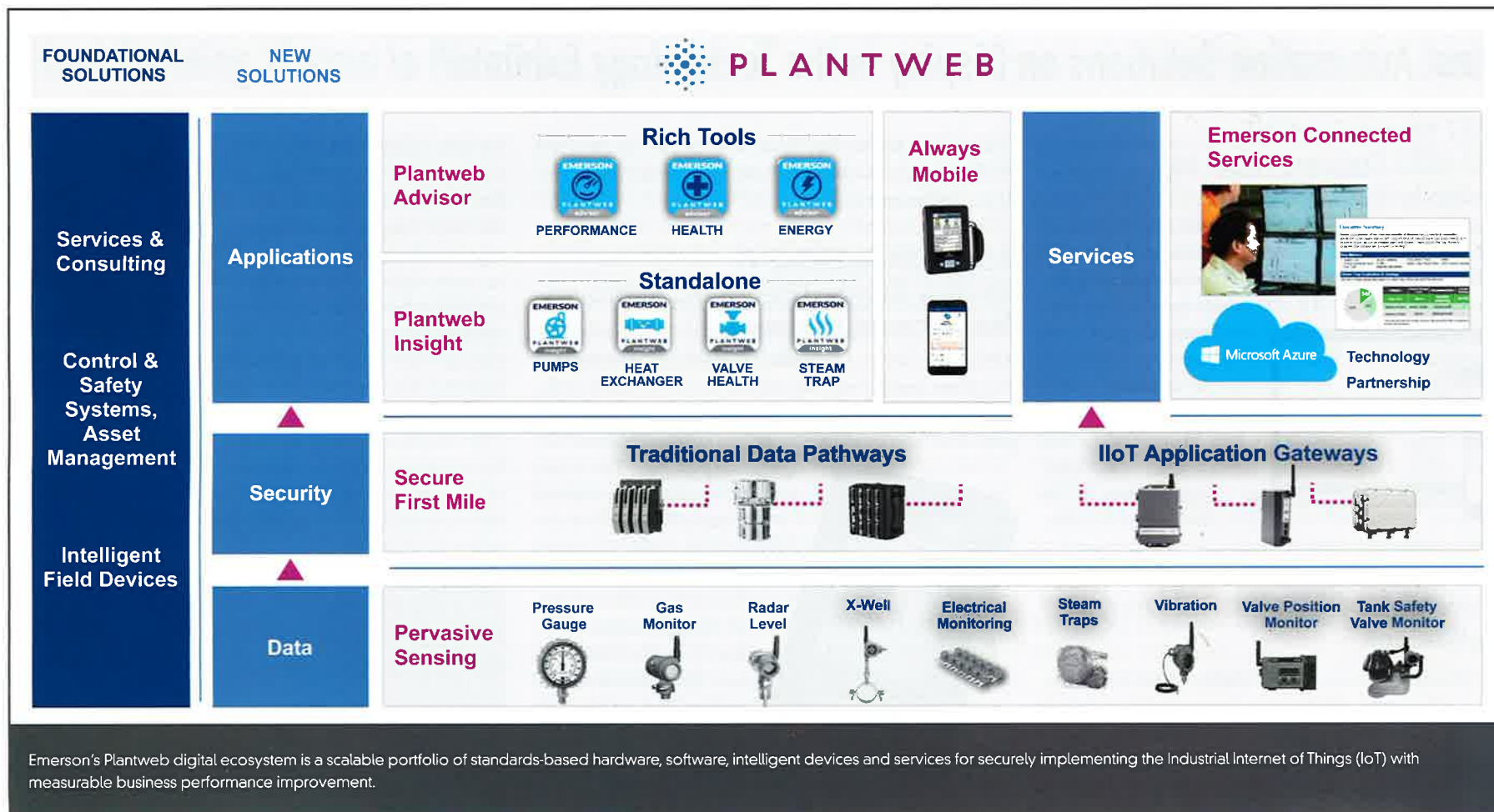Emerson's Plantweb digital ecosystem is a scalable portfolio of standards-based hardware, software, intelligent devices and services for securely implementing the Industrial Internet of Things (IoT) with measurable business performance improvement.

PLANTWEB INSIGHT

Low-barrier Entry to IIoT Analytics by Dave Perkon

Emerson's Plantweb Insight applications build on the company's Pervasive Sensing and Secure First Mile offerings, and help users instantly make sense of plant data to drive overall enterprise profitability. "It's a single, lightweight, easy-to-install web-based platform that automatically and strategically interprets plant data through a scalable suite of applications," said Melissa Stiegler, director, wireless product management, Emerson Automation Solutions, in a Tuesday morning press release at the Emerson Global Users Exchange in Austin, Texas.

"About 18 months ago I spent time talking with customers about what wireless product they wanted Emerson to develop next," said Stiegler. "What I heard repeatedly was not that they wanted a new product, but that they wanted help with their data. They had tons and tons of it, but didn't know what to do with it, no one to look at it."

From this need sprang Plantweb Insight applications, which are designed to support customers' operational excellence programs in key performance areas such as reliability, safety, production, and energy and emissions management.

Using Plantweb Insight, users can improve asset reliability and energy usage by identifying abnormal situations and inefficiencies, recognizing optimum maintenance times, and tracking asset health to identify and prevent failures before they occur. They also can avoid potential safety incidents and ensure regulatory compliance, reducing fines and environmental impact though the real-time identification of leaks and other hazards.

The power of Plantweb Insight resides in its collection of easy-to-deploy applications, each containing the embedded domain expertise and analytics that enable existing resources to immediately identify and resolve asset issues that historically were addressed by periodic, manual rounds or unexpected failures. These applications are designed to help users realize the most from Pervasive Sensing strategies at their sites.

More than a dozen total applications are scheduled for release, with each dedicated to a single, specific asset class. The first three applications are available now and future applications will be released at a rate of two per quarter.

Steam Trap Insight instantly identifies steam trap failures using wireless acoustic transmitters to remotely monitor steam traps, even in hard-to-reach locations. Up-to-the minute visibility of all steam traps allows manual rounds to be eliminated and dramatically reduces energy waste.

Pump Insight provides predictive health monitoring aimed at identifying and diagnosing the underlying problems that lead to pump deterioration and failure. Through monitoring and analyzation of temperature, vibration, efficiency, pressure and deviation data, wireless, real-time insight into cavitation and pump health is generated and visually provided to plant personnel.

Pressure Gauge Insight works in tandem with Emerson's Rosemount Wireless Pressure Gauge, this application visually delivers safer and more reliable readings, enabling remote collection of field data as frequently as once per minute. Accurate, wireless readings keep operators updated on changing field conditions remotely – reducing manual operator rounds and improving safety by keeping personnel out of hazardous areas and safeguarding against catastrophic events.

PLANTWEB ADVISOR

Suite Drives Operational Certainty By Paul Studebaker

Leveraging the Industrial Internet of Things (IIoT) begins with generating continuous, in-depth, quality data on a plant's assets. However, transforming that vast amount of data into actionable information requires powerful analytics that provide plant personnel with the specific information they need to ensure reliability and efficiency.

"In a typical organization, data flows are very complex due to complex work environments, silos and fragmented technologies," said Phil Niccolls, vice president, industry marketing and applications, Emerson Automation Solutions, to press conference attendees Tuesday morning at Emerson Global Users Exchange this week in Austin, Texas. "It comes down to a lack of IT and OT convergence. Plantweb Advisor is our solution to help customers bring information and decision-makers together."

Plantweb Advisor Suite is a key component of Emerson's Plantweb digital ecosystem (see graphic, p3). Niccolls announced the addition of two new applications, Health Advisor and Performance Advisor, to the previously released Energy Advisor. All leverage the industry-standard OSIsoft Pi System's highly scalable, open data infrastructure that captures and shapes data generated by equipment.

Empowering a plant's reliability, process and energy experts with critical information can improve or restore a plant's profitability to industry-leading levels. (Top Quartile performers can recover two weeks of available production per year as compared to their average industry peers). Estimates show that 47 percent of unplanned outages are due to equipment failure, and the cost of repairing a failed asset is 50 percent higher than addressing the problem prior to failure. Further compounding the issue, the petrochemical industries are experiencing up to a 40 percent loss in energy due to various inefficiencies.

Plantweb Advisor Suite is designed to help plants achieve significant improvement across these areas. For example, a 250,000 barrel-per-day refinery using the suite can recover as much as $15 million a year in maintenance savings and new rev-

"In a typical organization, data flows are very complex due to complex work environments, silos and fragmented technologies. It comes down to a lack of IT and OT convergence." Emerson's Phil Niccolls explained how the company's new Plantweb Advisor Suite can help advance Operational Certainty for end users.

enue, specifically resulting from 1.2 percent capacity recovery, 14 percent maintenance reduction, and 10 percent energy recovery.

Health Advisor improves asset reliability, increases process availability and helps reduce safety and environmental risks by providing continuous diagnostics and equipment alerts prior to the occurrence of unplanned shutdowns or slowdowns. This information enables plant personnel to take corrective action and avoid production losses, reactive maintenance and environment or safety incidents.

Performance Advisor is a real-time application that calculates equipment performance, enabling plant operators to run processes more efficiently, track operating performance against targets, schedule maintenance activities and determine the root cause of production asset inefficiencies.

Energy Advisor is a real-time Energy Management Information System (EMIS) that automates the process of mapping and managing energy consumption as it is being consumed. Real-time alerts, dashboards and emails signal when energy consumption is higher than expected so that actions may be taken to reduce energy costs.