MEMBERSHIP	TRAINING & CERTIFICATIONS	STANDARDS & PUBLICATIONS	CONFERENCES & EVENTS	NEWS & PRESS RELEASES	RESOURCES	TECHNICAL TOPICS	PROFESSIONAL DEVELOPMENT	STORE

Unprecedented opportunity: Finding the ROI in IIoT

By Mike Train

Now more than ever, manufacturers are under pressure to do more with less to improve financial results. Faced with a global contraction in capital spending, manufacturers in the oil and gas, petrochemical, refining, and other process industries need to boost profitability from existing assets. The good news is that not only is it possible, but that the current opportunity is unprecedented in manufacturing history.

Here is why: Every year process manufacturers lose a whopping $1 trillion due to inefficient operations, according to Refining and Petrochemical Benchmarks, API, Solomon, the Occupational Safety and Health Administration, IHS Markit, and company reports. Ensuring profitability begins with finding a way to improve these operations and recapture those losses. Yet many otherwise successful manufacturers lack the confidence to move away from decades-old work practices. They are uncertain about which approaches will yield the greatest operational improvements.

The answer lies in embracing the Industrial Internet of Things (IIoT). Despite the hype, it is true; the right IIoT strategy can dramatically improve a plant's operations. But to many in industry, the IIoT is only a promise. A recent *IndustryWeek* survey reveals that 75 percent of 500 senior industry executives acknowledge the need for IIoT investment, but only 5 percent of those same companies have an in-depth IIoT strategy.

What is holding them back? Many do not understand the business case for investment—which technology investments will move the financial performance needle. And of course, with greater connectivity comes greater security risks for plants to keep data safeguarded. That is why we have been focused on innovation using advanced encryption, private company cloud environments, and advanced new routers with physical, one-way data paths to transform data management practices on site and in the cloud.

With robust security measures in place to protect data and mitigate risk, manufacturers can chart a path to operational excellence through IIoT. The return on this IIoT investment is measurable and significant. With the technology, tools, and a culture willing to adapt, companies can generate measurable business results among four areas: production, reliability, safety, and energy and emissions. Within these areas, per a recent benchmark analysis of the industry's top quartile performers compared to the industry average, top performers experience:

- two weeks of extra production availability
- operating costs 20 percent lower
- three times fewer safety incidents
- CO_2 emissions 30 percent lower and a third as much spending on energy

It is proof that companies that want to boost profitability to top quartile levels need to generate real gains in these key areas and use IIoT strategies to get there. But you need to know how to get there. All signs point to automation. Automation empowers us with new ways to solve problems by leveraging expertise across an organization: local experts are more efficient, centralized experts can manage fleets of assets across the globe, and third-party experts can safely and cost effectively manage critical assets outside of a company's core competency.

And this does not have to be a "big bang" infrastructure investment or organizational overhaul. Businesses can invest in small pilots, often less than $50,000, ensure return on investment (ROI), and take the next step, knowing that each investment can be leveraged toward an organizational top-quartile program. This is why automation is the highest impact investment organizations can make for ROI on their operational excellence initiatives.

For example, a petrochemical company with hundreds of steam traps employed an IIoT strategy that reduced steam consumption by 7 percent. It uses wireless acoustic steam trap transmitters to monitor noise and temperature, then transfers the data to a Microsoft Azure cloud virtual server, so the analytics software can analyze the data and generate alerts. Then, remote access monitoring by experts provides actionable reports to maintenance for repairing or replacing failed steam traps long before they fail.

Operational excellence begins with pinpointing the causes of poor performance, prioritizing actions that can yield the greatest improvement, and establishing a scalable work plan. It also takes management leadership to embrace and deploy the right technology and solutions, a commitment to break down silos and encourage expert collaboration across the enterprise, and courage to drive a culture where it is safe to advocate change. When this happens, process manufacturers experience a return of greater productivity, less downtime, safer operations, and reduced energy costs. The once-muddled path to getting the most from the IIoT becomes clear, and the journey to

About the Author

Mike Train is executive president of Emerson Automation Solutions. He is responsible for leading strategies and innovations to help customers enhance operations and achieve top quartile performance. Before his current role, Train was president of global sales for Emerson Process Management, overseeing five regional organizations focused on sales, service, support, and customer satisfaction.

More Executive Corner

Andrew Hird: IIoT viewpoint

Paul Galeski: Training through mentoring—bridging the generation gap

Bill Lydon: Integrated cybersecurity: A cornerstone of IIoT

Hechtman: Practical Internet of Things for industry

See all Executive Corner Articles

Reader Feedback

We want to hear from you! Please send us your comments and questions about this topic to InTechmagazine@isa.org.

becoming a top industry performer begins. Ultimately, harnessing the power of the IIoT produces measurable and sustainable benefits that improve a company's bottom line and justify its future direction. With the right roadmap, IIoT's promise can be fulfilled.