SERVICE DELIVERY FOR GUARANTEED OUTCOMES

Steve Linton, Honeywell Process Solutions, UK, looks at how automation support services have evolved to meet today’s operational and business demands.

Industrial organisations require support for their process control systems due to a variety of factors, including regular maintenance, regulatory compliance, long-term product support, and technology upgrades. Automation assets are critical to safe, reliable and stable plant operation.

This article describes how automation support is evolving to address the limitations of existing service delivery methods. Today’s comprehensive, outcome-based approach provides ongoing support vs a one-time transaction — giving the service provider responsibility for the total lifecycle of installed assets —
and utilizes a secure remote connection to add value through proactive/predictive maintenance of a customer’s control system platform.

In the face of increasing global competition, manufacturers must continuously improve their operations while finding ways to proactively manage plant automation systems. This means supporting installed equipment and applications to operate in a safe and secure manner, and that production and business goals are met.

For industrial companies, critical objectives include:
- Reduction of OPEX.
- Lowering CAPEX.
- Improvement of operational efficiency.
- Retaining existing operational know-how by transferring it from the retiring to current/incoming workforce.
- Optimising asset performance.
- Increasing overall equipment effectiveness (OEE).

With the complexities of modern process plants – and the new generation of open systems that run them – operators want to see information in near real-time for an immediate overview of the health and performance of their automation systems. As baby boomers reach retirement, the industrial sector is facing a skills dilemma. Finding and training new talent to replace retiring employees is becoming increasingly difficult. Newly hired workers want to use the latest technology that they are familiar with as a way to enhance their day-to-day job functions.

**Changing operational requirements**

When it comes to keeping automation technology effective, reliable and up-to-date, proactive is the new normal. Industrial organisations often resist changing their control system support strategy due to entrenched corporate policies or work practices. However, there are new ways to maintain and extend existing technology whilst maintaining full ownership of assets and outcomes.

The primary drivers for improved automation support programs include:
- Marketplace and competitive pressures.
- Constrained resources and ageing workforces.
- High cost of technology investment.
- Desire for optimised total cost of ownership (TCO).

The typical industrial plant has a small group of people with a select skill set that is expected to support its entire automation infrastructure. This resource limitation, combined
with rising cost pressure, presents a challenge in the current economic environment. Plant owners need to provide complete 24 x 7 x 365 operations support. Their support team must be agile enough to deal with new technologies and a diverse installed base that is continually adding more products to the production mix. Furthermore, they must be ready to implement the latest solutions to improve efficiency, productivity and safety across the operation.

**New model for automation support**

A growing number of manufacturing firms are moving beyond traditional transactional practices for process control system support and partnering with their main automation contractor to achieve continual and optimal performance of automation assets.

Managed services for automation allow plant owners to transfer day-to-day management activities to a service provider in an effort to achieve an effective operations environment. The service provider assumes accountability for the functionality and performance of control-related equipment in the facility. The objective is to reduce the administrative and support time spent on automation systems, thereby allowing employees to concentrate on areas of the core business where they can add the greatest value.

By employing a managed services model, industrial organisations are provided a methodology for continuous improvement with a high focus on asset integrity, aligned with their specific requirements. This solution helps to maximise returns on technology investments and keep systems running at peak performance levels. It can also augment a plant’s workforce and competencies, allowing in-house expertise to concentrate on production operations.

Managed services provide the flexibility to scale up and down personnel resources to meet business requirements with a known contracted resource. The personnel risk is handed off to the service provider, and the goal of this collaboration is maintaining shared system knowledge.

**Employing outcome-based services**

Leading automation suppliers have optimised the managed services approach by developing a new type of outcome-based service solution. This ‘pay-for-performance’ approach optimises the total cost of ownership, guarantees performance, and uses the automation system to improve business results. It is based on shared risk and reward, comprehensive lifecycle coverage, risk and change management, best practices, and a clear support contract with specific key performance indicators (KPIs).

With an outcome-based service solution, the customer hands partial or complete responsibility for system support to the automation vendor. The parties agree on scope, outcome levels and a fixed cost, and the customer maintains governance. The services can be delivered to stabilise existing platforms and/or sustain their performance for a specified period of time.

When fully executed by the automation supplier with guaranteed system performance, outcome-based support services provide preventative maintenance routines based on proven best practices. They also deploy continuous system monitoring, which offers alarm management and alerting to support incident management and diagnostic data for reporting, availability, capacity, and problem management.

**A proven approach**

Honeywell has played a role in the transformation of support strategies for the digital age by offering its Assurance 360 program, which assists manufacturers with maintenance, support and updates for control systems. Honeywell serves as a strategic partner with the customer, taking responsibility for system performance, utilising remote and site-based expertise and tools, and making decisions driven by analytics as demonstrated by a performance-based, fee-adjusted schedule. The result is a fully optimised production system.

A global support centre provides experts to monitor control system health at industrial sites and make optimisation recommendations utilising the latest cloud-based preventative/predictive analytics. They use powerful software tools to continuously monitor control applications, system performance and capacity functions in real-time to provide early warnings and notifications of potential issues. The tools address factors such as central processing unit (CPU) health, controller loading, memory, and network traffic on a 24/7 basis.

Global support centre personnel apply intelligence to robust analytic data to turn it into value-added information, which enables automation stakeholders to perform proactive interventions that significantly enhance their operational capabilities. With this solution, for example, end-users can gain insights to help minimise the frequency and impact of any control degradation.

Remote managed service experts can also perform control system audits to identify a wide range of cybersecurity vulnerabilities. This includes penetration testing and other
services to help detect and mitigate ever-evolving threats to automation platforms. Using a secure remote connection, security specialists provide managed service solutions that protect the customer's system from the latest malware, viruses and other threats.

Finally, plants can identify their specific control system migration needs and opportunities with an integrated automation assessment. This service provides a report on the system configuration based on proven best practices, a summary of security preparedness, a lifecycle analysis of supported hardware and software revisions, and a synopsis of overall asset performance.

**Putting the latest solutions to work**

As part of its outcome-based service footprint, Honeywell delivers agreed service outcomes rather than prescribed quantities of materials and labour. Moreover, it takes a strategic view to minimise the total cost of ownership of automation assets. The service program guarantees specific levels of performances for process control systems, networks and related infrastructure, and is focused on leveraging technology to improve business results.

Local and global support experts play an active role in managing all projects and incident resolution activities:

- Use performance monitoring and remote connectivity to react earlier and faster to unforeseen issues.
- Determine a sustainable task list and remediation steps to meet key performance indicator (KPI) metrics.
- Implement ongoing lifecycle management, support and problem resolution strategies.
- Gauge the risks and benefits of changes to the plant as a whole and troubleshoot should an issue occur.
- Optimise preventative maintenance to reduce incidents and lost productivity.

A less comprehensive service alternative is intended for companies that have the internal resources to handle support issues, but want to ensure that they have not overlooked anything critical. It provides competency in developing and sustaining a plant's internal expertise while providing assistance on an as-needed basis to meet production goals. This level of support emphasises proactive service management — developing a sustainable approach to address both vulnerabilities and performance opportunities, and standardising methods and procedures used for change management. The services are particularly beneficial for companies seeking on-time project execution at a fixed budget.

**Benefits to industrial organisations**

With increased competitive pressure and tighter margins, a growing number of industrial organisations are finding they can benefit from the predictable cost structure and certainty enabled by outcome-based automation services. The continued uptake of these services is overhauling the way plant owners manage their control system maintenance and support.

The deployment of a comprehensive automation service solution leads to better control system stability and reliability, as well as lower OPEX. Industrial facilities adopting the services have reported a reduction in overall incidents by as much as 40%, improving uptime and productivity. They have also seen a reduction in production waste of up to 20%, cutting operating expenses and increasing output.

In addition, plants can reduce TCO by up to 20% by extending assets' useful lifetime, reducing the need for third-party intervention, and minimising staffing from previous levels.

Industry experience demonstrates that outcome-based services help manufacturers meet selective KPIs in the areas of support (i.e., faster response and incident resolution), maintenance (i.e., best practices to reduce resource needs and resolution time, improving overall uptime) and optimisation (i.e., monitor and provide tools for assessing loop performance, identifying poor performers, analysing system reliability through sensor data monitored 24/7, and alerting of any potential failure or anomaly).

Ultimately, outcome-based managed services will go beyond core control and instrumentation support functions to help business profit and loss owners and plant operators drive their processes much closer to optimal thresholds to realise key financial objectives.

**Conclusion**

There are many incentives for industrial organisations to engage with automation suppliers through outcome-based service agreements. Instead of a relationship that is built on break/fix transactions or scheduled maintenance and/or repairs, the goal of the relationship is to achieve mutual success in attaining desired business results for the customer, creating a win/win situation.

Flexible, multi-year programs are available that provide outcome-based services to help customers optimise their control system assets. Employing a secure remote connection to add value through proactive/predictive maintenance, these solutions can help minimise unplanned downtime, resolve operational problems, increase process efficiency, and reduce total ownership costs for improved competitive performance.

**Bibliography**


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**Figure 2.** Leverage automation to improve system and business performance.