

Turn industrial automation into the profit engine of your Business

EcoStruxure Foxboro DCS

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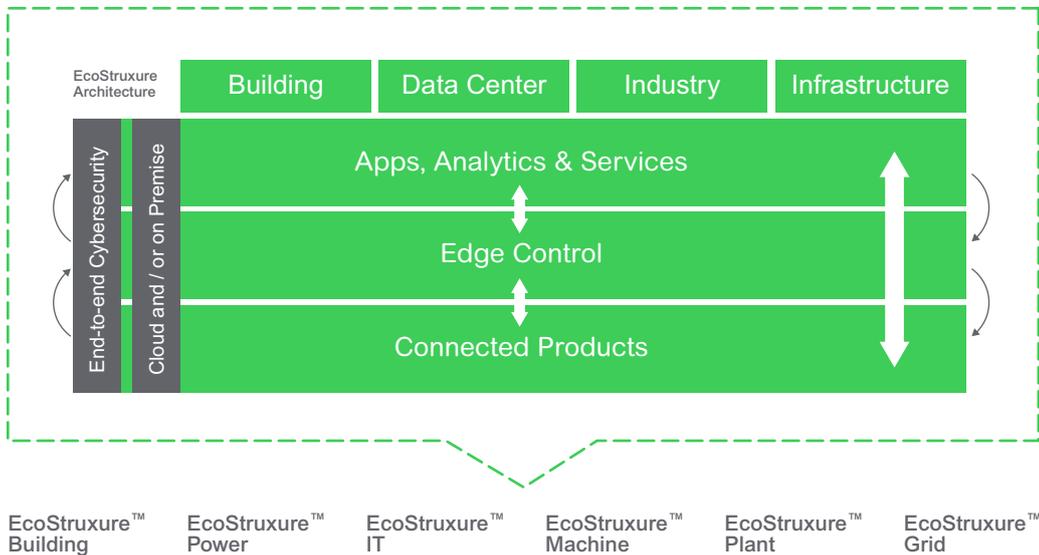
EcoStruxure™

Innovation At Every Level

IoT-enabled system architecture and platform that drives operational and energy efficiency

EcoStruxure™ by Schneider Electric is our open, interoperable, IoT-enabled system architecture and platform. EcoStruxure delivers enhanced value around safety, reliability, efficiency, sustainability, and connectivity for our customers. We leverage technologies in IoT, mobility, sensing, cloud, analytics, and cybersecurity to deliver Innovation at Every Level. This includes Connected Products, Edge Control, and Apps, Analytics & Services, Analytics & Services. EcoStruxure has been deployed in 450,000+ installations, with the support of 9,000 system integrators, connecting over 1 billion devices.

One EcoStruxure architecture, serving 4 End Markets with 6 Domains of Expertise



Connected Products

The Internet of Things starts with the best things. Our IoT-enabled best-in-class connected products include drives, sensors, field devices, and more. Devices with embedded intelligence drive better decision-making throughout operations.

Edge Control

Mission-critical scenarios can be unpredictable, so control of devices at the edge of the IoT network is a must. This essential capability provides real-time solutions that enable local control at the edge, protecting safety and uptime.

Apps, Analytics & Services

Interoperability is imperative to supporting the diverse hardware and systems in building, data center, industry, and grid environments. EcoStruxure enables a breadth of agnostic Applications, Analytics & Services for seamless enterprise integration.

Find out more about EcoStruxure™

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Introduction

For industrial plants to make significant operational profitability improvements (OPIs), merely upgrading or installing a new automation system is not enough. Utilizing effective processes designed to measure and improve operational profitability in real time is essential to the success of any automation and control project. Without said processes, the desired results are difficult to achieve and frequently yield no improvement at all.

Converting the DCS to a Profit Engine

The EcoStruxure™ Foxboro DCS is the only system in the marketplace designed to deliver a measurable 100 percent ROI within a year in startup with continuing sustainable and even improving results. Industrial businesses base their profits on the products and on their production value. Control systems are intended to help and measurably improve the profitability of the operations they control. The Foxboro DCS does. As such it can become the Profit Engine of industrial businesses.

For decades industrial companies have viewed the control systems as essential to operating their plants, but over the past decade the incremental and potential business value these systems could provide has not been emphasized. Perhaps the primary contributor to this is the business benefit delivered by DCSs and other automation and control solutions that is not well-measured and not visible. Plant engineers have indicated that they



believe the cost accounting teams in their plants measure this value, but modern cost accounting systems typically only measure the overall plant financials on a monthly basis. As a result, any improvement done to a section of the plant that has real-time impact will likely not be visible to the business. This means that the benefit from automation and control solutions is not being measured. This has effectively relegated automation systems to a cost without benefit. The unfortunate thing is that these systems can add tremendous value if applied correctly.

Foxboro DCS addresses this shortcoming in two important ways both of which are based on Schneider Electric's patented real-time accounting (RTA) approach. First is utilizing Schneider Electric's Profit Advisor which is an IIoT enabled big data analytics application providing a diagnostic capability to identify where in a plant operation there is potential to improve operational profitability and also to measure and make visible the operational profitability improvement once it has been implemented. In this way, not only can value generating automation and control solutions be identified along with reasonable improvement estimates, but after they are implemented the true ROI for those investments can be discerned. This enables industrial companies to continually get the maximum returns from their automation investments.

Second, Foxboro DCS supports the implementation of the RTA software right at the real-time control level in the system. This not only provides ongoing RTA measurements across the plant but can also be used to empower the entire profit-impacting workforce with the real-time business decision support information they require to make better and profit-generating decisions. This capability can transform each and every person in the operation into real-time profit managers. Experience has demonstrated that the impact, in terms of measureable operational profitability improvements can be unprecedented – often resulting in a 100 percent ROI in a matter of a few months.



Continuously Current

Over the past decade there has been considerable discussion regarding the aging of the installed automation systems in industrial plants. Some analysts have predicted that there would be a huge growth in DCS sales as these systems reach their end of useful life. But the expected increase in upgrade and replacement orders has not materialized to the extent predicted. There may be two key reasons for this. First, the installed systems still work after decades of use. This is a tribute to the DCS companies who supplied these systems. There is almost no other high tech sector that can make a similar claim. The second reason is that industrial companies are having a difficult time identifying and measuring the necessary return-on-investment to justify upgrading their systems. The fact is that upgrading an existing system to a new system performing the exact and same functions as

the installed system is performing seldom provides the value necessary to justify the investment. With the Profit Advisor to do the diagnostic and the Foxboro DCS with its continuously current architect can both provide incremental functionality at lower lifecycle cost to improve the profitability of the business, and the embedded RTA software to measure the improvements and empower the workforce, the potential ROI can be attained, measured, and made visible. Perhaps this will lead to a new trend toward value-based automation and control.

The Foxboro DCS was introduced to the market over 30 years ago with the promise of a continuously current architecture. That is, the system was designed from inception to allow the incorporation of state-of-the-art technologies while also protecting the investment customers made in the configuration, applications, and solutions delivered with the system. At first, industrial customers were incredulous. It was easy to make such a claim when the system was new, with no track record to back it. But 30 years of proof backing up the claim have demonstrated that

the Foxboro DCS is a future-proof and continuously state-of-the-art system. This is a huge benefit for industrial companies looking for a control system for the life of their industrial assets. The traditional huge expense of replacing an old system with a new system, including redeveloping all of the configurations, applications, and solutions can be put to rest.

Impact of Safety and Cyber Security on Profitability

Safety of people, equipment, facilities, and the environment is becoming increasingly important in industrial operations. This is not just because of the highly publicized accidents that have occurred over the past few years, or even for altruistic reasons. Rather, it has become evident that the safety of an operation is directly linked to its profitability. Although it is true that industrial executives are very concerned over the safety of their operations, it is the increased profitability potential that can be realized through more effective safety management that is really starting to turn heads.



Looking at Figure 1 below, if the real time profitability model on the left represents the current operation of the plant, it is clear that the current profitability is constrained by the current safety risk. In other words, for the plant operations staff to improve the profitability they would significantly increase the safety risk to unacceptable levels. On the other hand, if the safety risk constraint could be opened up a bit, then the profitability could be improved within acceptable safety limits.

The key to being able to determine where the safety constraint truly is and how to free it up is to accurately measure the safety risk of a piece of equipment, process

unit, plant area, or plant in a real time and continuous manner. With ongoing real time measures of safety risk, plant operators can determine how hard they can safely drive the plant.

By trying the safety risk measure and profitability controls together provides a real-time safety risk indicator on the operation dashboard. This visible real time safety risk value will provide immediate feedback to the operators of the increased or reduced safety risk resulting from an action, enabling the operators to take appropriate profitability improving actions while also mediating the safety risk to the operation.

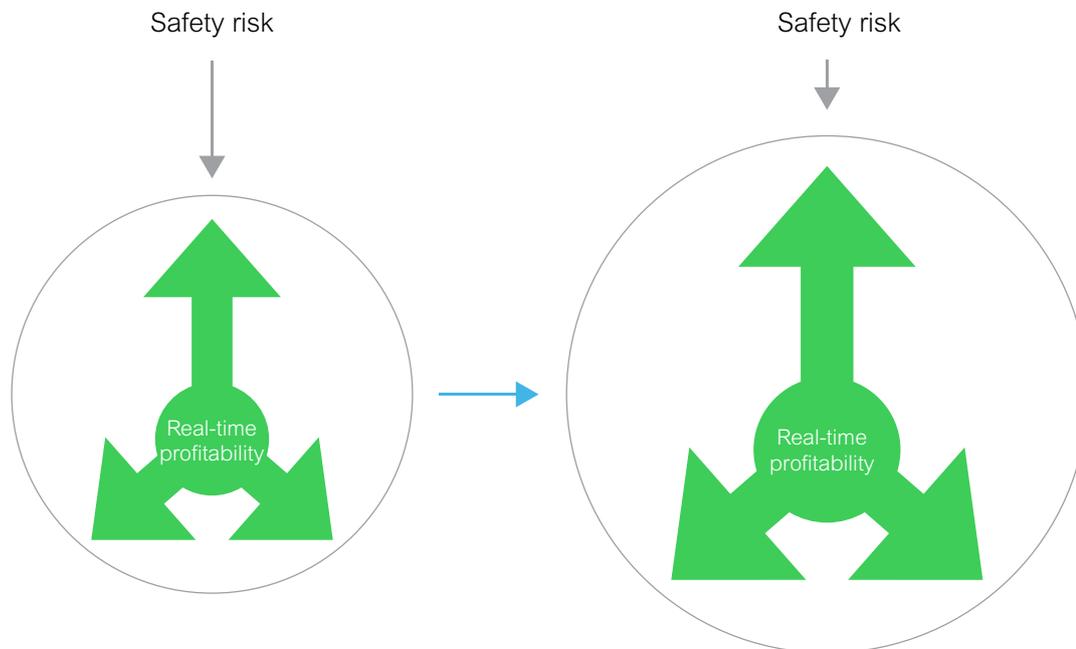


Figure 1: Impact of Safety on Real-time Profitability



The Foxboro DCS offers a unique advanced connectivity and integration with Schneider Electric's EcoStruxure Triconex™ and Modicon family of safety systems, providing not only a unified user system experience, but also a unified, real-time view of the relationship between safety constraints and real-time profitability, further enhancing and empowering companies to manage and control their business variables under a unified strategy.

Profitable Operations

The Foxboro DCS is an innovative, fault-tolerant and highly available system that is cyber security hardened, and architecturally optimized for smart design and flexible engineering with built-for-purpose smart I/O and intelligent enclosures and marshalling panels. Adopting open communications standards, the Foxboro DCS is able to collect data across different protocols used by multiple vendors across a disparate array of equipment, presenting opportunities to collect critical data from the enterprise for better analysis to discover meaningful insights and decision-making. Packed with state-of-the-art OT technologies like Dynamic SAMA, “Engineer Anywhere” and “Control Anywhere” capabilities, Visualization,

Situation-Awareness functionalities, and the latest IT technologies in mobility, cloud, and analytics, the Foxboro DCS reduces capital and operating expenses, improves decision-making while continuously adding value to the product output. Additionally, Foxboro DCS is supported by a wide range of local and remote services that ensure customers receive the greatest value from their automation and control investment.

With all of these capabilities built into a single system as well as the continuously current attribute, it is fairly easy to conceive that the Foxboro DCS has the built-in capabilities to improve the operational and business performance of manufacturing and production operations.

Conclusion

The unique combination provided by the Foxboro DCS and the Profit Advisor diagnostic application, embedded RTA, real-time business decision support, and a broad set of value-generating capabilities and applications make it the most valuable DCS in the market. In fact, it is the only DCS that can measurably deliver 100 percent ROI in less than one year. This is why Foxboro DCS can become the heart of the Profit Engine of your business.

For more information, [click to visit the website](#):

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