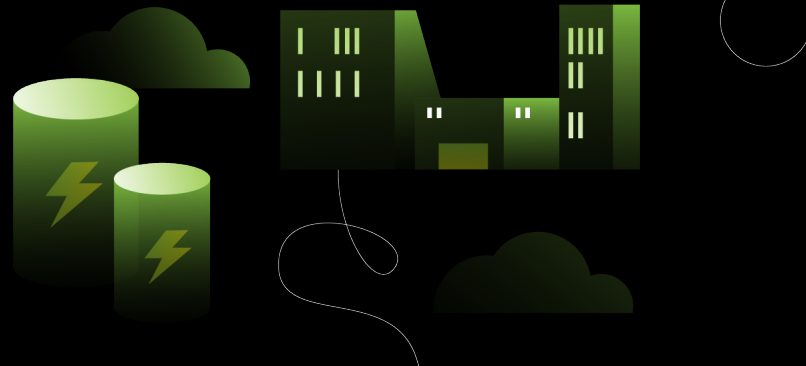


BRIGGS & STRATTON SIMPLIFIES RENEWABLE ESS

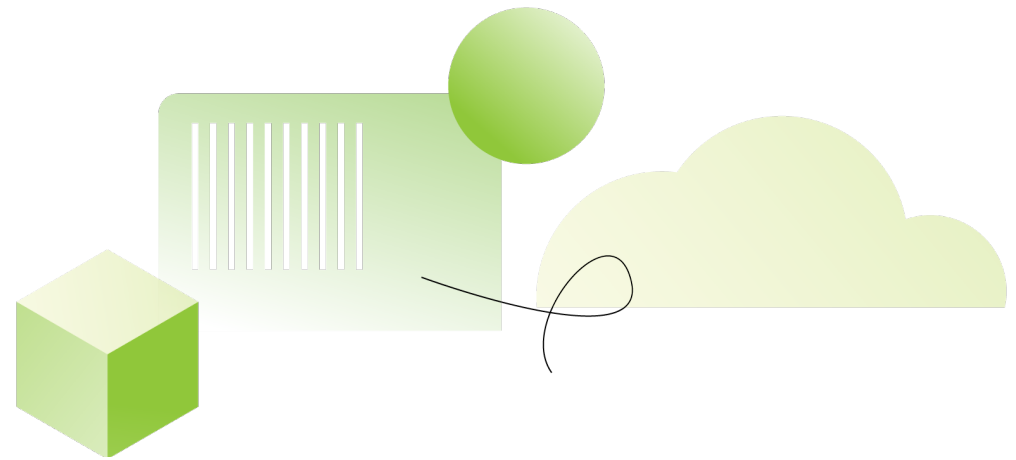
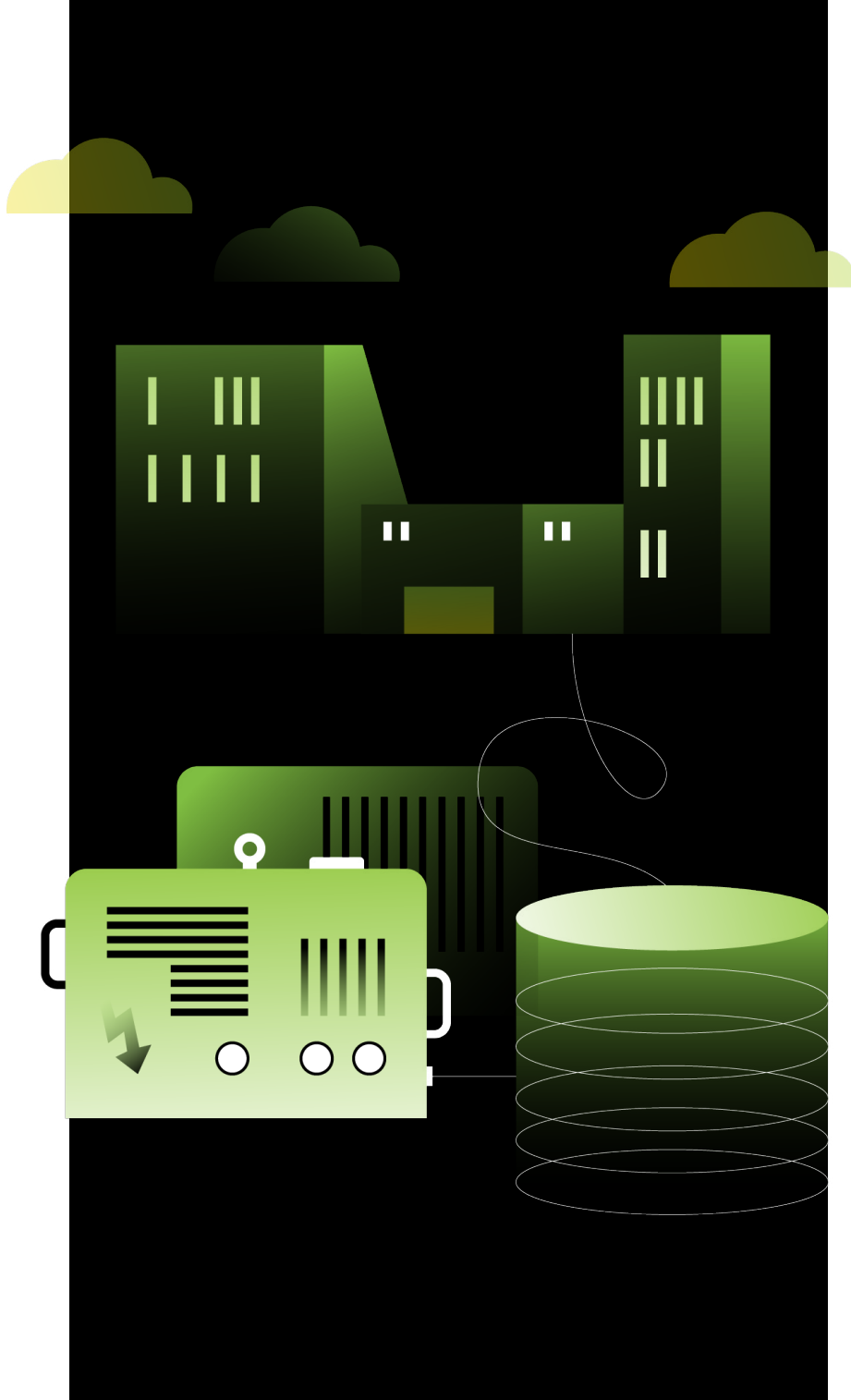
SoftServe's IoT-enabled solution positions Briggs & Stratton as the renewable energy sector's next ESS leader



BRIGGS & STRATTON
ENERGY SOLUTIONS



softserve



Briggs & Stratton is a market leader in producing standby generators and power equipment for residential, commercial, and industrial applications. Part of why they've lasted over 115 years is because they remain agile and embrace innovation. Their longevity is fueled by searching for what's next.

Agility and innovation require understanding industry changes and knowing when to pivot. Experts are predicting that in the next five years, renewable energy sources will make up over 90% of global electricity expansion. Seeing these trends, Briggs & Stratton's newly renamed Energy Solutions business unit knew their next move. They acquired SimpliPhi Power, an energy equipment and solutions manufacturer already providing batteries for solar, grid, and wind power energy storage systems (ESS).

Bringing more than a century of experience and expertise, Briggs & Stratton's move into renewable energy offers the opportunity to tackle issues the entire ESS industry faces.

CHALLENGES

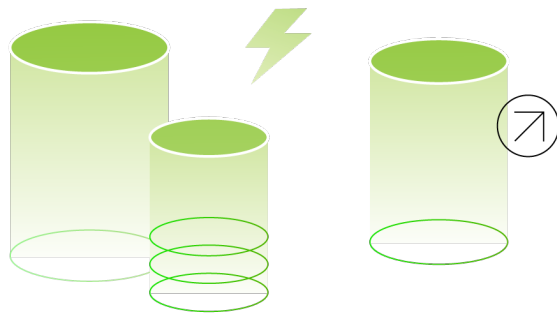
An acquisition means inheriting the good along with a challenge or two.

Installers were frustrated by complicated ESS commissioning processes. Longer time spent on complicated installations leads to lower productivity and decreased revenue. Ultimately, dealers and installers would simply avoid recommending these systems.

Service providers also wanted access to deeper operational understanding, with guidance to quickly identify the source of a problem. Pinpointing what happened when something went wrong was difficult without an analytics and notification system.

Homeowners had similar requests, wanting to easily see and understand how to use their ESS system.

Each group needed a solution to overcome these common ESS challenges.



SOLUTION

Meeting everyone's needs required an IoT-enabled platform with an intuitive digital interface. It had to deliver straightforward installation for dealers and installers, comprehensive analytics for service providers, and seamless management tools for homeowners.

While other adaptable IoT platforms already existed in the market, a custom solution gave Briggs & Stratton control over the source code. Keeping the processes and end-product in-house meant easier software upgrades and better integration with other internal systems and products.

It built the foundation for a solution providing enhanced usability for service providers and energy management optimization for homeowners, designed to be user-centric with clean aesthetics.

This custom-built, vertically integrated, and scalable IoT system would offer Briggs & Stratton a strategic competitive differentiation.

Now it was time to find the right specialists to build it.



PROJECT

SoftServe was the recommendation given to the Briggs & Stratton team when they reached out to their collaborative partners at Google. A meeting was quickly set, and our technical experts got to work.

POC AND DISCOVERY PHASE

The project's ambitious scope — combining everything needed into a single IoT platform — required a successful proof of concept (PoC) as the first step.

Once the PoC was proven, we moved to the discovery phase, collaborating with the Briggs & Stratton team to craft a detailed architectural vision for each element. This essential preparatory step detailed an in-depth scope estimation for each phase from idea to implementation.

MVP PHASE

The SoftServe team then built a minimum viable product (MVP) to validate the architectural vision. Engineers rely on MVPs to identify issues early in a product or platform's development cycle, making troubleshooting faster and easier.

The MVP buildout quickly uncovered a roadblock. To integrate the MVP with applications, the team required inverter specifications. Inverters are a complex component of any energy storage system and are required for an ESS to convert stored energy into grid-compatible electricity.

However, those inverters were actively being developed at the same time as the MVP. This meant that many of the crucial technical details required to integrate the IoT platform with the

ESS would have to wait. To minimize delays, we shifted focus to resolving inconsistencies preventing the integration of the MVP's backend, frontend, and gateway. Collaborative discussions between SoftServe and Briggs & Stratton yielded innovative approaches that our experts deftly applied using agile mindset tools.

At the same time, we adjusted various requirements for a broader range of functionality, such as limit values for voltages, parallel inverter support, and status formulas. We also incorporated a "non-communicating battery" mode, meaning end users could still use our IoT solution with systems that utilize less sophisticated, lower-cost batteries.

The lagging inverter specifications posed a timeline threat, but our flexibility ensured success. SoftServe produced the completed MVP on time, even though the final information arrived with less than 60 days to spare.



MVP TESTING

The MVP mobile app had to be connected to an actual ESS before full user acceptance testing (UAT) could begin. This presented a challenge almost as big as the missing inverter specifications. The Briggs & Stratton project team was based in the U.S., while our SoftServe project counterparts were in the European Union.

Shipping logistics combined with U.S. and EU product licensing law disparities made getting an ESS onsite for SoftServe's testing unlikely. While frustrating, the deep collaborative relationship the two teams had already developed made it easier to find a resolution.

The simplest solution is often best, so the Briggs & Stratton team set up remote ESS access for the European development team. From there, our experts were able to test and ensure compatible integration with the IoT platform halfway around the world in Ukraine.

UAT PHASE

The MVP app and the ESS successfully worked together, and now it was time for real-world validation. We invited service providers and homeowners to try out the platform.

Now that this app was being used with a broader array of actual devices, user feedback led to greater platform improvements. This phase's testing also armed the SoftServe team with information on additional valuable features.

To provide a seamless and practical experience for dealers, installers, and homeowners, SoftServe added:

- Security improvements
- Apple and Google integrations
- Bluetooth stabilization
- Forced equipment update capability
- Built-in support for zero battery mode and parallel inverters
- Dashboard to view active faults and warnings
- Time-of-use (TOU) feature to optimize energy consumption costs
- Methods for:
 - IP address identification
 - Site and system deletion
 - Notification adjustments
 - ESS configuration issue fixes
 - Battery reserve level settings
 - Viewing the status of batteries, inverters, and gateways
 - Simultaneous updates for inverters and batteries

We also introduced tools for better functionality, such as a web app and demo mode. The demo mode allows service providers to easily offer training specific to dealers, installers, or homeowners.

OUTCOME

Named EnergyTrak™, this cloud-based, cross-platform energy management solution easily monitors and controls the SimpliPHI Energy Storage System in both residential and commercial applications.

With real-time energy consumption and cost data, the app's dashboard offers comprehensive ESS control using easy-to-understand prompts and notifications. Users can identify inefficiencies and quickly reconfigure their system's operation. Implementing these optimization measures saves money and reduces waste. The modular design of the ESS components makes the system accessible for a wide variety of customers and easily scalable for energy independence.

You can further reduce energy costs by assessing and avoiding higher-rate TOU utility charges or accessing essential backup power when needed. Commercial users can create and oversee multiple industrial operations and grid profiles. Plus, the smart control system makes installation, commissioning, and setup fast and secure.



RESULTS

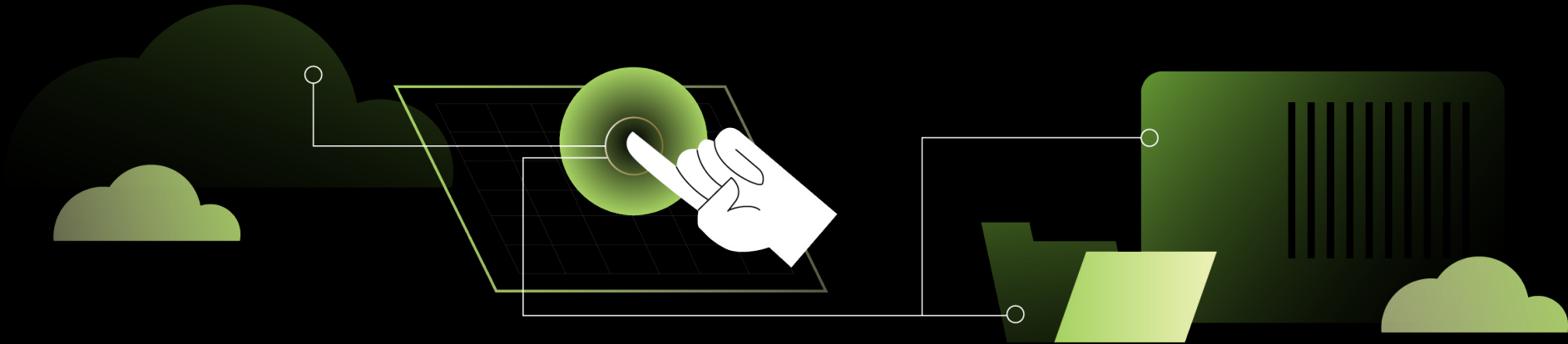
Partnering with SoftServe, Briggs & Stratton custom-built a seamless IoT platform featuring an intuitive digital interface that simplifies ESS installation and management for dealers, installers, and homeowners.

Our team supported Briggs & Stratton on the backend with a no-ops-required, scalable, agile, and reliable cloud architecture. This solution provides real-time data processing and delivery to the IoT mobile app, with a simple Wi-Fi setup and the option for hard-wired ethernet connectivity.

An intelligent control system facilitates convenient ESS provisioning, commissioning, monitoring, and management. With operating modes that enable battery backup power, solar power, or power from the grid, users can easily change the energy their ESS consumes.

Our expert approach to experience design simplified the learning curve with demo modes customized by user types. This also resolved the complicated commissioning process that was previously problematic for service providers. Now, installers need only a smartphone to successfully commission the system in just five steps.

Users can decide what to track with customizable system monitoring notifications. With dual monitoring, the app also connects end users with service providers for remote troubleshooting and reconfiguration. Codes, regulations, and safety concerns may change, but the customers' systems will remain compliant using automatic over-the-air firmware updates.



CONCLUSION

Gaining a competitive edge in an emerging vertical takes more than incremental improvement. Innovation demands moving beyond what's already on the market.

Briggs & Stratton took that leap, introducing a single app for energy storage system installation and management. Innovation also requires choosing the right technology partner. SoftServe's collaborative approach to ideation and execution provided Briggs & Stratton with a solution that positions them as industry leaders.

Now dealers can sell more products, installers can commission them faster and more easily, and homeowners can better manage their systems.

Today's standard technology solutions won't prepare you to capture tomorrow's unique business opportunities. Find that opportunity. SoftServe's deep domain expertise will get you there.



LET'S TALK

About SoftServe

We are advisors, engineers, and designers who deliver innovation, quality, and speed — elevating and accelerating our clients' digital journeys.

Our approach is built on a foundation of empathetic, human-focused experience design that ensures value and continuity from concept to release.

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