Improve availability, safety, and reliability across the enterprise.

Plantweb™ Optics
Prioritize and deliver relevant asset health information
to the right people at the right time.

EMERSON™

When your data exists in silos, your teams will work that way as well.

One challenge all industries have in common: data silos. Different areas or departments in the plant looking at different condition or process indicators to set their own priorities. Sometimes they are focused on the same problem, but do not have the complete information to quickly identify the root cause of the problem. And that's just within one facility - the same silos can exist across the enterprise. How will the different areas - and locations - in your company share in achieving business goals when they aren't sharing the same information?

Production capacity is lost as much as 5% every year as a result of unplanned shutdowns.
– *Asdza Nadleehe, ''Engineering & Maintenance: Prevention Is Better Than Cure,'' Oil & Gas IQ, October 2011.*

5%
PRODUCTION
CAPACITY LOST

When asked to describe their attitude towards maintenance, 39% of respondents said "a profit center for delivering greater capacity." Another 39% said "a cost center needed to keep equipment running."
– *Plant Engineering Maintenance Report, April 2016.*

Which is it?
39% **39%**
COST   PROFIT

Breaking down data silos is more than an IT task – it's an exercise in building a more collaborative culture.
– *Walter Scott, Forbes Technology Council Community Voice, Forbes, November 2018.*
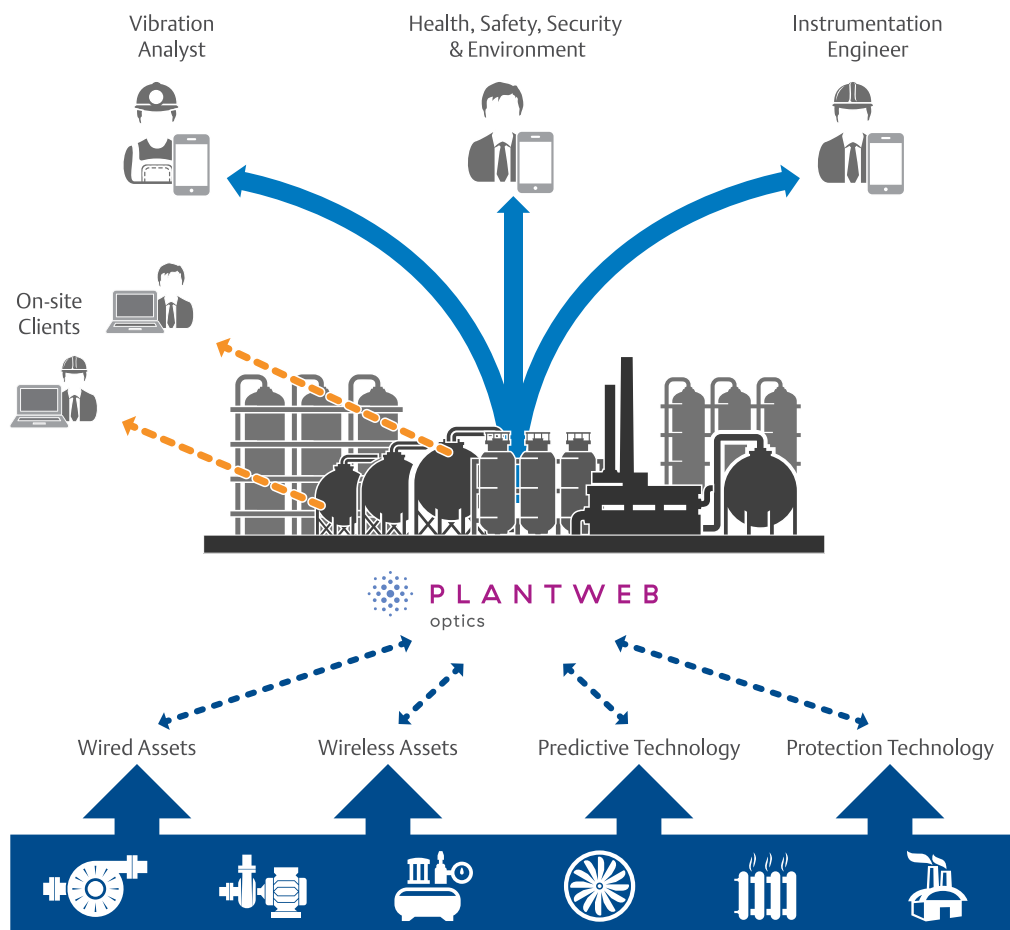
What if you had all the data from your assets and could quickly identify and focus on the issues that impact asset availability? What if you could share the right information with the right people at the right time?

Plantweb Optics creates actionable information in a collaborative work environment.

New solutions are required to access the information needed to effectively manage assets in the facility. Data from predictive intelligence applications and analytical tools are aggregated to create a holistic picture of asset health. Automatic asset health scores are a straightforward way to understand what is happening at a glance. Communication tools allow personnel to collaborate on developing production issues while accessing data necessary to drive decisions. Making this information available anytime and from anywhere enables personnel to prevent potential failures.

Emerson's Plantweb digital ecosystem is a scalable and secure portfolio of transformational technologies, software, and services that provide relevant personnel with enhanced insight to enable actions that drive operational excellence.

Plantweb Optics asset performance platform allows users to manage asset health across the enterprise. Plantweb Optics connects the data from both Emerson applications and 3rd parties into asset-centric information to deliver persona-based alerts and KPIs for production assets. Data from sources such as AMS Machinery Manager, AMS Device Manager, Plantweb™ Insight, and more can be used to drive corrective actions by integrating with CMMS and creating a proactive workflow. Building the data into existing workflow processes is critical to driving a more proactive operation.

Vibration Analyst

Health, Safety, Security & Environment

Instrumentation Engineer

On-site Clients

PLANTWEB optics

Wired Assets   Wireless Assets   Predictive Technology   Protection Technology

Plantweb Optics Augmented Reality provides real-time asset health out in the field and connects on-site personnel to remote experts.

Manage assets with better access to data.

When your critical data isn't accessible, you can't use it make decisions. Plantweb Optics increases visibility to data traditionally stuck in silos. Better data access means you can make data-driven decisions to prioritize your work.

Connect to remote experts to minimize downtime.

When something goes wrong on site, every hour of downtime is critical. With live Remote Assistance, there is no need to wait for an expert to travel to site as they can guide field workers throughout the whole troubleshooting process. The field worker and the remote expert can collaborate visually using Plantweb Optics Augmented Reality to efficiently resolve issues.

Make the right call at exactly the right time.

When you aren't able to accurately predict equipment failures, you lose profits, production, even confidence in your maintenance program. When you have insight into the production assets in your facility, you can make the real-time, informed decisions necessary to maximize availability and reduce unexpected interruptions. Plantweb Optics uses automatic asset health scores to bring your attention to the assets that need it most.

When you keep a close eye on critical assets, you improve reliability.

At any given time, there is something going on in your assets that can impact whether or not your plant achieves production goals. And the person who needs to know what is happening is not on site – in fact, they may always work from a different location. With Plantweb Optics, the information everyone needs is available anywhere. Advanced, accurate assessments of developing problems can be determined. Actions can be taken immediately – or when it is convenient – based on the problem severity. With Plantweb Optics, you'll move easily from data to information to actions that improve your plant reliability.

What's your challenge?

Technical professionals may be spending as much as 60 percent of their time managing data before they are able to focus on the more critical, "value-added" work such as analysis and decision-making.
– Jon Krome, John Matson, and Greg Mitchell. "Connecting the dots," Exploration & Production, December 2006.
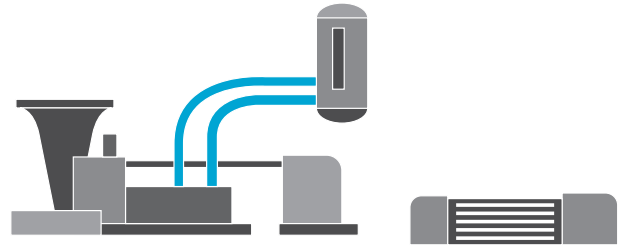
What's your opportunity?

With Plantweb Optics, there is a measurable shift away from managing data to acting on information. Greater visibility to more assets in the plant doesn't have to mean more data to sift through – Plantweb Optics focuses your attention on the assets that require it most.
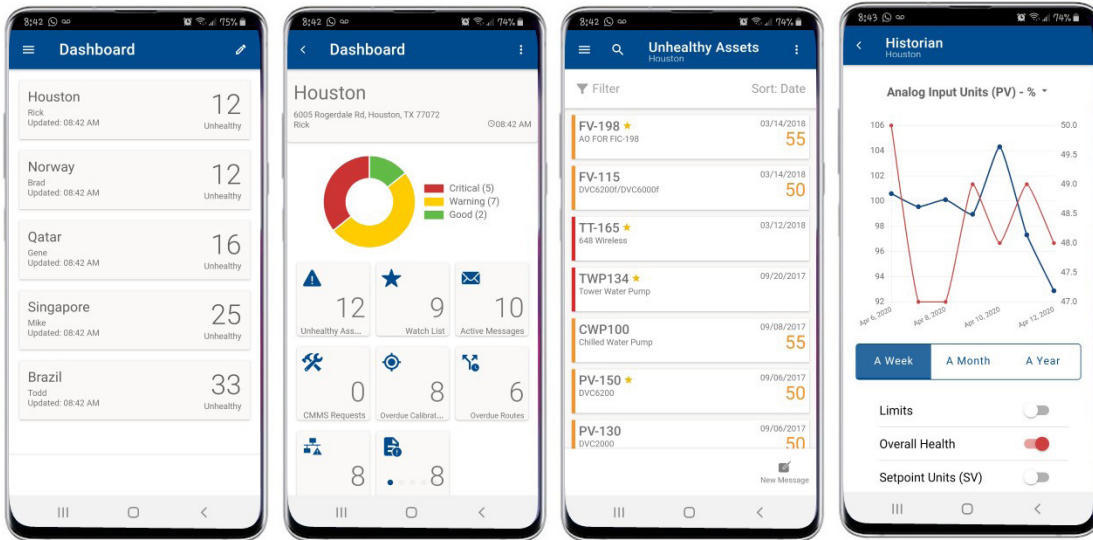
Holistic, cyber-secure view of assets

Secure and flexible architecture allows installation on different layers of your network without compromising security.
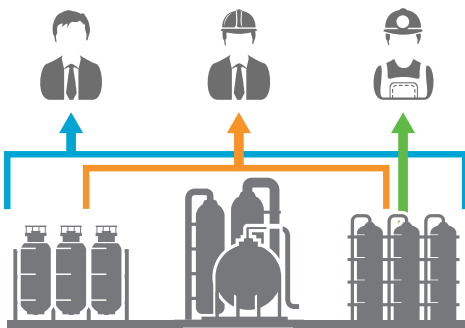
The asset-centric approach vs. technology approach represents your assets the same way they exist in the field, providing a familiar, holistic view of plant assets.

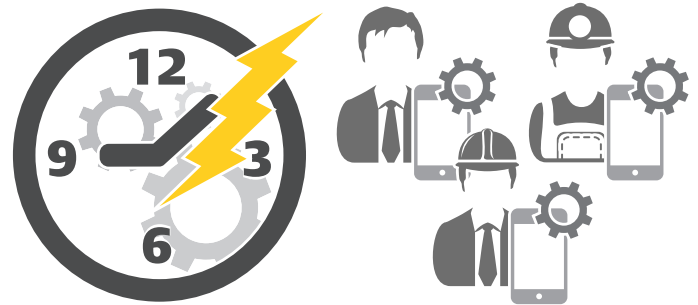## Remotely manage assets with Plantweb Optics

Remotely monitor your assets and be notified when an event occurs. Data at your fingertips can allow you to be more proactive and always know the status of your critical assets.
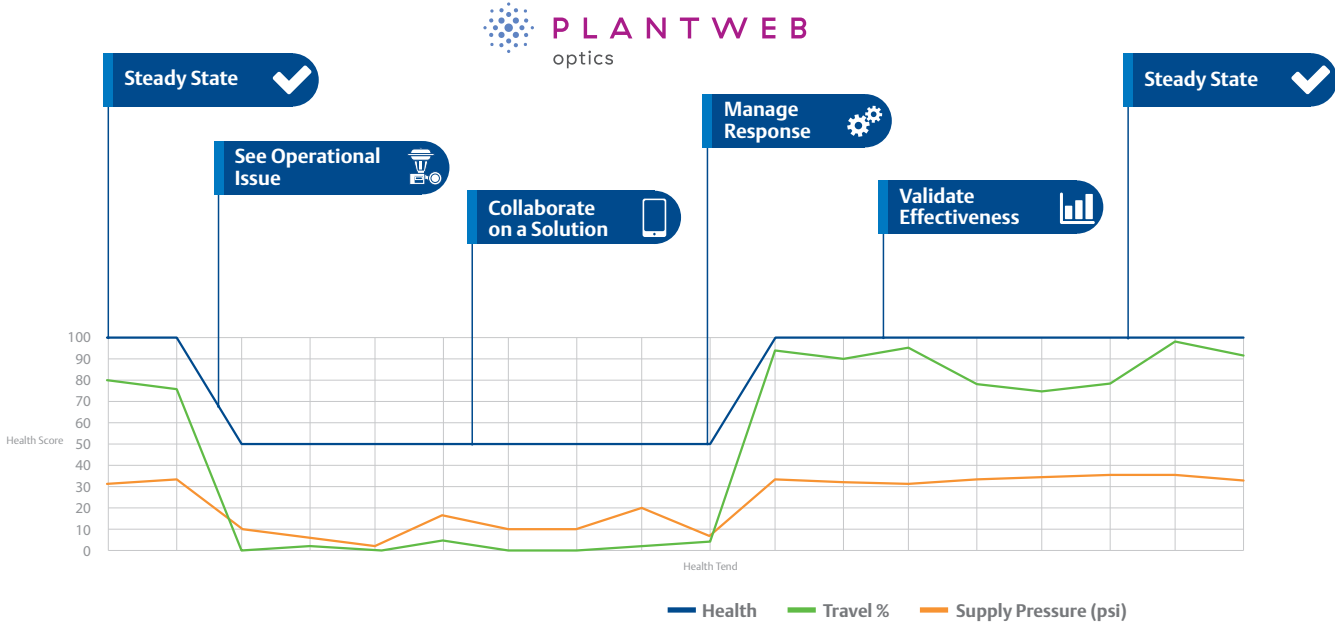
Communicate with clarity

Responsibility determines information access so each person sees only applicable data.

Alerts on mobile devices keep everyone connected in real time.

Implement a closed-loop workflow across your enterprise.

Create and monitor work requests in SAP or IBM Maximo without having to navigate to a separate application. Beyond work order management, users can further validate effectiveness of actions taken by tracking the health score in Plantweb Optics. For example, here is the health trend of what might be a valve in your plant. The blue line is the health trend, and the health score of 100 on the far left indicates a steady state. When the health starts to deteriorate, all relevant users are notified of the situation and can collaborate in real time to arrive at a decision no matter where they are. They manage the response by raising a work request in their CMMS. Plantweb Optics Augmented Reality and remote assistance can be leveraged to successfully complete the work needed, even in cases where expertise may not be available on site. Once the work is completed, they validate the health of the asset to confirm the effectiveness. By centralizing the digital framework around Plantweb Optics, they closed the work loop and improved reliability within the plant.

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Steady State ✔

See Operational Issue

Collaborate on a Solution

Manage Response

Validate Effectiveness

Steady State ✔

Health Score

100
90
80
70
60
50
40
30
20
10
0

Health Tend

■ Health   ■ Travel %   ■ Supply Pressure (psi)

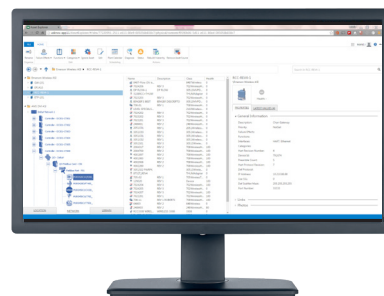| Intuitive interface	Common hierarchy

Similar visibility to asset health on all devices

The Plantweb Optics Asset View provides a KPI dashboard view of monitored assets and alerts you to developing issues on the assets you define as critical to your production. The interface is similar across desktop/tablet/smart phone views for ease of use, while the mobile app provides a multi-site view for easy review of alerts across the enterprise. Drill down on individual assets to understand why assets have degrading health scores.

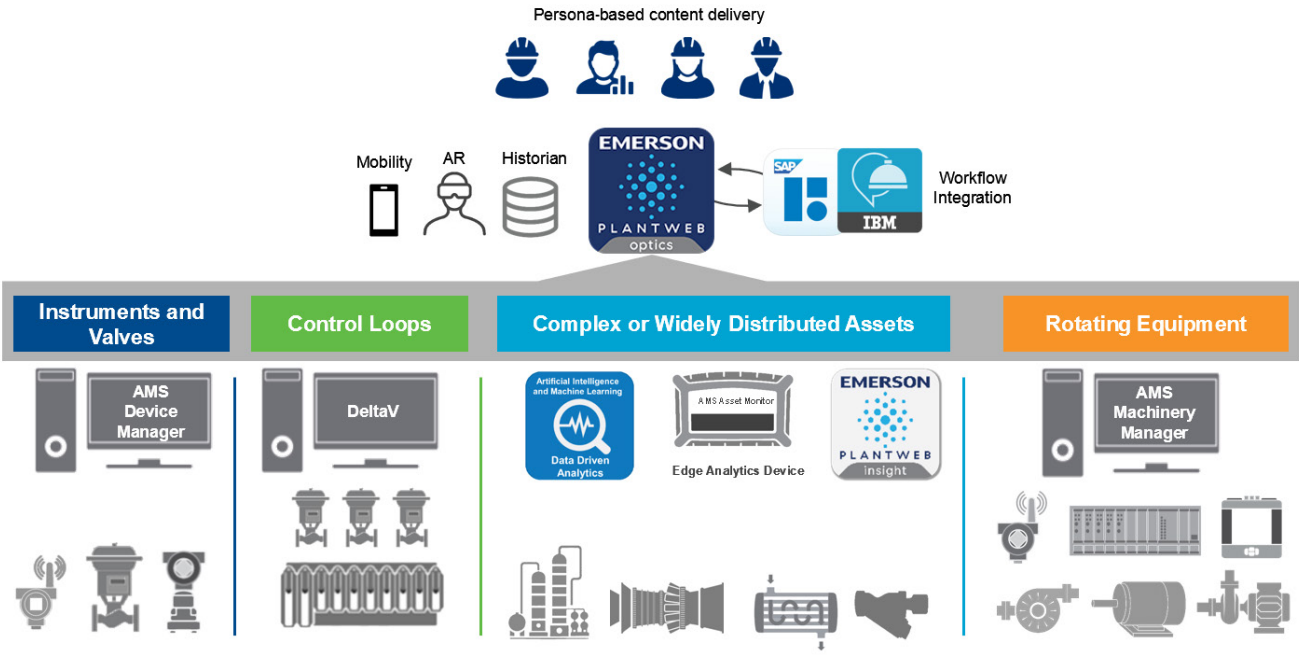### Asset-centric information in a common tree-type structure

The Asset Explorer application allows you to quickly define assets for the site and the roles/responsibilities across the enterprise. Asset Explorer periodically polls the network architecture to discover wired and wireless assets added and align the Plantweb Optics hierarchy with your CMMS or build an asset-centric structure that will allow users to quickly navigate the system.

View your assets through a single pane of glass.

In most industries, processes are monitored using some form of automation system like DCS or PLC. A parallel world exists for reliability engineers monitoring their rotating assets and using vibration data to understand the health of those assets. There may also be plant managers or shift engineers looking for more analytics specific to asset classes, process performance or energy management. Three different types of personnel working with different but equally important data. They may each know when there is a problem, but not the root cause of the problem.

Plantweb Optics centralizes the data for a holistic view of asset health, and then delivers information to each individual in the context of their specific role in the plant.

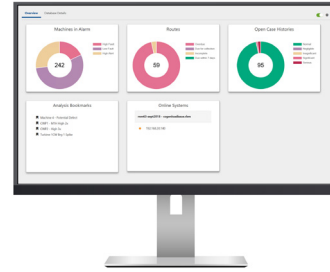|	
Monitor instrument and valve health	**Diagnose rotating equipment problems**

Device Health Management

Make informed decisions on field device maintenance. Manage critical valves and address problems before they impact operations. AMS Device Manager is a window into the health of valves and intelligent field devices.

Machinery Health Management

Create a comprehensive view of machinery health across mechanical assets. AMS Machinery Manager integrates multiple predictive maintenance techniques for complete diagnostics on your rotating equipment.

Expanded visibility into asset health	**Create closed-loop workflows**

Plantweb Optics Augmented Reality

Plantweb Optics Augmented Reality (AR) helps field workers improve productivity in the field, make better decisions for maintenance operations, and collaborate in real-time with subject matter experts.
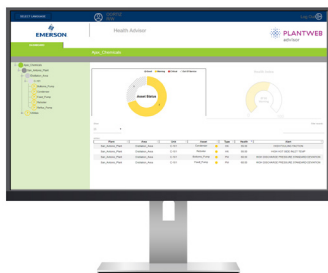
CMMS Integration

Reduce the effort required to plan your work. With CMMS integration, you can submit work requests automatically from Plantweb Optics and create a closed loop of workflow across the enterprise.

Preconfigured applications for fast results	**Add expertise to your team**

Platnweb Optics Analytics

Increase reliability, efficiency and safety of critical production assets. Asset templates are pre-built delivering critical information about equipment health and efficiency, including energy consumption and emissions.
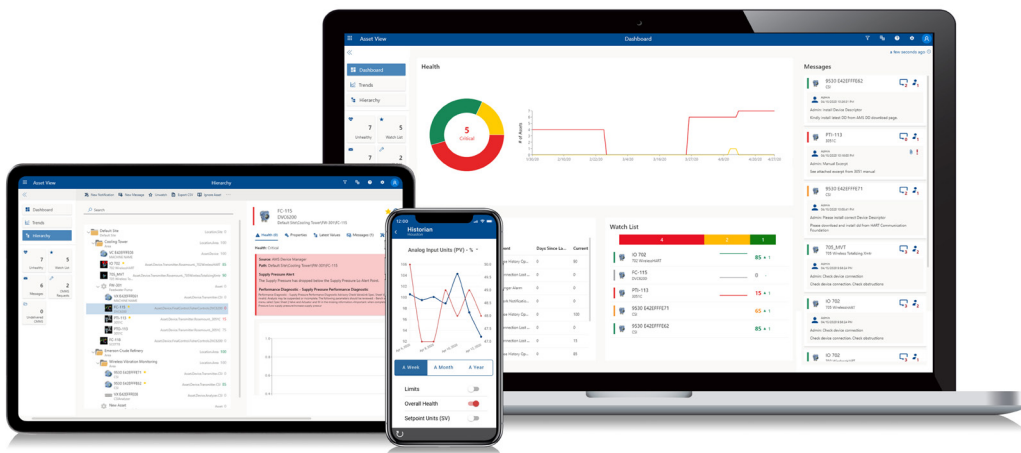
Personas, Notifications, Filtering

When you need more heartbeats to solve a problem - or just get the analysis done - add expertise to your team even from remote locations. These experts can provide analysis directly to Plantweb Optics, ensuring everything you need to know is in a single location.

Focus your attention on the assets that need it most with Emerson's Plantweb Optics.

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