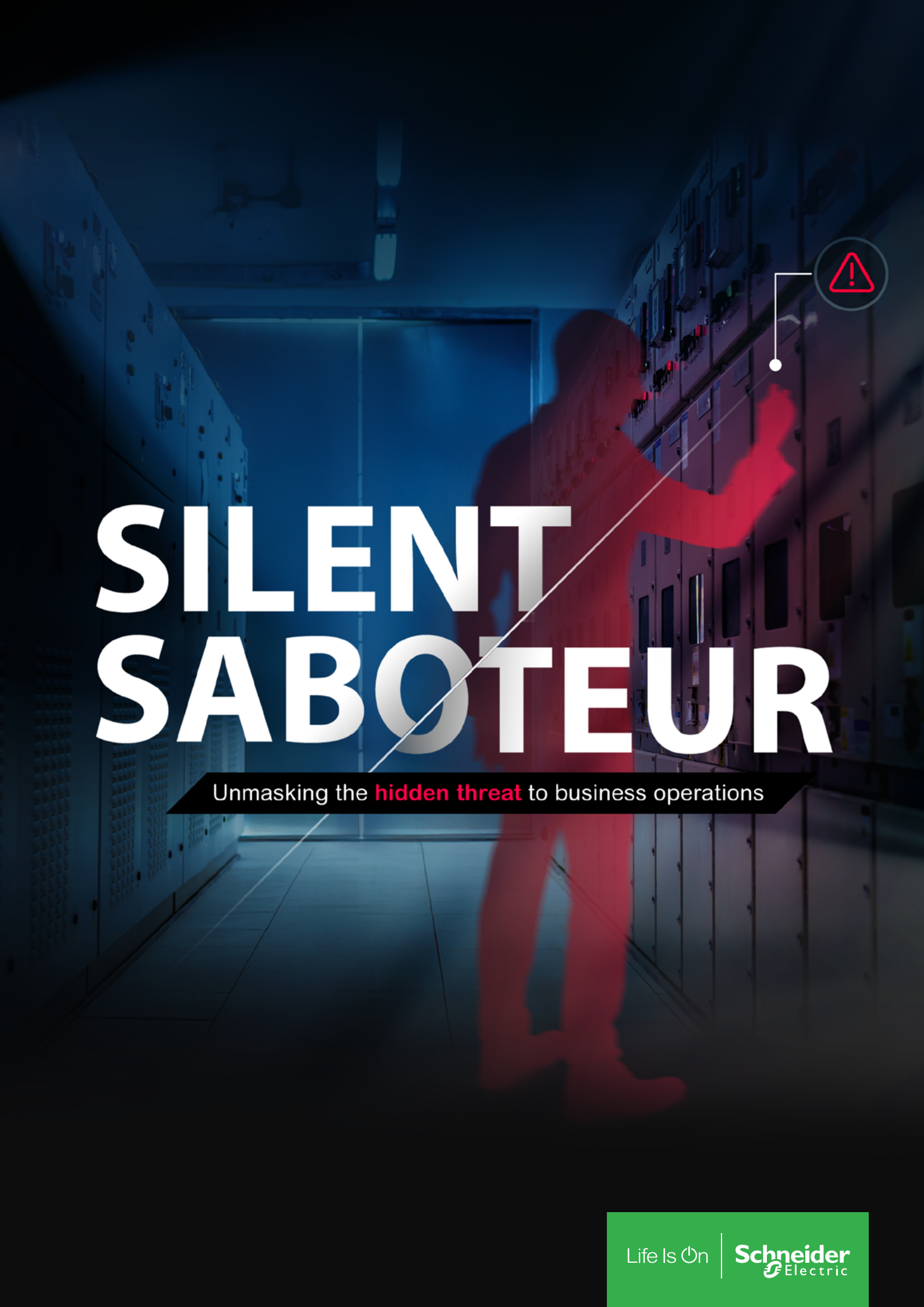

SILENT SABOTEUR

Unmasking the **hidden threat** to business operations

Life Is On | Schneider Electric

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1. Executive Summary

I don't envy the difficult decisions businesses face as they work to modernise operations and meet sustainability goals. With pressure to demonstrate progress and be competitive, many turn to headline-grabbing CapEx solutions, like building new manufacturing plants or installing large-scale renewable energy infrastructure. These investments matter, of course, but the truth is, getting the OpEx fundamentals right has never been more critical.

Businesses have to operate with fewer resources and growing external pressures. Operational challenges are coming from every direction. Margins are squeezed. Inflation has eased, but cost pressures remain. Talent is snapped up, and in the rush to adopt AI, businesses risk overlooking the next generation of employees. Then there's the retreat of globalisation and increasing regional instability — all of which contribute to ongoing supply chain disruptions. And the less said about tariffs, regulation, and declining customer demand, the better.

For most this is a highly sensitive market, a tightrope to walk. This balancing act means that when businesses hit an unexpected bump, the disruption can be catastrophic. Unplanned expenses — from emergency repairs to rerouted shipments — can quickly wipe out margins. We've seen too many cases where a single significant oversight tips a business from profit into loss. For investors and stakeholders, repeated issues chip away at confidence, and that could limit growth.

That's why businesses often focus on what they can control — namely, the processes and machinery under their own roofs. But control isn't always synonymous with attention. All too often, crucial admin, oversight, and maintenance tasks don't get the airtime they deserve. And that's when risks start to accumulate.

We're calling these hidden risks the Silent Saboteur — the insidious, elusive faults that operate under the radar within machines and processes. Once upon a time, we called them 'gremlins in the machine', those mischievous troublemakers. Today, they take the form of hidden inefficiencies, unnoticed wear, or overlooked process flaws. They are the unseen threats to site resilience, safety, and efficiency.

Make no mistake, the Silent Saboteur is not merely a whimsical character, bringing down countless businesses through its covert activities. There's even a case in this report where something as innocuous as a misaligned screw had explosive consequences.

This report explores the most common risks posed by The Silent Saboteur. Drawing on visits to over 400 customer sites across the leading sectors globally, we share the recurring problems we've identified in our extensive on-site study — and offer practical solutions to organisations today.

Kas Mohammed
Vice President Services UK&I

2. The Impact of the Silent Saboteur on Business Operations

The Silent Saboteur refers to anything that undermines operational resilience — the issues that go undetected and compound over time. These are subtle but damaging faults embedded deep within machinery, processes, and systems. They quietly erode efficiency or trigger major disruptions when it's too late to intervene.

For example, imagine a large industrial pump in a mining operation that was slightly misaligned during installation. It doesn't fail outright, but the motor has to work harder than it should. Over time this inefficiency drives up energy consumption, accelerates wear, and shortens the pump's lifespan. The business pays higher energy bills and endures more frequent maintenance — all without ever realising the root cause.

Consider, too, the logistics firm that delayed servicing its conveyor system to save on short-term costs. A single missed lubrication cycle leads to increased friction, a snapped belt, and multiple days of downtime, far more expensive than the maintenance ever would have been.

The Silent Saboteur is all of these things and more. Our research shows just how common these issues are:

79%
of audited sites were running obsolete electrical equipment, undermining reliability and exposing operations to failure.

71%
lacked critical spare parts, putting continuity at risk and extending recovery times.

29%
had damaged or poorly maintained capacitor banks, compounding power quality and stability issues over time.

The Silent Saboteur could be one of many things. A minor mechanical fault. An outdated process. A lack of real-time operational visibility. Siloed teams. Disconnected data. Inadequate maintenance. Manual errors. Over reliance on short-term fixes. But the true cost of these faults is difficult to quantify, precisely because the impact is cumulative, hidden, and rarely traced to one source.

Outages are problematic and costly. But it's opportunity cost that really stings. Money spent addressing avoidable issues is money that could have been invested in growth, innovation, or sustainability. These slow leaks drain business performance over time and make a business less competitive than it could be.

Combatting the Silent Saboteur

The Silent Saboteur thrives in the shadows — so the best way to fight back is to bring it into the light, with smart technology.

Smart sensors and IoT-enabled equipment can be installed from scratch or retrofitted to existing machinery, continuously collecting data on all aspects of production — from performance and energy use to temperature, vibration and more.

What makes smart technology truly 'smart' is its ability to talk to other connected systems, linking with advanced software that reveals what's really happening inside your operation.

Utilising AI and learning models to take the data, generate insights and recommendations - ever evolving and refining as more and more data is generated and learn't from. Tools like digital twins (virtual models of your processes) can be poked, prodded, and tested, without any risk to the real thing.

Case Study: Preventing catastrophic failure

A striking example of the Silent Saboteur at work comes from a global food and drinks manufacturer with 4,000 employees, 24/7 operations and more than $1 million in daily output. For example, a medium-voltage cubicle exploded, forcing the factory to shut down. Closing for just a day and a half to replace the component meant the company took a significant hit to its turnover.

The company brought in Schneider Electric to help improve visibility across its operations by implementing smart technologies. As soon as monitoring was set up at the site, it became clear there was a problem with one of the transformers. The temperature was reading more than 125°C (257°F), when it should have been closer to 70°C (158°F).

The company's engineers inspected the component as soon as possible, supervised remotely by Schneider Electric's experts. They found that a screw at one connection point had been incorrectly tightened, leaving an important cable too loose. This made it harder for the current to pass through, causing the temperature at the connection to rise, also a significant risk of a major/ catastrophic fire.

Even something as innocuous and small as a loose screw can cause major issues — if left unnoticed. The screw had ramifications across the business, but thanks to the new monitoring solution, staff were able to fix the fault and prevent similar issues from occurring in the future.

Safety and Compliance

When companies don't understand the full picture of their operations, it increases the chance of safety incidents and compliance failures.

This is a major threat: Our research revealed that **98%** of audited sites had electrical safety risks. At the same time, **93%** had no recent protection coordination studies. This vital engineering analysis ensures that electrical protection devices (such as circuit breakers, fuses, and relays) operate in a coordinated manner. Yet for many businesses, it's simply not being done.

Perhaps more surprising is that **89%** of audited sites had no or only partial electrical single line diagram (SLD). These diagrams are a critical reference for engineers and maintenance staff looking to ensure safe operations and emergency response and play a key role in demonstrating systems' regulatory compliance.

Without one, sites are more vulnerable to errors, safety risks, and non-compliance. What's more, they will lack a digital roadmap during the integration of smart monitoring tools and the implementation of digital twins, predictive maintenance, and system modelling.

Efficiency and ROI

Any barriers to full visibility across operations can reduce efficiency, often in unexpected ways. For example, a recent McKinsey study found that advanced analytics, powered by smart technologies, could cut costs by 15–20% by targeting areas that affect employee attraction, retention, and performance such as unnecessary maintenance .

But technology alone isn't enough. True efficiency gains come from combining smart platforms like Schneider Electric's EcoStruxure Asset Advisor with expert, connected services. EcoStruxure Asset Advisor provides the data, but it's Schneider Electric's service membership, EcoCare, that brings it to life. Through a partnership approach, our experts actively monitor systems, provide recommendations, and alert teams to potential issues. In short, poor operational intelligence, unplanned repairs, and downtime all contribute to inefficiencies, driving up costs and reducing ROI. Even when businesses invest in high-value CapEx solutions to improve efficiency, those investments must be supported by tech that help them operate as intended. Without this, the value of even the most ambitious projects can be undermined.

Wins - big or small - come from getting the fundamentals right. Break your transformation journey into smaller, targeted projects to optimise ROI and ensure your investment goes further.

3. Unmasking the Silent Saboteur

The path to transformation

Once the Silent Saboteur is exposed, it loses its grip on operations. Fortunately, there are immediate steps you can take to unmask them. The first is to map your critical assets and identify where failure or inefficiencies would have the greatest impact on safety, output, or cost. By establishing a clear baseline of criticality and life-cycle status and taking stock of operations, it's easier to plan the next move.

At this stage - or even earlier - Schneider Electric works with organisations to assess the status quo, uncover knowledge gaps, and create a targeted action plan. For many, this means bringing operations online: Connecting systems, digitising assets, retrofitting machinery, and integrating it all through smart software and services. This isn't just about efficiency - it's about revealing what's hidden in the dark.

When assets begin to communicate, through sensors, data, and analytics, the Saboteur's cover is exposed. Minor faults, subtle irregularities, and signs of strain that were once undetectable now surface as clear signals. With the right digital foundation, it's far easier to spot misalignment, anticipate failures, and uncover opportunities to optimise performance.

A decade ago, this level of insight wasn't possible, reserved for the biggest or safety-critical industries. But thanks to advances in IoT and AI technologies, manufacturers now have access to hundreds of scalable tools.

The benefits are significant. According to McKinsey, many businesses report a 30–50% reduction in machine downtime. Others report a 10–30% increase in throughput, a 15–30% boost in labour productivity and an 85% improvement in forecasting accuracy. That last figure is key: When you can forecast accurately, you can align production to real demand - minimising overproduction, reducing inventory waste, responding faster to shifts, and improving margins.

But no transformation is purely technological. Training and upskilling are essential if businesses want to get the most out of their digital tools - and people on the ground are often the first to spot erratic patterns or system drift. Equally, leadership must take ownership of the journey. Without clear accountability and commitment, even the most advanced tools will fall short.

From there, Schneider Electric helps design the right system and strategy, digitise and connect critical assets, and modernise operations in a way that extends equipment life, reduces risk, and delivers long-term value. Transformation and visibility go hand in hand — and when you shine a light on operations, the Silent Saboteur has nowhere left to hide.

It's like discovering the correct murderer, weapon, and location in Cluedo: It was the breaker, in the control room, with the worn insulation.

The Smart Advantage

Smart factory initiatives deliver, on average :

10–20% increase in production output

7–20% improvement in employee productivity

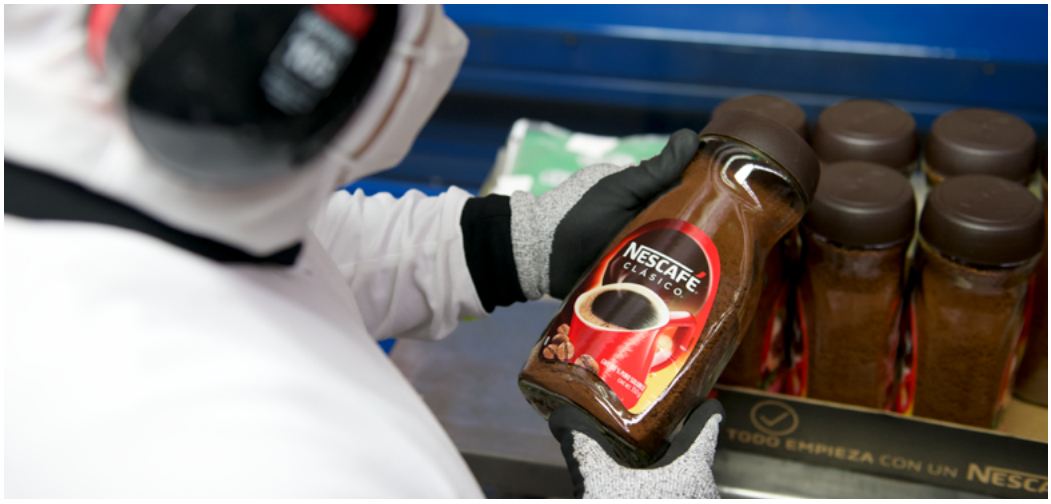
10–15% unlocked capacity

83% of manufacturers believe smart factories will transform manufacturing in five years

Case Study: Full-bodied insight into Nestlé's coffee production

Unplanned downtime is the worst possible scenario for Nestlé. More than 60% of its soluble coffee production comes from a single mega factory in Toluca, Mexico. Here, one million jars of coffee roll off the production lines every day. Since 2013, Nestlé has invested approximately $125 million to expand the site, increasing production by 40% and making it the largest coffee facility in the world.

"The factory works 365 days a year," explains Luis Gilberto López Páez, Electrical Specialist at the plant, who worked closely with Schneider to transform the site into a smart factory. "Therefore, an unplanned stoppage impacts the reliability of the processes," which he notes can ultimately affect what makes it to grocery shelves.



To avoid a catastrophic outage, Schneider Electric and Nestlé Nescafé launched a pilot project to trial Schneider Electric's EcoStruxure platform — the technological backbone that underpins Schneider Electric's smart solutions. The decision to go with Schneider Electric stemmed from prior success at Nestlé's facilities in France and Switzerland, where they had already proven its value.

But it was an unexpected event that accelerated the need for a full rollout. In April 2020, a short circuit in a main substation caused a 14-hour outage, resulting in an estimated $588,000 in lost production. Notably, this substation hadn't been part of the initial smart factory trial, and with no monitoring or services in place to flag early warning signs, the equipment failed without notice.

"EcoStruxure Asset Advisor allows us to identify hot spots and attack them before they become a problem,"

Luis Gilberto López Páez, Nestlé

Before partnering with Schneider Electric, Nestlé carried out maintenance on a fixed, calendar-based schedule - often servicing machines simply because it was time, not because a fault was present, as is the case for many businesses globally. That changed when Nestlé signed up for Schneider Electric's EcoCare service plan, bringing the entire factory online with real-time data, monitoring, and expert support. Today, maintenance is based on actual equipment condition, helping avoid unnecessary interventions and costly failures.

One year after implementing Schneider Electric's EcoCare service plan and EcoStruxure Asset Advisor, Nestlé hit its annual production target of $238 million. "In addition to avoiding unscheduled stoppages, Schneider Electric's services allow us to move from annual to biannual maintenance, which has a direct impact on plant productivity," López Páez adds.

Over a three-year period, Schneider Electric's Connected Services Hub experts proactively alerted Nestlé to more than a dozen potential or imminent equipment failures. As a result, engineers were able to intervene early and prevent three unplanned stoppages — each of which could have cost up to $52,000 per hour in lost output.

Nestlé Toluca at a Glance

- **1m** jars/day output
- **$588K** per 14-hr outage
- **$238m** target hit post-digital shift
- **3** stoppages avoided via real-time alerts

4. Preventing the return of the Silent Saboteur

Continuous Monitoring and Maintenance

With operations online, the Silent Saboteur has been identified and handcuffed, last seen shaking their fist and cursing the meddling kids who turned to Schneider Electric. But what if they were to return?

That's exactly what can happen without ongoing vigilance. Machinery degrades, conditions change, and hidden risks creep back in. That's why proactive monitoring, combined with expert support and predictive maintenance, is critical to keeping operations running safely and efficiently.

But here's the reality: technology alone doesn't solve the problem. Many systems today rely on a mix of new and old equipment from different manufacturers - often with limited in-house expertise to tie it all together or spot subtle warning signs. This is where Schneider Electric's approach stands apart. We don't just provide the technology; we bring a team of experts into the heart of your operations.

Through our EcoCare service plan, backed by the Connected Services Hub, we work alongside your teams, monitoring equipment, interpreting data, and identifying issues before they escalate.

Think of us as your industrial detectives, working in partnership to unmask hidden risks. Using EcoStruxure and real-time insights from thousands of connected data points, we help you stay a step ahead of failures, inefficiencies, and downtime. But crucially, our service experts don't wait for an alert to hit your dashboard - they're constantly watching for patterns, providing recommendations, and guiding your teams to act when and where it matters most.

The real value comes when tech and expertise combine. When a monitored parameter drifts beyond safe limits, it's not just an automatic system alert, Schneider Electric's service experts proactively assess the situation, provide recommendations, and support your teams to take action. With mobile apps, dashboards, and real-time insights at their fingertips, maintenance teams can respond, guided by best practices and proven troubleshooting techniques.

Yet despite these advantages, our research shows that more than three-quarters (76%) of audited sites still have no - or only partial - digital monitoring in place. That's starting to change, but it leaves many businesses exposed to hidden inefficiencies, risks, and lost revenue, often without realising it. We have to go further.

The reality? The cost of inaction far outweighs the investment in proactive services. With the right partner in place, protecting your operations becomes far more than just technology, it becomes a shared mission. And together, we'll keep the Silent Saboteur exactly where it belongs — out of your business.

Case Study: Cementing more efficient operations

The Silent Saboteur is never happier than when they're jamming a wrench into operations — quietly slowing systems down from the inside. And there are few sectors where efficiency matters more than in the building materials industry, where operational waste directly contributes to increased carbon emissions.

That was the challenge faced by Gansu Qilianshan Cement Group Co., a subsidiary of the world's largest manufacturer of building materials, China Building Materials Group. With 16 cement manufacturing and marketing facilities and nine commercial bases, the group produces an impressive 30 million tons of cement annually.

Driven by a moral and commercial imperative to cut emissions, Qilianshan set out to make its production process as efficient as possible — using the best technologies available. It's a pressing goal: Cement production accounts for around 2% of global energy consumption and 5% of total carbon emissions. More than 60% of cement production costs are tied directly to energy usage.

The only way forward was to embrace digitisation and smart technology.

With advanced AI algorithms and sensors embedded throughout the plant, operational data could be analysed continuously and in real time. This enabled precise optimisation of fuel use, kiln temperatures, and raw material blending. These were adjustments that would have been impossible without the connected, intelligent system underpinning operations.

After implementation, the Qilianshan plant saw standard coal consumption fall to below 100 kg per ton in its best month. Electricity costs were reduced by more than ¥4.5 million (around €600,000) in a single year. And there are still more efficiency gains to be made as the plant collects more data.

Training and Knowledge Transfer

No smart system can operate in a silo. Training plays a vital role in keeping operations running smoothly and closing costly knowledge gaps. Well-trained staff are better equipped to spot inefficiencies, troubleshoot the Silent Saboteur's interference, and avoid operational errors before they escalate. They're the oil in a well-oiled machine, and cultivating a culture of continuous learning is essential to long-term resilience.

Yet many sites still face a shortage of technical expertise. 98% of audited sites did not follow the manufacturer's recommended maintenance protocols - an oversight that can easily lead to equipment failure and costly downtime. To thrive in a more connected, digital future, businesses must invest in people as much as platforms.

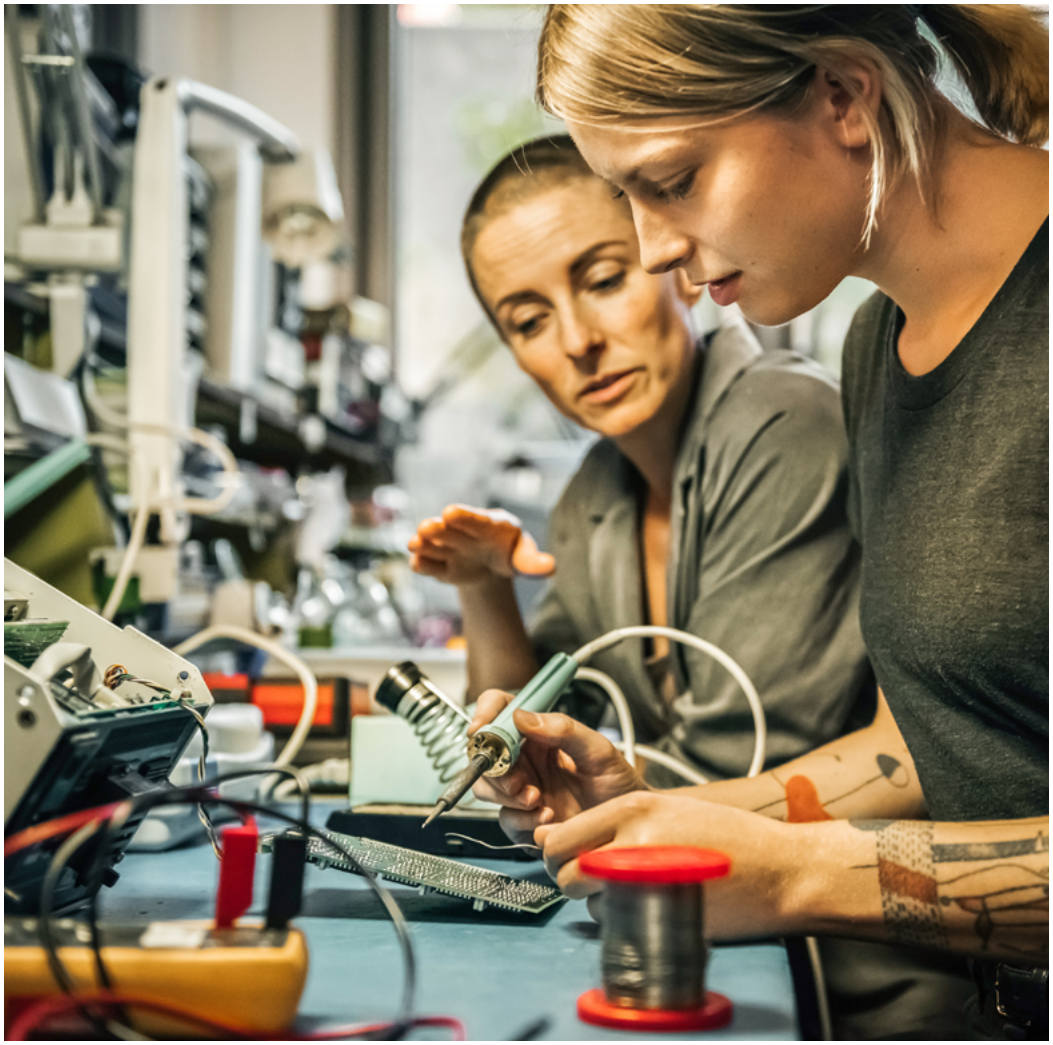
Schneider Electric is helping usher in a new era of engineering by giving organisations the tools and knowledge they need to succeed in an evolving landscape.

Through our training academies across the UK, we work closely with businesses to upskill teams, giving engineers the confidence and competence to manage increasingly intelligent systems.

That culture of training also helps address wider talent challenges. Take data centres, for example. Despite being a high-growth sector, they're grappling with twin pressures: An ageing workforce and intense competition for talent. Up to half of the sector's employees are nearing retirement age, while younger professionals often lack awareness of the career paths available.

Investing in training and upskilling doesn't just build capability, it improves retention. Apprenticeships and partnerships with education providers help raise awareness and build a sustainable pipeline of future talent. And once those people are in place, a trained and experienced workforce becomes your first line of defence, helping keep operations efficient and resilient.

Get talent wrong and the lack of expertise can threaten the operational continuity that smart technologies are designed to protect. This is why it often makes sense to pair in-house upskilling with support from strategic partners, ensuring you de-risk transformation and stay ahead of the Saboteur.



5. Conclusion

The Silent Saboteur is now rattling their tin cup against the prison bars, thinking back fondly on their glory days when they could meddle with business operations from the shadows. They once brought Nestlé's factory to a standstill, halting production of a million jars of coffee and leaving customers without their morning fix. On another occasion, by fiddling with a single screw, they caused an explosion.

The Saboteur has always lurked in the shadows, looking for ways to disrupt operations. But their biggest enemy has always been any organisation that shines a light on its processes, whether by closing knowledge gaps, training teams, or offering clear, rewarding career paths. It's time for organisations to recognise the power they have in our smart, connected world.

But it's not just about avoiding disruption; it's about thinking of the complete picture. Today's market is so competitive that businesses need to be sharp across every part of their operation. Margins are tight, and downtime is costly. So, businesses must do everything they can to keep running smoothly. That means digitising processes, connecting every asset, and gaining visibility over every screw, seal, and sensor.

At Schneider Electric, we help make that happen. Our smart solutions combine advanced platforms like EcoStruxure Asset Advisor with expert, proactive support through our EcoCare service plan. Together, they give businesses the power not just to monitor operations, but to manage them with greater efficiency and resilience.

Those who take this route aren't just protecting what they have, they're gearing up for what's next. Because make no mistake: every business is moving towards a more connected, modern future. The question is whether you act now or wait until you're playing catch-up. And as electricity demand grows with electrification, many will realise that energy abundance is not guaranteed.

Efficiency is one of the few levers we can pull to stay ahead. And it just so happens that digitisation and smart tech—those very tools that help build better businesses—are the Saboteur's biggest weakness.

Of course, there's a risk too. As operations become more digitally connected, they become vulnerable in new ways. The Saboteur will be watching for unsecured devices or outdated software, looking for a way back in. While we haven't dived into cybersecurity here, it's a crucial part of the equation for businesses today. It's not just about connecting systems but connecting them securely. That means knowing what's on your network, keeping it updated, and building a culture where security is everyone's responsibility. But that's a story for another day.

If businesses take smart tech seriously, it opens the door to resilience and profit. With full visibility over operations, it's easier to spot new efficiencies, embed circularity into processes, ensure parts and machines are replaced only when needed, and take confident steps towards a more sustainable, net-zero future.

If that sounds like the future you want—and you're done with the Saboteur's meddling—contact Schneider Electric today and get ready to lead in the new energy landscape.

5. Methodology

This report uses data collected by Schneider Electric from on-site audits of electrical distribution systems across 400 customer sites between 2017 and 2022. We intentionally selected diverse segments across various geographies to help ensure a valid cross-section of information.

All information in this report is based on data from the following segments:

- Life Science (30%)
- Food and Beverage (40%)
- Other (30%)
    - Buildings
    - Energy and Chemicals
    - Healthcare
    - Automotive and eMobility
    - Mining, Minerals, and Metals (MMM)
    - Water and Wastewater

The audits were conducted in these geographies:

- Europe (33%)
- APAC (23%)
- NAM (21%)
- South America (14%)
- Middle East / Africa (9%)

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Schneider's purpose is to e**mpower all to make the most of our energy and resources, bridging progress and sustainability** for all. We call this **Life Is On.**

Our mission is to be your **digital partner for Sustainability and Efficiency.**

We drive digital transformation by integrating world-leading process and energy technologies, end-point to cloud connecting products, controls, software and services, across the entire lifecycle, enabling integrated company management, for homes, buildings, data centers, infrastructure and industries.

We are the **most local of global companies.** We are advocates of open standards and partnership ecosystems that are passionate about our shared **Meaningful Purpose, Inclusive and Empowered** values.

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