

Accelerate and improve business outcomes with AIoT

How to deploy the artificial intelligence of
things (AIoT) for stronger results



About this e-book

There's no question that the Internet of Things (IoT) brings immense value to organizations, but understanding the rich data coming from the IoT is only the beginning. According to [a recent study](#), an organization's ability to deliver value from the IoT across the enterprise depends on the heavy use of artificial intelligence (AI). Nearly three in four respondents said that the combined value of AI and IoT capabilities exceeded their expectations.

"In an IoT environment, AI closes the loop," says Chetan Gadgil, Director of IoT at Intel. "At that point, you have the data, and you have AI capabilities learning from that data and, ultimately, automating important choices and actions."

According to the study, those who have developed an artificial intelligence of things (AIoT) capacity report much stronger results across several critical organizational goals, from speeding up operations to improving employee productivity and decreasing costs. In every case, there are double-digit percentage differences between those who say they're achieving significant value from the IoT and those who aren't - with AI making the difference.

In this e-book, we explore how organizations across industries are using AIoT to improve quality, maximize equipment performance, improve efficiencies and more. Keep reading to find out how you can reap the same benefits.

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7 ways an AIoT deployment can accelerate and improve business outcomes

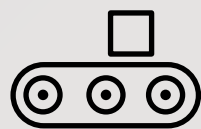
How can you use the AIoT to improve results and make a difference at your organization? We've got seven examples for you here, showing how leading organizations from multiple industries have deployed AIoT capabilities to improve quality, performance, efficiency, forecasting accuracy and much more.

1

Improving manufacturing quality

Manufacturers are achieving next-level improvements in quality by applying analytics to their shop floor and IoT data and combining it with external sources, such as supplier data, logistics and consumer sentiment insights. The flexibility provided by cloud solutions and myriad deployment options mean that there's no need to wait until the data is perfect. And the investment required to take advantage of sophisticated AI insights is much lower than in the past.

Organizations often ask engineers, not data scientists, to improve manufacturing quality. So they need powerful tools that are accessible to everyone that they can deploy whenever and wherever they need insights, including the automation or manufacturing execution system (MES) layer, in ERP systems or in shared systems with interconnected supplier networks. For an example, see our story on [USG](#).



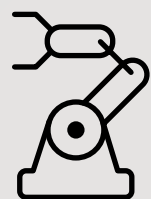
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Maximizing equipment performance

Industrial operations have long understood the value of preventing unplanned downtime. Operations leaders know how important it is to keep capital-intensive assets running and productive. That understanding has now expanded into predicting downtime for the products they produce.

Many organizations don't share quality and reliability data across groups. Instead, it sits in disparate, isolated systems. As a result, there's no unified voice of product, process or customer, which makes it much harder for an organization to have an enterprise view. Applying AI to IoT data can dramatically improve insights and performance.

It can be challenging to deploy these capabilities across global operations, particularly when the sensed products are in dispersed customer sites. However, many organizations are seeing success with robust platforms designed to ingest data, discover patterns and remotely deploy new analytic models. To learn more, read the examples included in this e-book from [Siemens Healthineers](#) and [Volvo Trucks](#).



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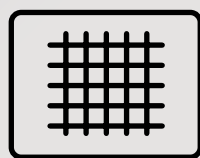
Anomaly detection

Anomaly detection focuses on the benefits of finding patterns that deviate from historical behavior within targeted data sets. But it's not just a data science project solely focused on generating a model or algorithm - it's about discovering valuable business insights in hidden patterns.

Anomaly detection is a vital application that's important to every industry, including manufacturers trying to maximize equipment performance, health care organizations addressing alert fatigue in hospitals and rail companies proactively managing tracks to maximize safety. For example, [Network Rail uses anomaly detection to deliver value in its AIoT deployment](#).

In addition to the industrial applications mentioned here, SAS recently [applied anomaly detection to beehive health](#) using [SAS Event Stream Processing](#) to analyze streaming data from the hive in real time to detect abnormalities in weight, temperature and humidity so beekeepers can take immediate action.

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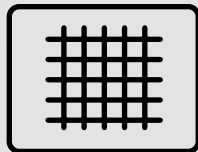
Grid reliability: Improving production efficiency

Managing a rapidly growing fleet of power-generation assets from country to country requires useful insights in real time or near-real time. And many organizations have strong imperatives to operate, maintain, manage and control assets at a central level. Leveraging AIoT, utilities can solve their operational challenges and realize numerous benefits, including:

- Quickly viewing insights about the performance of power-generating units in detail by operations analysts.
- Reducing the time to complete wind power generation unit analysis from one month to two days.
- Understanding where assets are underperforming and quickly issuing maintenance requests to country technology teams.
- Directly contributing to top-line revenue growth by improving production efficiencies.



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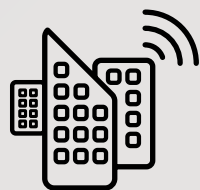


Grid reliability: Increasing forecasting accuracy

The gap between forecast and actual demand is a constant problem many companies and governments face. Reducing that gap can translate to millions in savings and significant improvements in customer and citizen experience. Analytics allows organizations to strike the right balance between profitability, efficiency, and fulfilling customer needs and social obligations.

With better marketing strategies and more targeted communications, utilities can sharpen offers and deliver valuable benefits to customers - an area that's increasingly important as deregulation of the energy sector adds pressure to improve service quality and customer relations. For an example of balancing supply and demand (and saving millions in the process), see how [Eneo Energy](#) is accelerating its AIoT deployment with [SAS Energy Forecasting](#).

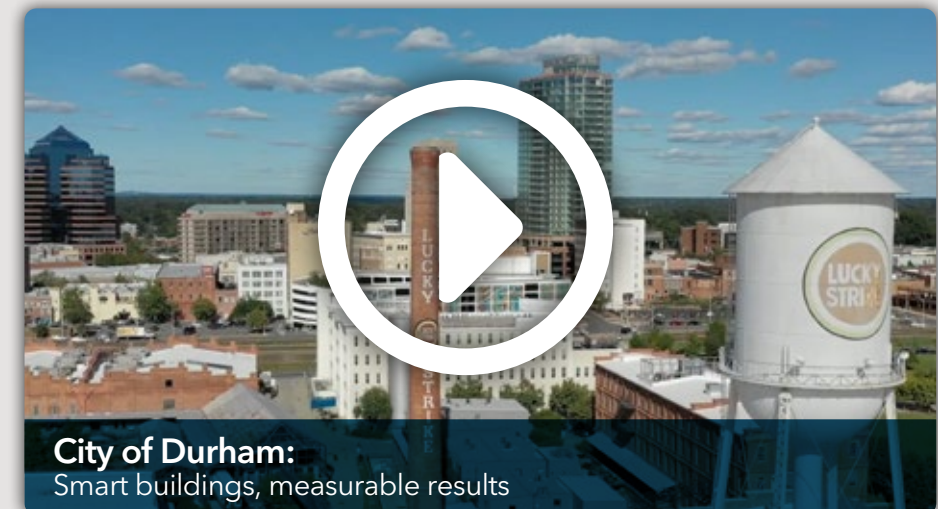
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Connected buildings: Balancing energy and operational efficiency

Many organizations that own or operate buildings are using advanced analytics to balance energy and operational efficiency with comfort and safety in a way that maximizes employee productivity and sales revenue. For example, the city of Durham, NC, has expanded its use of [SAS Analytics for IoT](#) because the city has seen how properly managing buildings through analytics can improve employee productivity and reduce operating costs. Watch the video to learn more.

Connected buildings can also grow revenue - and customer loyalty - via a personalized guest experience. [SAS® Customer Intelligence](#) - built on [SAS Event Stream Processing](#), [SAS Intelligent Decisioning](#) and [SAS® Visual Analytics](#) - can infer the preferences of customers from systems such as point-of-sale, Wi-Fi, rewards programs and more so that the connected building can adapt and respond to each guest. Connected building systems can, for example, remember preferred room temperature settings, play favorite music stations or offer preferred welcome beverages after guest arrival. Watch the video to see connected buildings in action at Sinclair Hotel.



City of Durham:
Smart buildings, measurable results



The Sinclair Hotel:
Bringing location analytics to hospitality



Improving health and medical outcomes

Value-based care and patient-centricity have emerged as global paradigms to address how health care is paid for and delivered. The transition to value-based care promises to drive down costs and improve patient outcomes. It will motivate care providers to better engage patients and more consistently adopt evidence-based medicine in diagnosis and treatment decisions.

A major driving force behind this transformation will be the emergence of the Internet of Medical Things (IoMT) and the concept of digital health or, more specifically, connectivity between patients, clinicians, machines and care environments. Digital health and the IoMT will be critical in addressing many challenges and opportunities related to care delivery, inefficiencies, access, cost, quality and personalization.

The time to act is now

As you can see from these examples, some companies are well on their way to large-scale deployment of AIoT capabilities. As these companies realized their first broad AIoT victories, they gained a competitive edge as a result, and are now actively adopting AIoT in more areas of their organizations, such as strategic planning.

Organizations in every industry are facing unprecedented times and rapid change. As digital transformation takes hold, the race to operationalize AIoT capabilities may be one of the defining trends in business and IT over the next decade.

Recommendations:

- 1 Learn from the early adopters and leaders.** They've taken the initial technology and learning curve hit. There's less risk if you use their experience as a road map.
- 2 You don't have to do it all at once.** Start small, but think big and scale to meet business objectives.
- 3 Engage ecosystem partners.** None of the success stories in AIoT happened in a vacuum. The technology and analytics markets have made significant strides in developing capabilities and experience that have greatly reduced barriers to entry, obstacles to success and the time it takes to achieve a valuable outcome.



**Building materials leader optimizes
production using analytics**

USG Corporation relies on the SAS® Analytics Platform to improve its manufacturing process and reduce downtime, costs and energy consumption.

From skyscrapers and houses to the factory floor, [USG Corporation](#) is using advanced data to not only create new products – like its ubiquitous Sheetrock® brand drywall – but also to optimize every step of the manufacturing process for maximum quality and profitability.

“We help the construction industry build stronger, safer and more sustainable communities,” says Paul Reed, Principal Technical Manager at USG. “We hold more than 2,900 patents for our products, like lifesaving fireproofing systems, mold and moisture-proof systems that keep air cleaner, and eco-friendly products that help builders meet standards for coveted environmental ratings. To do that, we have to fully understand how our products are made and how they work. That requires [big data](#) and [predictive analytics](#).”

Removing guesswork with analytics

The benefits of [analytics](#) in manufacturing directly address the challenges. Facing a barrage of global competition, USG and other manufacturers must produce high-quality products at an affordable price. This requires confidently detecting, resolving, predicting and preventing quality and reliability issues while minimizing costs.

Easier said than done, notes Reed. Offline product testing requires a tremendous amount of labor, time and materials. In addition, less-than-ideal production results can require a complete reset of the line, creating unnecessary delays and an additional cost burden in labor and scraps. Plus, an inefficient production routine drives up energy costs.

“Raw materials are one of our biggest input costs, so even the smallest improvements are very valuable to us,” Reed says.

To enhance its production process, USG is applying the power of analytics. By using the open and robust [SAS Analytics Platform](#), USG can remove guesswork and optimize its production investments while balancing the need to maximize choices for its data scientists and analysts to manage data, navigate discovery and ensure deployment.

A mathematically optimal procedure

USG uses the predictive modeling capabilities of SAS to streamline manufacturing while predicting product quality.

In the past, the manufacturer would test different materials and make adjustments to ensure products met quality standards. Some of the quality tests can take 24 hours or longer to perform. With SAS, USG can now predict the test result for the line operators in real time.



Paul Reed,
Principal Technical Manager,
USG

“TO CREATE THE BEST QUALITY PRODUCTS IN THE MOST EFFICIENT WAY, WE HAVE TO FULLY UNDERSTAND HOW OUR PRODUCTS ARE MADE AND HOW THEY WORK. THAT REQUIRES USING BIG DATA AND PREDICTIVE ANALYTICS.”

USG can analyze plant inputs, such as flow rates and raw material additives, to predict quality outcomes before production even starts. The manufacturer does this by deploying optimization models using SAS Model Manager - a solution that enables USG data scientists to manage their repository of models and automatically deploy the best model into production.

Using [SAS Model Manager](#), USG can test the performance of challenger models and select the top performer. USG can single out the optimal formulation in raw materials and adjust its production process in near-real time. This allows the company to manufacture products that meet its quality standards at the lowest possible price.

“Over a six-month period, our product and manufacturing methods are completely different depending on what materials and goals we have at that time. The SAS Platform is adaptable through the choices it affords in techniques, data

sources, deployment and even programming languages, while also delivering the speed and scalability that allows us to control outcomes.

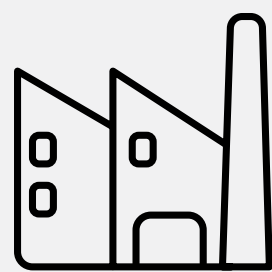
“Use of predictive analytics has improved the quality, efficiency, safety and cost of our products. We’ve established a procedure that is mathematically optimal. By having the automated system calculating results on a regular basis, our plants always have the best information to drive manufacturing processes.”

Building on success

What started as a successful pilot was rapidly deployed to around 20 USG plants within a year.

The true power of the predictive analytics and optimization system quickly became evident in the field, where the cost of raw materials and production styles vary by location. “The SAS Platform enabled us to analyze local plant costs along-

USG Facts & Figures



1902
year founded



2,900+
active patents



3.3 billion
revenue in 2018

side local production options to find the lowest-cost formula that meets our critical-to-quality parameters at each plant,” Reed notes.

While the operational personnel are thrilled with the quality results, the IT personnel are similarly pleased with the performance of the computing environment. To generate the necessary computing power, USG relies on [SAS Grid Manager](#) for a centrally managed grid computing environment with workload balancing, high availability and faster processing.

“We have SAS making predictions 24 hours a day, seven days a week. It’s a tremendous amount of computational effort to provide these answers for the plants.”

To gain a transparent view of production results and operational metrics, operators and executives at USG use [SAS Visual Analytics](#), which is accessible and easy to use for everyone from line personnel to data scientists. The interac-

tive dashboards enable business users to be self-sufficient in trend analysis and allow Six Sigma programs to excel.

“If performance drops in any area, the prescriptive functions of SAS Visual Analytics tell us what we need to change to maintain compliance,” Reed says. “It empowers our operators with the array of choices needed to deal with a wide variety of situations, and all that goes right to the bottom line.”

USG prides itself on applying the latest technology to ensure its manufacturing plants are automated, modernized and ready to meet demand. “We have to maintain our future-focused approach,” Reed says. “For instance, the [Internet of Things](#) - connected devices and machines. We’re exploring how we want to expand our products to include smart functions. There are so many more opportunities out there, and analytics works hand in hand with them.”





**Automated laboratories
improve uptime with analytics**

Laboratory testing of blood and other fluids has evolved from a manual, labor-intensive process to an automated, high-volume process that allows modern labs to test thousands of samples per day. Today's clinical diagnostic systems optimize workflow and clinical performance by automatically reading labels, moving samples along a conveyer belt, running tests, returning vials to storage and compiling results.

Because laboratories rely on these systems to get results back to doctors, clinicians and researchers as quickly and accurately as possible, any amount of downtime is unacceptable.

That's why Siemens Healthineers set out to build predictive service and maintenance capabilities into its Atellica Solution, an advanced system for immunoassay and clinical chemistry analysis. Now, malfunctions are a rare exception for users of the system.

In collaboration with data analytics and data science experts mayato, Siemens Healthineers developed the predictive service and maintenance solution to increase system availability and reduce service costs. The solution is based on the [SAS® Analytics Platform](#).

Clinical laboratory diagnostics with a vision

Among the world's leading companies in health care, Siemens Healthineers provides imaging for diagnosis and therapy, as well as clinical laboratory diagnostics. The Atellica Solution optimizes workflow and clinical performance by transporting samples along a bidirectional magnetic conveyer belt and tracking every sample with a multicamera vision system. It intelligently schedules and manages each sample throughout the testing process.

Using these innovative technologies, the system can perform up to 440 tests per hour, the highest productivity per square meter in the industry.

The predictive service and maintenance component of the system, designed using SAS, helps make sure throughput is uninterrupted and productivity remains as high as possible.

Proactive service on the SAS® Analytics Platform

Early in the development phase, product development engineers at Siemens Healthineers defined what data could be relevant for predictive maintenance. This meant necessary sensors were integrated and the system connected to the Siemens Healthineers database to enable data processing.

Once the first development phase for the product series was complete, the next step was the dedicated development of the predictive service and maintenance solution. Here, Siemens Healthineers chose the SAS Platform, including [SAS Data Management technologies](#), [SAS Visual Analytics](#) and [SAS® Enterprise Guide®](#).

Project implementation with mayato

For the conceptual design and implementation, Siemens Healthineers chose SAS partner mayato GmbH, because they had already worked successfully together on earlier projects. The mayato team handled the complete process, including:

- Implementing the data loading points.
- Setting up the predictive service and maintenance framework.
- Preparing the data for reporting.

To work efficiently, the team took an iterative approach, where the basic requirements were first determined, and then modified during the project as needed.

“Because Siemens Healthineers uses the SAS Analytics Platform for data analysis, the cornerstone of the project was already set,” explains mayato Project Lead Paolo Vacilotto. “We were therefore able to focus completely on the sustainable design of the framework, to ensure high performance and comprehensive configuration options.”

Moving from reactive to proactive maintenance

The predictive service and maintenance capabilities inside the Atellica solution are fully automated and integrated into a system that Siemens calls the Guardian Program. As part of this program, country-level service organizations for Siemens Healthineers provide maintenance services and interact with the users.

Torben Scaffidi, Head of Lab Operation Analytics at Siemens Healthineers in Erlangen, Germany, explains: “Laboratory diagnostics systems transport many fluids and comprise many different components. That’s why the service and maintenance concept is highly complex. Our goal was to transform a service that had previously been predominantly reactive into a proactive concept.”

The predictive maintenance data is transmitted to respective country databases via the Siemens Healthineers Smart Remote Service following regional regulatory requirements. The data comes from various sources, including prestructured sensor data or log files.

The data is then transferred into SAS and analyzed using models built by Healthineers data scientists to predict failure probabilities. The results are processed, visualized and made available via a web-based front end.

Automated warnings by email

To simplify and automate the process further, mayato developed an email alerting service that sends automatic warnings with detailed information as soon as anything requires action.

In addition, the solution uses incoming information to analyze key performance indicators and report results with SAS Visual Analytics. Initial results include:

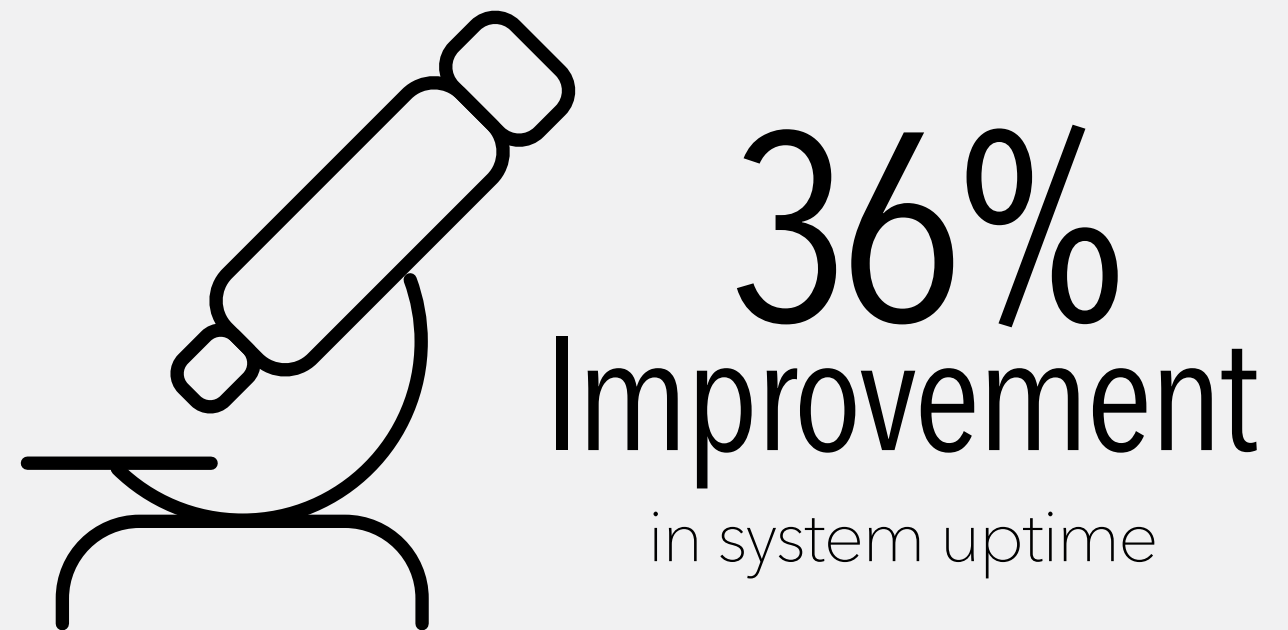
- 58 system and process components are monitored proactively.
- 36% less system downtime compared to the reactive service.
- Optimized service technician deployment, because they know in advance which parts are needed at a particular location.

A successful project

Siemens Healthineers started with a goal of building predictive service and maintenance directly into its solutions. The SAS Analytics Platform provided an ideal way to integrate analytics into the product and scale as the system changes. And, finally, mayato’s structured implementation ensured tremendous flexibility.

The solution revolves around a continuous expansion of analytical data models, providing a modular structure and intuitive framework so the Siemens Healthineers team can make modifications on its own.

“We enjoy working with the mayato team,” says Scaffidi. “We value the competence and reliability of the consultants. Especially in such a dynamic environment, it’s essential to remain flexible, without losing sight of the structure - and we succeeded again in this project.”





**IoT data with AI reduces downtime,
helps truckers keep on trucking**

Volvo Trucks uses sensor data and SAS® AI solutions to minimize unplanned downtime.

Every day, millions of trucks transport fuel, produce, electronics and other essentials across highways. From farms and restaurants to retailers and hospitals, nearly every part of the economy relies on the efficient movement of freight to function.

Unplanned downtime can exact a tremendous toll on fleet operators and their customers, who depend on timely deliveries. Operators can be out thousands of dollars a day when a truck with scheduled hauls unexpectedly breaks down. The impact on smaller regional owners can be even greater because they're less likely than larger operators to have spare vehicles on hand.

Volvo Trucks, a subsidiary of the Swedish manufacturer AB Volvo, has met this challenge with remote diagnostic and preventive maintenance services based on [Internet of Things \(IoT\)](#) technologies with [analytics](#) and [artificial intelligence \(AI\)](#) from SAS. With these solutions, Volvo Trucks can help its customers maximize a vehicle's time on the road and minimize the costs of service disruptions by servicing connected vehicles more efficiently, accurately and proactively.

Remote diagnostics as a service

Volvo Trucks uses telematics to deliver unparalleled support services with the purchase of each truck. The company launched its Remote Diagnostics service with about 4,000 vehicles in 2012. Today, it supports more than 100,000 trucks with the always-on service that operates 24 hours a day, 365 days a year.

"One of the reasons customers buy Volvo Trucks is for uptime," says Conal Deedy, Director of Connected Vehicle Services for Volvo Trucks North America. "They have a job to do. It's important to keep the truck running to complete their mission - or ensure the least disturbance to the business if something happens on the road."

Volvo Trucks' service monitors data from each truck for fault codes triggered when something is amiss with one of the vehicle's major systems, such as the engine, aftertreatment or transmission. Thousands of sensors on each truck collect streaming IoT data in real time to provide context. This data includes where the event happened and what conditions were present during the fault - including altitude, ambient air temperature, truck gear, RPM level and torque load - to provide context for diagnosis.

"We process a very large amount of data through the [SAS Analytics Platform](#)," Deedy says. "We quickly diagnose the fault and its severity with detailed information and a recommended action plan. The agents in our 24/7 Uptime



Conal Deedy,

*Director of Connected Vehicle Services,
Volvo Trucks North America*

"OUR ENGINEERS CAN NOW SEE ISSUES BEFORE THEY IMPACT CUSTOMER OPERATIONS AND CHANGE THE TRUCK'S DESIGN, SO WE HAVE THE BEST PRODUCT ON THE ROAD."

Center explain the results to the customer and develop a plan for addressing it with the least disturbance.” Agents may send detailed repair instructions to a local repair facility to help it complete the repair more efficiently and effectively. If customers perform the repairs, the detailed information can be sent directly to them. If an issue is software-related, the service can update the truck remotely - without disturbing operations - and quickly get it back on the road.

As the service has expanded, says Deedy, “SAS has not only allowed us to deliver diagnoses accurately and efficiently at scale, it also has allowed us to address more parts and failure modes than we could handle earlier.”

Proactively preventing problems

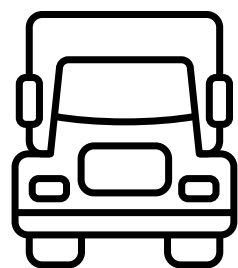
While these services help customers recover from problems faster, analytics also keeps problems from arising in the first place.

The company helps customers understand how the equipment should perform based on its specification and uses analytics to determine patterns based on actual equipment usage. It also applies analytics to examine common traits of trucks in the field to improve truck design. The analysis identifies emerging issues across an engine type or model year much quicker with real-time streaming data and communicates these findings to the engineering group.

“Our engineers can now see issues before they impact customer operations and change the truck’s design so we have the best product on the road,” Deedy says.

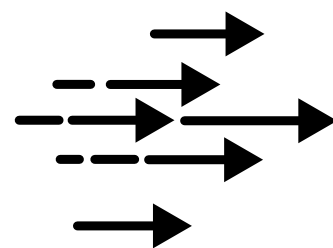
Volvo Trucks

Facts & Figures



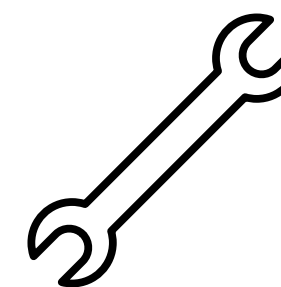
100,000

trucks supported with
remote diagnostics



Millions

of records processed
in real time



25%

reduction in repair time

A service that customers can't live without

IoT technologies paired with SAS Analytics have delivered impressive results for Volvo Trucks. "For monitored faults, we've reduced diagnostic time 70% and repair time 25% when using SAS to process millions of records in real time, and point the agent to what needs to be done," Deedy says. "That's a huge savings for customers who want to have a truck serviced quickly and accurately."

By using learning and automation capabilities that are integral to artificial intelligence, the company's analytically driven services will keep pace with the changing needs of their customers, keeping them happy for a long time to come.

"[Machine learning](#) is an area we're putting a lot of emphasis on right now, using the SAS Analytics Platform," Deedy says. "We are uncovering hidden insights in our data and merging that with the truck knowledge from our engineering group. Together we are in a much better situation to understand exactly what the data is telling us. The future is extremely exciting, and the sky's the limit."





Forecasting accuracy brings 'new energy' to Cameroon

Energy supplier Eneo balances supply and demand to boost efficiency, save millions and improve reliability with SAS® Energy Forecasting.

Africa remains a continent with great energy potential yet to be developed. In Cameroon, a developing nation of 24 million on the coast of Central Africa, leading energy company Eneo is on a mission to change this. With a name meaning “new energy,” the country’s foremost electricity supplier is using SAS technology to provide more reliable energy and high-quality services to 1.2 million customers and growing.

In the past, the energy supplier concentrated on growth and never used analytics. Now it’s embracing analytics to better forecast energy demand, a capability that ultimately has broad economic and social implications for the energy-starved nation of Cameroon.

“Analytics allows us to strike the right balance between profitability and fulfilling our social obligations,” explains Duclaire Djeuga, Director of Planning and Regulation at Eneo. “Managing the needs of our market is a permanent challenge for our business, and SAS is instrumental in this.”

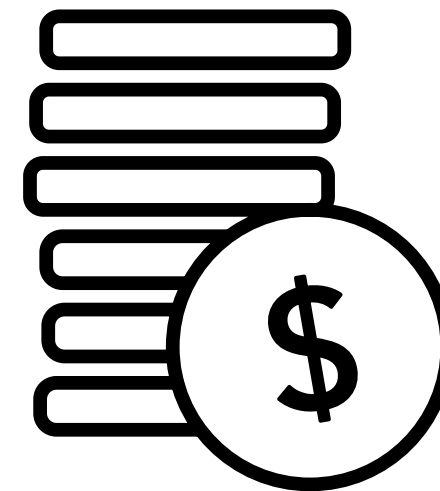
Forecasting accuracy cause for optimism

For Eneo, the daily gap between forecast and actual demand was 8% on average before SAS. With [SAS Energy Forecasting](#), the company is equipped to reduce that gap to less than 2%, thanks to more flexible modeling by geographical area and customer type, and the ability to factor in external variables such as climate and one-off events.

The test period is now complete and initial simulations are very encouraging, says Léonie Essama, Business Intelligence Manager. “We’ve greatly improved our accuracy. And whereas it used to take us three days to produce a monthly forecast, we can now do it in one hour.”

This boost in efficiency benefits the company and customers alike. Better forecasting means more reliable energy for businesses and households. Plus, by pinpointing areas with high or growing demand, the company can plan to generate more power in areas that need it most.

All this is grounds for optimism with the peak energy consumption period on the horizon. The company expects to further hone its forecasting process ahead of the hot season once it’s fully explored the software’s capabilities and optimized model selection.



\$7 million saved

in the first few months

Gains in marketing and operating efficiency

Eneo's marketing has also entered the analytics era. Customer segmentation is underway and will be used to implement better marketing strategies and more targeted communications - areas that are increasingly important with the deregulation of the energy sector, which adds pressure on companies to improve service quality and customer relations.

"We have all kinds of data on our customers and had no way of using it ... until now," Essama says. "With SAS, we will finally have a detailed understanding of our customers and their needs."

Analytics will also be used to drive operational efficiencies. The BI team now relies on SAS to streamline the data mining process and develop models quickly. At the outset this will help the company reduce the bad debt that's accumulated in local branches because of long data processing times.

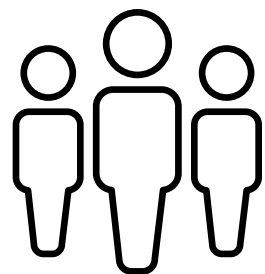
"Before SAS, we spent 80% of our time processing data and just 20% analyzing it. Those percentages have now flip-flopped, freeing up more time for us to plan and launch data-driven operational activities," Essama says.

A democratic approach to analytics

Analytics is becoming a daily fixture for hundreds of Eneo employees. In addition to energy forecasting, the company also uses analytics for financial modeling, incident handling and fraud detection. Operational teams use analytics to improve service quality - particularly in areas with the need for real-time processing - while branch managers benefit from the intuitive dashboarding capabilities of [SAS Visual Analytics](#).

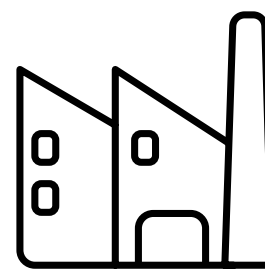
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Facts & Figures



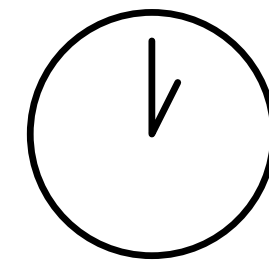
1.2 million

customers



39

power plants



1 hour

to produce monthly forecast

"The platform is very user-friendly and is being leveraged by people who don't have particular skills in statistics," notes Essama, who has used SAS for 15 years.

With analytics brightening every part of the business, the energy supplier is implementing an extensive training plan to support the cultural shift. "We've made a strategic investment in SAS," Essama concludes. "Now it's time for us to achieve some tangible results and quick wins, and give SAS the position it deserves within the business."

"ANALYTICS ALLOWS US TO STRIKE THE RIGHT BALANCE BETWEEN PROFITABILITY AND FULFILLING OUR SOCIAL OBLIGATIONS."

Duclaire Djeuga,

*Director of Planning and Regulation,
Eneo*



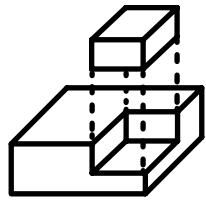


Next steps for your AIoT journey

As you begin or grow your AIoT journey, here are a few recommendations and cautions to consider.

To accelerate the adoption, use and full deployment of AIoT:

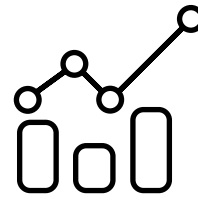
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Look for easy wins and build upon success.

Starting with easy wins allows you to test the waters for AIoT, build upon success and keep the AIoT excitement alive inside your organization. When you start small, it's okay to fail and learn from these errors, which leads to better AIoT project success. As your AIoT projects succeed, make sure you can scale to meet objectives - and share your wins with the rest of the organization!

2



Establish good metrics.

Establish measures and metrics for AIoT to keep you on track and help determine the success of your AIoT initiatives. This will help facilitate conversations with managerial and executive leadership for project justification and expansions.

3

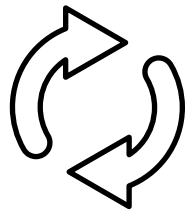


Take care of your data.

If your AIoT projects are stalled, you may want to take a step back and look at the data. Data is a vital part of any AIoT project, but many organizations overlook the ramifications that poor data can have on analytics results. If your projects are not measuring up, look at the data feeding AIoT, because that could be the problem that's hurting your projects.

As you continue on your AIoT journey, try to avoid these obstacles:

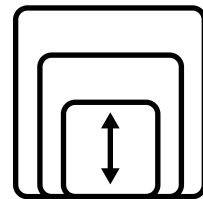
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Getting stuck in pilot purgatory.

If you can't move your AIoT project through the project life cycle, then you're stuck in pilot purgatory. This can happen when you don't have good metrics for measuring success, or you didn't plan the pilot to meet a real business need or problem - or bad data is causing your pilot to get stuck. And, finally, make sure you can scale your pilot.

2



Doing too much.

Starting small is the best approach to getting AIoT off the ground. If you start with too large of a project, you may find yourself in pilot purgatory and jeopardize your AIoT success. But starting small doesn't mean you can't think big.

3



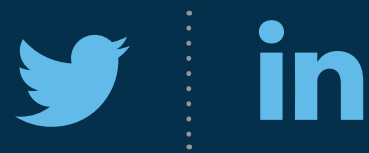
Skipping the plan.

Create a plan that outlines why you're doing AIoT and the value you expect to get from it. Doing AIoT because it's the newest thing and everyone else is doing it is going to be a wasted academic exercise. Make sure your plan is well documented and visible to the larger team. Use the plan to ensure you're meeting your objectives. If you have a plan and don't use it, then your AIoT projects won't bring value to your organization.

Getting started can be your first hurdle. But remember, you don't have to start from scratch. Capabilities are in place now and ecosystems are already formed to help accelerate your efforts. If your organization is still watching, waiting and plotting its first AIoT moves, use the recommendations and examples of success in this e-book to get started. Be fearless, think big and start small, and make sure you can scale. Have an executable plan that's aligned to your objectives, and you'll soon be on the road to your own AIoT success.

To learn more about how SAS can accelerate your AIoT deployment, visit sas.com/iotsolutions.

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