of using intranet or internet as infrastructure, real-time data streams will be available in a managed environment allowing you also to share a business model with you own B2B customers. Typical value propositions envisaged include the following which will be explored in many of ZDMP Pilots and case studies.

- **Predictive Maintenance by anomaly detection**
 - Remotely manage assets at the edge
 - Lowered manufacturing costs
 - Better, faster decision-making
- **Remote Asset Condition Monitoring**
 - Decrease Service/Maintenance Costs
 - Increase Revenue & Margin
 - Increase Customer Value & Loyalty
- **Remote Asset MANAGEMENT**
 - Contradicting objectives are possible
 - Value is divided and negotiated between Industrial Equipment Manufacturers (IEM's) & Original Equipment Manufacturers (OEM's)
 - Data and performance discussion are time based

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