

Support — A competitive weapon

by Brian Courchesne

Executive summary

People often use the word “insurance” when explaining the value of paying for a support or maintenance contract. But who likes to pay for insurance? Where’s the added value? What is the return on that investment?

A true support agreement provides you with known value — measurable benefit from your investment. And, if you do it right, your vendor becomes a partner in helping you sustain and improve operational performance, using the support agreement as a vehicle to deliver tangible value.

This paper will look at the value of support agreements in a new light — leveraging them as a way to drive more value from your assets and provide the potential for competitive advantage.

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Introduction

Bringing a production facility online represents a huge investment. It typically takes years of planning, design, construction, and, finally, you move into operating the plant. Whether your operation has been running for 20 years or is about to start up, you face the ongoing challenge of achieving the highest returns possible on that investment. Once you have the initial bugs worked out and achieve the goals of targeted productivity, efficiency, quality, and performance, how do you sustain high performance, or even improve it?

Achieving the business goal of maximizing profits and overall value requires a balance between many factors. Companies that rely on automation systems must strive to get the most out of their operational assets, balancing short- and long-term objectives.

Successful operations focus on four key goals:

1. Protect critical investments — Sustain and extend the life of business-critical production hardware and software systems.
2. Maximize asset performance — Focus on production assets to optimize productivity and performance.
3. Reduce total cost of ownership — Balance short-term budgets with longer-term needs to effectively manage overall costs.
4. Improve operational performance — Seek proactive opportunities to improve overall operational performance.

Leading companies are integrating support, maintenance, and performance improvement services to sustain and improve operational performance, maintain a competitive edge, and achieve business goals.

This goal of this paper is to present a perspective on support services as a competitive weapon to not only sustain current operations performance levels, but to continually improve them — and to be able to measure the return on investment (ROI) of an ongoing support program.

Sustaining performance — A dream or a goal?

If you're like most companies, maintaining the performance of your production operation often seems like a losing battle. Whether your goal is to increase productivity or just do more with less, you might consider yourself lucky if you can sustain the same performance levels as last year, let alone achieve any kind of improvement.

The reasons vary from company to company and industry to industry, but most organizations share some common challenges:

- Automation systems are more complex and require extensive integration
- Systems are tightly linked to both software and hardware components
- Ever-changing business needs demand production flexibility and fast response
- Competitive pressures demand smaller margin for error and good consistency and quality

- Operational processes seem out of date and conflict with goals
- Degradation in performance and efficiency of aging systems and infrastructure
- Retiring and smaller workforce results in loss of experience, skills, and productivity
- Pressure to reduce costs; do more with less
- Pressure to meet safety, regulatory, and environmental standards

The end result — Less-than-optimal performance

These pressures all combine to lower the performance of your operation and impact the bottom line:

- Operational — Sustaining solution performance with changing business objectives, conditions, and everyday operational challenges
- Infrastructure — Maintaining adequate training and staffing, alignment with other complementary infrastructure and solutions/tools
- Evolution — New business and technology initiatives resulting in obsolescence of existing solutions, keeping abreast of technology advancements
- Commitment — Inconsistent sponsorship by management resulting in insufficient budget to maintain or lack of monitoring to drive performance

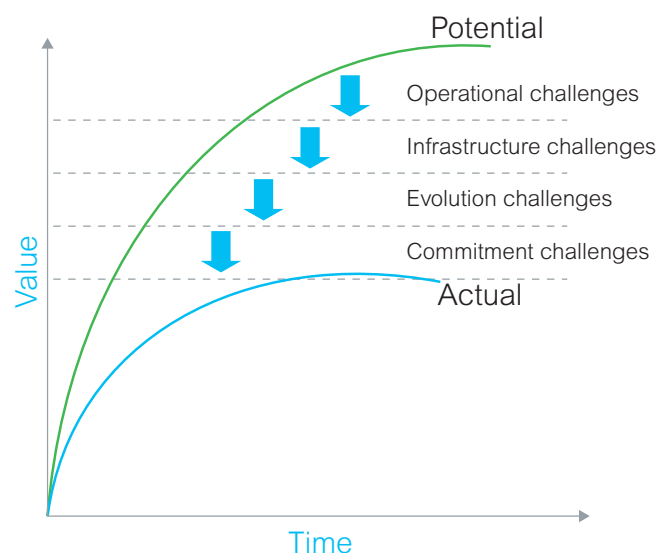


Figure 1
Optimal performance

Most organizations suffer as a result of dealing with these issues in a piecemeal fashion, reacting to problems when time and budgets allow. Changing anything in isolation can upset the balance between operational elements — the best results come from an integrated approach. Sustaining operational performance involves getting the most out of your technology, people, and processes, considering the interaction and integration of all factors.

Sustain and improve operational performance

Analysts and operations executives agree that if you don't at least sustain your current level of performance, you're bound to fall back, losing your competitive edge and risking your business. In today's fast-paced, technology-driven world, it's even harder to stay competitive while making sure that performance doesn't degrade. Operations must strive to sustain and improve operational performance on an ongoing basis.

From an operational perspective, sustaining performance means creating an environment that at least keeps you where you are, with efforts focused on two aspects:

- Support: The ability to apply resources to prevent and resolve issues, keeping the facility in an operational state
- Maintenance: An ongoing effort to ensure assets perform at intended targets at the lowest operating cost

Improving performance can involve a range of solutions from adding more resources to expanding the plant. People often think of adding new technology as a first step in improving performance but, without a clear understanding of the impact on your overall resources, including people and processes, technology alone is not a solution.

Services are a critical element in operational performance improvement, whether they are performed by your staff or external resources. Some examples of performance improvement services include:

- Assessments and “health checks” to prioritize efforts for the biggest impact
- Planning and analysis to develop a longer-term path consistent with business goals
- Asset-specific tuning efforts such as loop tuning, alarm management, boiler and control system optimization
- Process optimization, including your manufacturing processes and workflow processes
- Resource augmentation with functional expertise, or extra hands for a specific period
- Training and operator effectiveness efforts to improve productivity and expertise

These all seem like good ideas, but where do you start? How can you move forward when it seems to take all you've got sometimes to stay where you are?

Thinking outside the box — An opportunity for synergy

Most operations struggle to maintain an effective balance between support, maintenance, and improvement services, which can result in conflicts for capital expenditure and operating budgets and an “either/or” mindset. But, by taking a more holistic view and focusing on the common goal, there is an opportunity to integrate these efforts to drive longer-term business value.

Support, maintenance, and improvement services are typically managed as unrelated parts of the operations puzzle. But they all have one thing in common: they all support the ongoing performance of your operation. What if you could link them together? Integrating these elements of operations support can create synergy, producing higher returns on your overall investment.

This perspective effectively changes the meaning of “support,” moving it beyond reactionary technical support and “downtime insurance” to a definition that includes sustaining and improving operational performance.

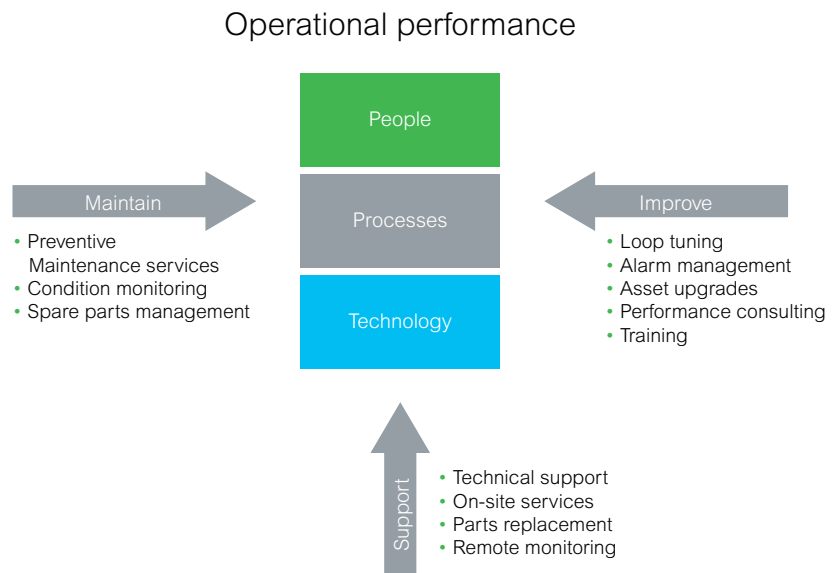
By integrating performance improvement services with maintenance and support services, you can leverage the resources, skills, and technology of your support service provider and derive tangible benefits.

Support is more than “just insurance”

The first thing to understand is that, when talking about support, it’s not about “just insurance.” A formal support agreement does provide essential “insurance” — ensuring that problems will be addressed as your business demands. This form of support is a critical element in protecting and maintaining your production assets.

While nobody likes paying for insurance, practically everyone has it in some form or another. Customers, with a large investment in automation software and hardware, have a corporate responsibility to ensure that those systems work — and continue working to deliver operational value in a safe and sustainable way.

Figure 2
Operational performance



Every company needs to assess the risk to its business if a particular system were to have problems; what the impact of that problem would be, and the opportunity to not only resolve problems, but also to prevent them from happening in the first place. That means investing in technical support services that ensure that parts are available for hardware, that software updates and fixes are installed, and that help is available when needed.

But our definition of support goes beyond basic insurance. Support services can also help achieve operational performance goals year after year. Successful companies treat support services as a priority for overall performance, business value, and competitive advantage.

Proactively preventing problems is better than just fixing them

Support must extend beyond providing reactive services whenever there is a problem. Leading companies strive for a collaborative relationship with their vendors; that they're looking out for them and working proactively to help meet performance goals today and in the future. Support programs should include proactive service elements such as upgrade planning, access to value-added information, and guidance on improving asset performance.

Many operations are finding that by taking a holistic perspective on support, services, and maintenance, they can achieve synergy and drive value to the bottom line.

This approach is effective for organizations that are growing as well as those that are focused more on production efficiency and reliability.

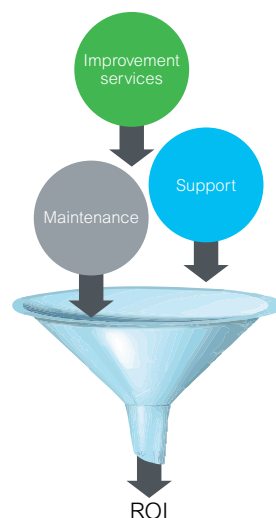
Support + Services + Maintenance = (Greater) ROI

By integrating a broader perspective on support with performance improvement services and proactive maintenance, companies can drive greater operational performance and business value.

Successful organizations are finding that they can get enormous value by leveraging the skills and experience of their automation vendors. In fact, they almost have to in order to really get the most out of their assets. Automation system vendors have resources simply not available to customers. It's their job. Beyond just knowing how to implement and configure their products, vendors understand what those products were designed to deliver and how to tune them in a production environment to get the most out of them. Whether it's performing advanced process control, tuning control loops, rationalizing alarms, or delivering manufacturing execution system integration, forward-thinking vendors offer services that can drive improved performance.

Figure 3

*Support + Services +
Maintenance = (Greater) ROI*



More strategic services should be considered to learn and apply industry best practices, modernize plant operations, integrate operations systems with business systems, or develop more effective knowledge management practices. Looking at the big picture from a broader and deeper perspective can produce some valuable results to improve performance, even in the short term.

Maintenance — Impeding or improving?

Maintenance must be considered as part of the picture, too. Maintenance is often considered as a necessary evil or seen as an impediment to production. But when it is viewed as part of the equation, companies can proactively integrate maintenance as a key element for improved operational performance.

Many operations keep a supply of spare parts for critical equipment, but what effort is made to ensure that those parts are kept at current revision levels, upgraded to new technology, or even maintained themselves? Some vendors offer programs to manage spare parts for their clients, even to storing them in controlled areas with guaranteed response times.

Most maintenance departments are facing the challenge of impending retirements and these teams often struggle to keep up with all the new technologies. As software becomes more integrated into operational systems, the task of maintenance becomes even harder — for new staff as well as the “old hands.” Businesses can leverage their vendors’ resources to take advantage of their knowledge and experience not only with their products, but also with complex applications.

Many operations struggle to justify ongoing support costs. If you only look at support like insurance, the question is really one of risk and impact. If you never take advantage of support services, then it seems like a bad investment. But, if you have a major problem solved through support, there is clear value.

The preventive aspects of support are a “hidden” value often overlooked. Not unlike performing preventive maintenance on equipment, it’s very difficult to estimate the value of installing available software updates, training operators on updated procedures, or upgrading to current equipment. But these activities are all geared to prevent future problems and sustain performance.

What does one hour of downtime cost your operation? What is the productivity of your personnel worth? What would it cost if you had to buy all the upgrades included in your support program? These are some of the factors to consider when justifying the value of support. In most cases, if you add it all up over time, the cost of NOT having a formal support program far outweighs the cost.

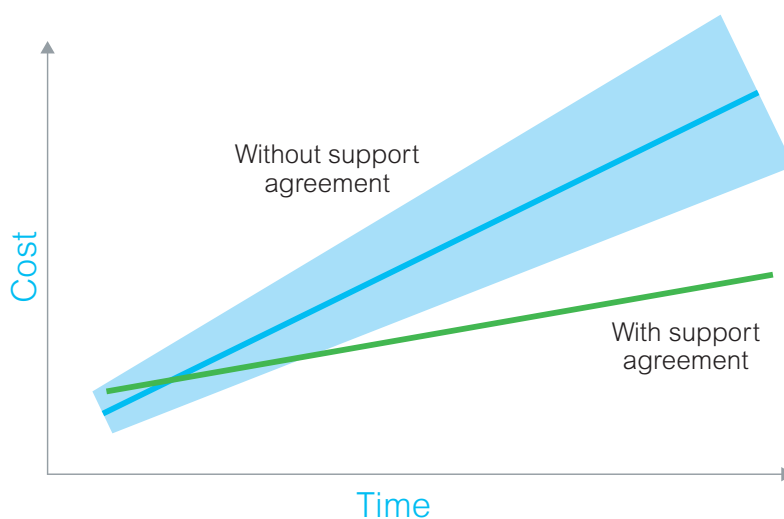
And, when you consider the additional value available by integrating other elements of proactive service and maintenance, there are even greater benefits. By including services aimed at improving operational performance, tapping into a knowledge base of deep experience and skills, and other proactive support, problems can be avoided and additional benefits can be achieved.

Without a support agreement, support costs can vary widely. It may cost less at first, but sustaining the same performance levels costs more over time if you don’t have formal support.

Support programs — A cost or a benefit?

Figure 4

An example of the relative costs over time to maintain systems with and without a formal support agreement



The business case for support

Simply put, a business case justifies an expense by comparing the benefits that will be realized from an investment in capital or operating cost. While the costs of an investment are usually easy to measure — the price tag — the benefits are much harder to quantify. In the context of a “sustain and improve” support model, benefits can be categorized as:

- Reduction in the loss of production capacity — Support elements that ensure asset availability, reducing downtime
- Maintaining systems for maximum longevity — Services that keep your systems current and performing as intended, avoiding capital expenditures
- Improvements in production performance — Services that will increase production capacity, productivity, yield, efficiency, quality
- Increasing operations staff performance levels — Support elements that increase staff productivity, effectiveness, skills
- Cost savings through discounts, economies of scale, service “packaging” — Leveraging available pricing structures to reduce costs for equivalent or greater service levels

These are not the only potential benefits from a comprehensive support program, but they are the most measurable. Additional consideration could be made for avoiding business and safety risks and fines from failure to meet regulatory, environmental, and safety standards. There could even be performance penalties for not meeting contracted deliverables. Anything that delays production impacts your customers, your reputation, and even shareholder value.

Estimating the value to be gained from a support investment requires some assumptions to be made. For example, to measure the value of reducing downtime of production assets:

1. What does a unit of downtime cost in your operation?
2. How often is that unit likely to occur in the target time period?
3. How do specific support elements reduce the likelihood of that occurrence?
4. What is the predicted impact of those support elements?
5. What is the impact on other parts of the operation?

The starting point to estimate the value of support is to define your operation's "serviceable events." Serviceable events are defined as opportunities to directly impact operational performance — for good or bad. An example of a serviceable event is the breakdown of a key pump. In our model of a comprehensive support program, factors that influence the performance of that pump could include:

- A preventive maintenance program to reduce the risk of premature failure
- Condition monitoring to get early warning of impending problems to minimize the impact
- Fast access to spare parts to effect repairs
- Redesign of procedures to speed pump repair and reduce impact on production
- Performance tuning to ensure a reasonable load on the pump
- Access to resources with the skills and training to diagnose and repair the pump

As an illustration, let's estimate the impact on production resulting from a breakdown in that key pump as:

# of incidents/year	Time down/ incident	Cost of lost production	Annual impact
5	4 hours	\$10,000/hour	\$200,000

We've shown some of the ways that an effective support program could impact that serviceable event, but what is the potential effect? By using historical information, industry standards, and best practices, we can make assumptions that an effective support program could reduce the number of annual incidents to three and shorten the downtime by one hour.

# of incidents/year	Time down/ incident	Cost of lost production	Annual impact
3	3 hours	\$10,000/hour	\$90,000
			Annual savings: \$110,000

In this example, a comprehensive support program that integrates elements of performance improvement services with maintenance and support services could save \$110,000 per year. While there are a number of assumptions required, and only a single asset examined, it's clear that significant benefits are possible. Extrapolate this example across all the assets in your operation and the potential value expands dramatically.

“Side effect” considerations

A serviceable event can have an impact beyond the immediate incident. In many industries, the cost of a process restart is significant, with an impact on energy costs, environmental controls, product quality, and operator safety. The incident could have an impact on related aspects of the manufacturing process, causing a ripple effect throughout the operation. The incident could produce wastage and impact overall quality and inventory levels. These “side effects” are very real, but extremely difficult to quantify.

Positive serviceable events

Serviceable events are not only negative; they can be opportunities to add value to production operations as well. Some examples of support service elements with a positive impact through a serviceable event include:

- Access to software upgrades that increase productivity
- Access to hardware upgrades that improve asset performance
- Planning services to make the best decisions about future activities and upgrades
- Access to expertise and knowledge libraries to augment staff experience
- Training courses to improve overall effectiveness and productivity
- Consulting reviews to improve procedures for safety management
- Periodic audits of regulatory compliance and environmental and security management

While some of these positive events are difficult to quantify value from, others can provide a measurable benefit.

Summary

It is possible to win the battle to sustain operational performance. It takes a broader perspective and the willingness to integrate options for support, maintenance, and performance improvement. It is also possible to measure and demonstrate the benefits that such a program can provide your business. Companies can sustain and improve operational performance through an integrated approach that focuses on four key areas:

1. **Protect critical investments** — An effective, integrated support, maintenance, and services program can sustain and extend the life of business-critical production hardware and software systems.
2. **Maximize asset performance** — Downtime costs companies millions of dollars. Integrated support options will maximize productivity and performance by keeping operations running smoothly.
3. **Reduce total cost of ownership** — Saving money is always important. A broader, integrated support program can provide innovative discounts and flexible funding options to save over the long term.
4. **Improve operational performance** — Performance improvement services that leverage vendors' skills and experience can reveal new ways to improve performance to drive added operational value.

Companies that have taken this approach view support not as a sunk cost, but rather as a valuable resource that provides real competitive advantage.

About the author

(Brian Courchesne) As Services Marketing Director for Schneider Electric, Brian Courchesne focuses on promotion and positioning of value-added offers for customer support services, advanced services, and a range of modernization services. Prior to joining Schneider Electric in 2007, he worked in various sales support roles with more than 30 years' experience including, consulting services, sales support, marketing, management, and product development.