

Rockwell Automation InSite™ Managed Services Offers Seamless Extension to End User's Staff

By Craig Resnick

Summary

ARC has identified the services business as one of the fastest growth segments of the automation market. The shift to a services-intensive automation marketplace has come about because of the wave of workforce downsizing that has occurred, combined with the increasing support and costs associated with optimizing automation systems and automation infrastructure. This is especially true today as manufacturing convergence blends automation and enterprise disciplines together, creating powerful

The next transformation for the services business is that of establishing automation supplier's service personnel as a seamless extension to the end users staff, a service provided by Rockwell Automation InSite Managed Services.

but complex collaborative production systems that require highly trained personnel to deliver services. This shift has moved these service responsibilities onto the shoulders of the automation suppliers, who are increasing their scope of services offered to cover all aspects of the plant operating lifecycle. Some automation suppliers are offering complete maintenance and operations outsourcing services, expanding capabilities to fill specific gaps, and looking for more consultative type services that could improve their customers overall operating strategy and reduce their lifecycle costs. The next transformation for the services business is that of establishing automation supplier's service personnel as a seamless extension to the end users staff, a service provided by Rockwell Automation InSite Managed Services.

Why End Users Buy Services from Automation Suppliers

End users no longer have the internal resources to provide the services they once did. Tight operating budgets, strong global competition, low capacity



This paper was written by ARC Advisory Group on behalf of Rockwell Automation. The opinions and observations stated are those of ARC Advisory Group. For further information or to provide feedback on this paper, please contact the author at cresnick@arcweb.com.

utilization rates, and sluggish consumer demand are forcing end users to cut costs wherever possible. Large central or corporate engineering departments no longer exist, or have been stripped down significantly. This has resulted in thousands of jobs lost across the globe. Simultaneously, automation suppliers are increasing their application expertise and project execution capabilities to fill these voids at end users. Some automation suppliers have built new services organizations from scratch, others are populating these organizations with former employees from end users who had been laid off or accepted early retirements.



End users also no longer have the time or resources to deal with the many different automation and enterprise suppliers on a project. Any automation project is going to have several different suppliers for field instrumentation, control systems, production management applications, safety systems, and asset management systems. Automation suppliers not only have deep product and application

knowledge for their own solutions, but also their knowledge of competitive offerings has increased exponentially as part of their services focus on competitive migration projects.

Shortening Delivery Times and Reducing Time to Startup

Faster time to startup means shorter time to profitability. Automation suppliers with the right service capabilities can provide end users with a single point of responsibility for project management, coordinating activities among multiple automation suppliers. This approach provides an economic advantage to the end user by reducing coordination efforts, commissioning times, customization costs, and installation costs. As automation suppliers are going to be increasingly called upon to fill the role of service provider, particularly in the operations, maintenance, training, and support services segments, end users will be performing careful evaluations of the supplier's service capabilities across all aspects of its business as a critical part of any supplier evaluation process.

Rockwell Automation Responds with InSite

In response to the market demand for increased services provided by automation suppliers, Rockwell Automation offers InSite, a suite of managed services built on an infrastructure of surveillance, knowledge

InSite consists of five service components: Surveillance, Diagnostics, Knowledge Management, Administration and Optimization, delivered by hundreds of technical personnel located in seven global support centers capable of support in over 15 languages.

management, and diagnostic technologies.

InSite consists of five service components: Surveillance, Diagnostics, Knowledge Management, Administration and Optimization, delivered by hundreds of technical personnel located in seven global support centers capable of support in over 15 languages. Additionally, the Rockwell Automation

global network of field engineers, many of whom are embedded in its customers' sites, may also form part of an InSite support team. Each of these service components is designed to be specifically tailored to the end users objectives of reduced costs, improved organizational performance and increased system uptime and operating cash flow.

InSite Starts with Surveillance Services

The first component of InSite is Surveillance Services, which provides the end user with remote, near real-time monitoring of alarms, faults, operator and other events, process system variables, connected device health, health of system networks, server health and other data and key process indicators (KPIs). A secure connection between the InSite team and the end user's assets is provided. This connectivity may be accomplished by the InSite team's own hardware and software located at the end user's site, which connects to their processes and systems and transmits health, diagnostic, and status information directly to the InSite team's support center. Surveillance is offered with two options. The Devices and Applications option performs surveillance of servers and database health, as well as provides monitoring of transaction processing, data storage levels, communication between server nodes, HMIs and other devices. Monitoring software may be installed on the end user's servers. Surveillance of automation devices such as drives, PAC/PLC hardware, HMI hardware, server hardware, remote actuators/transducers, intelligent sensors, I/O hardware, network hardware and condition monitoring of machine mechanical systems provides monitoring of device health. The other option is the Production Process, which includes surveillance of production processes including closed loop control within and between sections or machines, PAC/PLC control languages, set points, references

and feedbacks and other system level process variables. The service provides monitoring for proper function, tolerance and effectiveness of the production process and the systems that support it.

InSite Diagnostics & Knowledge Management Services

The primary goal of InSite's Diagnostics Services is to return the end user's machine or system to its prior operational state. The services consist of support and troubleshooting via telephone and on-demand remote connection, providing the end user with a system and application level help desk, on-line troubleshooting and diagnostics. This includes on-line

Support is a near instant response to an event, 24x7x365, in multiple languages, by an on-demand team of technical personnel familiar with the end user's Rockwell Automation and third party products and systems.

incident correction such as application modifications and work-arounds, complete incident logging, tracking and reporting including root cause analysis, periodic incident technical reviews, and integrated field engineering dispatched to the end users sites. Support is a near instant response to an

event, 24x7x365, in multiple languages, by an on-demand team of technical personnel familiar with the end user's Rockwell Automation and third party products and systems. This service can help end users minimize the need to maintain large support staffs and deploy overtime or night-shifts, maintain a single support team that can cover multiple sites, and reduce operator training requirements.

Capturing the knowledge of how to support and enhance the operation of a deployed system is a continuous task for end users. Without appropriate automation, these knowledge bases can be time-consuming to develop and manage, and quickly become out-of-date and poorly aligned with end user's actual needs. Documentation, product information and as-built drawings are usually delivered once and rarely kept up to date as systems evolve over time. InSite's Knowledge Management Services address end users needs in managing ongoing knowledge cases and documents, keeping this knowledge continuously updated, maintained, synchronized and integrated with the end user's systems.

InSite's self-learning technology enables end users to quickly access information from the knowledge management system. Using artificial intelligence, a knowledge engine continuously learns how end users search for information and automatically applies that input for instant access to site and system specific knowledge and support. Relevant system specific

information is securely stored and easily searched. Knowledge management eliminates the risk of information disappearing with staff turnover, and improves productivity by providing instant, easy access to the desired information.

Lifecycle Drives InSite Administration & Optimization Services

InSite Administration Services offers critical life cycle support that keeps an end users assets and systems current. InSite's Administration component can provide services including ongoing system performance tuning, where the InSite support team will suggest specific adjustments to automation and computing resources to improve performance and maintainability. Also, as



InSite Administration & Optimization Services

the end user's automation environment changes, programming adjustments are needed to adapt, including the addition of new or upgraded manufacturing equipment. InSite's support team can make programming adjustment changes to automation and computing equipment, either remotely or locally. Version control and application testing services are critical as new enhancements and software features become available. InSite's support team can use the stored systems image and application code to test changes before performing system and firmware installation on PACs/PLCs,

HMI devices, drives, servers, Rockwell Software utilities, and application software. Patch management and testing services can be performed on an image of the end user's servers running at an InSite support center. Disaster recovery services include the storage of automation programs and configuration for PACs/PLCs, HMIs, communications, and drives at the end user's location.

Focused on process and system improvement projects, InSite Optimization Services are designed to extend or modify end users automation product lifecycles and provide focused upgrades. The services provide the end user with evaluation and improvement recommendations, accomplished by implementing projects which increase overall equipment effectiveness (OEE), production quantity and quality, environmental and compliance requirements, non-continuous process cycle times, continuous process

speeds, HMI functionality, and server and data base effectiveness. Deliverables include services to migrate obsolete or unreliable systems to today's technology, using InSite's support team to manage the systems and perform additional engineering activities. Results include extending and enhancing automation investments, which can improve cash flow and preserve capital expenditures (CAPEX).

InSite's Contract Project Phases

InSite Managed Services provides end users with contract documentation that defines their specified deliverables, including the timeline for execution of services and a description of deliverables.

Time after contract initiation	Description of deliverable
PHASE 1	Primary Support Leader (PSL) assigned to contract Contract review Team selection Internal kickoff meeting conducted Welcome call with customer conducted Begin kiosk order process Administrative tasks underway Schedule Installed Base Evaluation (IBE)
PHASE 2	Customer kickoff meeting/call conducted Site Audit project plan completed Knowledge portal project initiated IBE conducted
PHASE 3	Site Audit planning call completed Work orders for connectivity to customer site submitted IBE report delivered to InSite project team Update call with all stakeholders
PHASE 4	Site Audit begins Update call with all stakeholders
PHASE 5	Site Audit continues Update call with all stakeholders
PHASE 6	Site Audit report completed and delivered to customer Update data collection strategy based on findings of site audit Update call with all stakeholders
PHASE 7	Kiosk data collection computer shipped to site Update call with all stakeholders
PHASE 8	Support Strategy Guide shipped to customer Confirm connection and data monitoring Service turned on Final update call with all stakeholders

InSite's High Level Sequence of Events that will occur once a Contract is initiated with the End User

Each InSite contract is unique with respect to the manufacturing systems covered and the combination of program options selected, but each follows the Rockwell Automation standard deployment sequence of events and deliverables. The table on page 6 contains a high level sequence of events that will occur once a contract is initiated with the end user.

Every InSite contract begins with the assignment of a designated team, led by a Primary Support Leader (PSL) that executes a comprehensive and disciplined initiation process. This involves a Rockwell Automation team traveling to the end users site to become familiar with their systems, people, and processes. This process can take between 2 and 15 weeks depending on the size and complexity of the system to be supported. The process follows a disciplined script and project plan that results in the InSite team becoming experts on the end user's systems and an integral part of their technical and operational team.

Case Study, Reduced Downtime & Maximized Reliability

CENTRIA's primary challenge was to find a control solution that provided high reliability and a maximum return on investment (ROI), while meeting performance and throughput requirements.

Moon Township, Pa.-based CENTRIA is a supplier of architectural metal wall and roofing systems used in commercial and industrial building construction. The company provides coil coating services at its Ambridge, Pa. facility for coating substrates, such as aluminum, carbon steel, galvanized steel, stainless steel and zinc aluminum alloys. To boost its coil coating capacity and increase market share, CENTRIA added a second coil coating line and upgraded the control technology on its existing line in Ambridge. With downtime costs from \$3,000 to \$5,000 per hour, maximizing uptime on both production lines was a key motivator for the upgrade.

CENTRIA's primary challenge was to find a control solution that provided high reliability and a maximum return on investment (ROI), while meeting performance and throughput requirements. The company's control system upgrade included Allen-Bradley® ControlLogix® PACs for drive coordination and integrated multi-disciplined process and discrete control, PowerFlex® variable frequency AC drives, and PanelView™ HMI operator interfaces. The upgrade helped CENTRIA boost throughput capacity, while allowing the company to run heavier gauge material through the coating process. However, with limited personnel to assist with startup

and maintenance of its coating lines, CENTRIA needed technical support assistance to maximize equipment reliability and reduce unplanned downtime.

CENTRIA selected Rockwell Automation InSite services to provide technical support assistance. This support service provides CENTRIA with 24x7x365 direct access to a designated support team who has an inside knowledge of the company's coil coating process and all control system components. This service also helped CENTRIA establish a predictive maintenance strategy, preventing problems before they occurred with InSite's remote monitoring and diagnostics capabilities. This service included an off-site support team who continuously monitors the control system on CENTRIA's coating lines via a high-speed broadband connection, checking for issues to proactively prevent unplanned downtime. The off-site support team also uses remote monitoring technology to tune drives and remediate quality issues. A continuous log of operating history is recorded to help identify trends and simplify troubleshooting. The InSite service helps CENTRIA improve equipment



InSite Services at CENTRIA, a Supplier of Architectural Metal Wall and Roofing Systems

performance, increase operation consistency, and more quickly troubleshoot and solve problems, helping the company meet its uptime and throughput goals while minimizing maintenance costs.

With InSite services, personnel at a Rockwell Automation support center continuously assess production status using proprietary software applications to compare real-time and historical process data to a predetermined optimal range. If a parameter deviates outside the range, the InSite support team will notify production personnel at CENTRIA and then begin troubleshooting activities to diagnose the cause and determine actions. Once the Rockwell Automation support team determines corrective measures, they collaborate with the plant maintenance staff to execute the actions and restore normal operations. In one instance, CENTRIA ran into an embossing problem which was causing the metal to tear. The InSite support team identified the problem and initiated the appropriate

corrective action. Without the monitoring service in place, it would have taken CENTRIA's operators significant time to realize there was a problem, resulting in substantial product losses.

The InSite service has helped CENTRIA resolve problems before a downtime situation occurs, while simultaneously boosting equipment reliability, increasing throughput and improving product quality. The documented ROI from the InSite service was quick and substantial. In its first year of operation, the InSite service has helped CENTRIA boost its coating productivity and helped reduce its downtime and scrap costs. The combination of expanded capacity and improved uptime has allowed the company to focus on higher priorities, such as meeting customer needs and improving profitability.

Conclusion

End users no longer have the internal resources to provide their own services due to these resources being eliminated through strong cost cutting. They also have to deal with servicing the many different automation and enterprise suppliers installed in their plants. Automation

In response to the market demand for increased services, Rockwell Automation offers InSite, a suite of managed services built on an infrastructure of surveillance, knowledge management, and diagnostic technologies.

suppliers are increasingly being called upon to fill the role of service provider, particularly in the operations, maintenance, training, and support services segments. Automation suppliers today have the capabilities to provide a single point of responsibility for servicing multiple automation and enterprise suppliers.

In response to the market demand for increased services, Rockwell Automation offers InSite, a suite of managed services built on an infrastructure of surveillance, knowledge management, and diagnostic technologies. InSite consists of five service components: Surveillance, Diagnostics, Knowledge Management, Administration, and Optimization.

A primary challenge for Rockwell Automation to best leverage its InSite services is to convey its knowledge of its automation competitors and major enterprise computing companies solutions to its customers. Rockwell Automation must demonstrate its ability to provide an equivalent level of services that maximizes the performance of its competitors and enterprise systems as well as it does with their own systems. This can be achieved by continuing to publish metrics-based success stories, similar to

its CENTRIA case study, in each of its key targeted vertical industries, demonstrating its competitor and enterprise system competence to its customers who need additional proof points of a guaranteed return on their potential automation services investment. Rockwell Automation can also achieve these proof points by actively promoting to its customers the experience and previous backgrounds of its global technical personnel in servicing competitor and enterprise systems.

Rockwell Automation should also leverage InSite's service capabilities of offering secure, managed systems focused on plant intelligence displayed on-demand, providing online delivery of information, such as plant, production, and enterprise reports and information. This will provide end users with the opportunity to leverage the Rockwell Automation

infrastructure to collect, visualize and distribute information across their sites or enterprises. This information can then be used to populate dashboards and reports with near real time plant and enterprise manufacturing information, connecting and displaying to multiple, disparate data sources. This would provide end users with instant, secure access to their manufacturing intelligence, which can be created, managed and maintained by enterprise class tools running at the InSite support centers.



End Users Should Leverage InSite for Offering Secure, Managed Systems Focused on Plant Intelligence Displayed On-demand

These services can help end users minimize capital expenditures to procure, engineer, and deploy disparate systems and maintain in-house tools, providing further financial justification for Rockwell Automation InSite Managed Services.

This paper was written by ARC Advisory Group on behalf of Rockwell Automation. The opinions and observations stated are those of ARC Advisory Group. For further information or to provide feedback on this paper, please contact the author at cresnick@arcweb.com. ARC Briefs are published and copyrighted by ARC Advisory Group. The information is proprietary to ARC and no part of it may be reproduced without prior permission from ARC Advisory Group.