Case Study

BUDDERFLY USES AI TO DELIVER SUPERIOR ENERGY-AS-A-SERVICE RESULTS FOR THEIR CLIENTS

SoftServe delivers smarter data for smarter energy management

BUDDERFLY softserve

Did you know there are companies dedicated to improving how businesses use energy?

Budderfly is leading the charge in energy management innovation, transforming how restaurants, gyms, schools, and other businesses use and save energy through their energy-as-a-service (EaaS) model. This unique approach takes on the financial risk of implementing energy-saving technologies, allowing clients to benefit without any upfront capital investment.

By providing cutting-edge energy-saving technology and equipment at no initial cost, Budderfly helps businesses get closer to net zero. This includes battle-tested IoT devices that drive energy savings even further when paired with advanced analytics.

Delivering EaaS and optimizing energy consumption is multifaceted, involving everything from surveying buildings to installing and configuring energy-efficient devices, technology, and equipment. Its success lies in data collection, analysis, and predictive modeling.

Read on to discover how Budderfly improved its energy management services by addressing three key data challenges. Learn how SoftServe used machine learning models to design better, more accurate energy and cost-saving data analyses, providing Budderfly's clients with improved insights and services.

TACKLING 3 KEY DATA CHALLENGES

Budderfly knew that using advanced technologies for calculations and analysis would enhance their services and boost client results. They identified three key challenges:

- **Baseline calculations**
- **Installation strategy**
- **Energy consumption diagnostics**

LEVERAGING MACHINE LEARNING FOR SMARTER ENERGY SOLUTIONS

SoftServe's data science team used machine learning technology to create models that offer valuable insights into Budderfly's three key challenges. After testing the models, they developed a tailored solution that specifically addresses Budderfly's business needs.

SoftServe's MLOps team built a cloud-based deployment and API infrastructure, enabling Budderfly to validate the results, leverage insights, and take action.

Let's explore each business challenge individually and learn how machine learning is used to solve them.

1. BASELINE CALCULATIONS

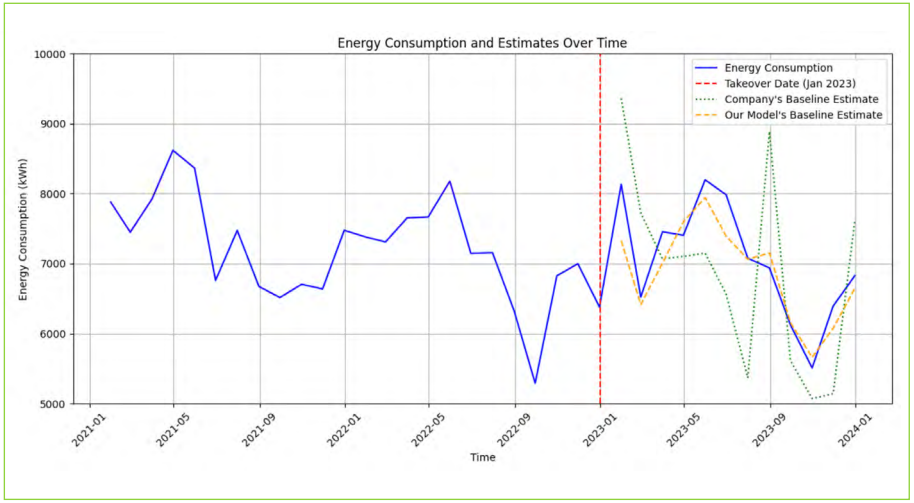
For every new client, Budderfly starts by calculating their average monthly usage (AMU), which serves as a reference point for future savings measurements. This is called the baseline calculation and is an entry point to more advanced analyses, making it a core part of their business.

CHALLENGE

Budderfly was looking for ways to calculate AMU trends across regions and business types. Additionally, they wanted to better understand how weather conditions impact AMU numbers.

SOLUTION

An ensemble of tree-based models was trained to calculate baseline values, considering weather and business-specific factors. The solution is fully automated and can even compute incomplete past energy consumption data.



REALIZED VALUE

Simplified workflow: The baseline model allows for the automated creation of missing baseline values without complicated and potentially error-prone human calculations.

Improved accuracy: Baseline calculation accuracy increased. This estimate also provides a baseline for many other business components, enhancing accuracy across the entire operation.

2. INSTALLATION STRATEGY

Budderfly's business revolves around installing energy-efficient solutions promptly to maximize cost and environmental benefits as soon as possible.

CHALLENGE

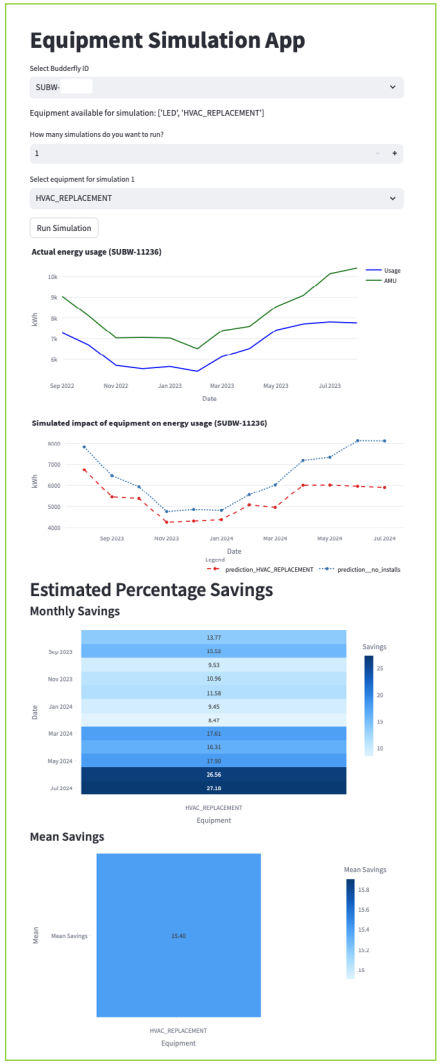
While every Budderfly installation brings energy savings, each client's savings vary depending on the time of year, location, size of the business, and other factors. Budderfly wanted to better understand the savings their solutions achieve in the field, establish a more accurate ROI, and determine which solutions make the most sense to continue.

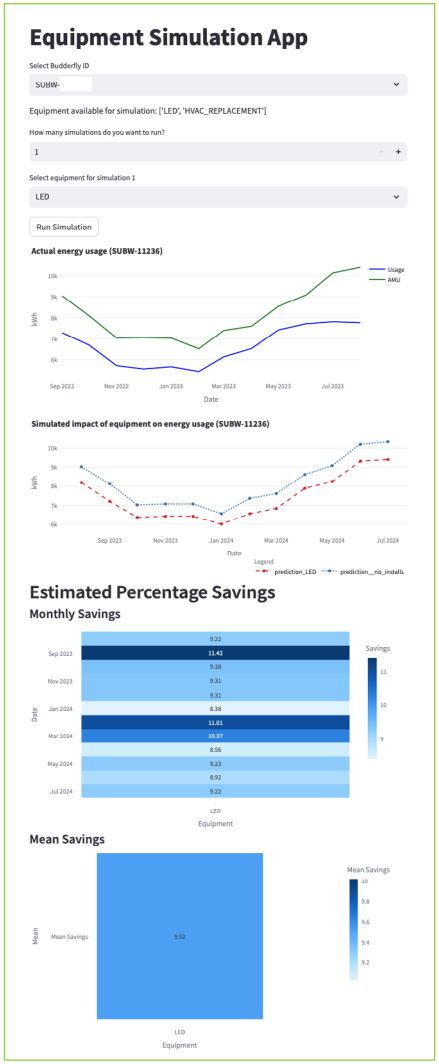
SOLUTION

A simulation engine was created based on LightGBM models to predict the amount of savings for each client's location each month of the year. These values can be further aggregated to provide cluster-level insights.

REALIZED VALUE

Efficiency and Cost/Benefit Optimization: The energy savings model prioritizes installations for the best possible results. For example, based on the ROI analysis, Budderfly installs certain solutions only in specific areas where the cost and energy savings make sense. By considering all factors, Budderfly can create an installation strategy that continuously improves performance, reduces energy use, lowers carbon emissions, and maximizes client savings.





3. ENERGY CONSUMPTION DIAGNOSTICS

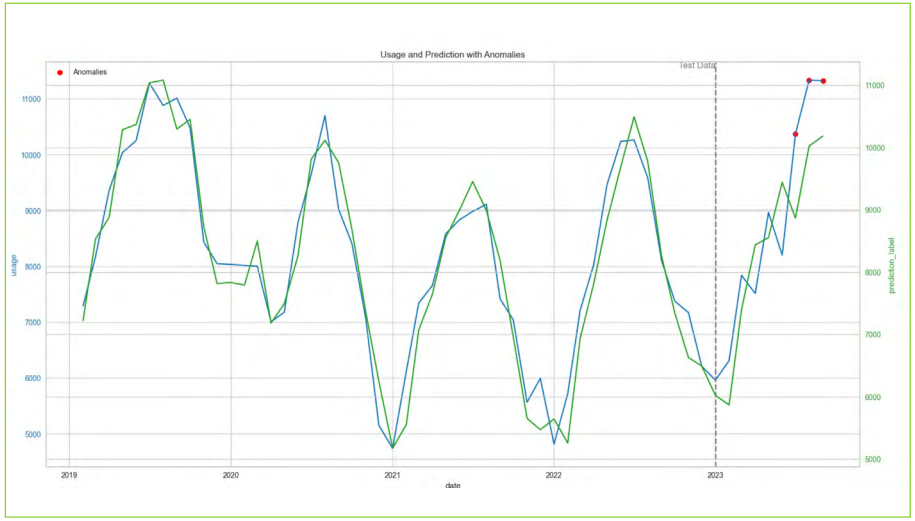
Detecting changes in energy consumption is vital to Budderfly's business model. Malfunctioning equipment or changes in business trends can lead to excessive energy consumption and higher costs.

CHALLENGE

Quick identification of equipment malfunctions is crucial. Additionally, even when equipment is running smoothly, it's important to identify business changes that might affect energy consumption. Identifying the causes of energy usage anomalies is essential for maintaining efficient operations.

SOLUTION

By leveraging accurate energy consumption forecasting models, SoftServe identified abnormal energy usage and provided alerts for further investigation. These alerts allow Budderfly to research equipment issues or changes in business practices and determine the next steps.



REALIZED VALUE

Energy Savings: Identifying and repairing anomalous energy usage caused by equipment malfunctions or business changes ensures that equipment operates at peak efficiency. This proactive approach reduces energy consumption, supports greener operations, cuts costs, and enhances service for Budderfly's clients.

FINAL THOUGHTS

By partnering with SoftServe, Budderfly has used advanced AI and machine learning to elevate their EaaS offerings. The collaboration has not only solved key challenges in baseline calculations, installation strategy, and energy consumption diagnostics but has also enhanced the overall accuracy, efficiency, and reliability of their services.

As a result, Budderfly has a clearer picture of what to install, at the best time. This successful integration of AI-driven solutions underscores the transformative potential of technology in driving sustainable business practices and delivering superior client outcomes.

> ***"The partnership between Budderfly and SoftServe has elevated our EaaS solutions. SoftServe's AI and machine learning expertise has brought a new level of precision and efficiency to our energy management. The team's innovative approach has addressed business challenges and significantly enhanced how we deliver value to our clients. We couldn't be more pleased with the partnership and the results we've achieved together."***
>
> *Chris DeBenedictis, Vice President, Technology*

About SoftServe

SoftServe is a premier IT consulting and digital services provider. We expand the horizon of new technologies to solve today's complex business challenges and achieve meaningful outcomes for our clients. Our boundless curiosity drives us to explore and reimagine the art of the possible. Clients confidently rely on SoftServe to architect and execute mature and innovative capabilities, such as digital engineering, data and analytics, cloud, and AI/ML.

Our global reputation is gained from more than 30 years of experience delivering superior digital solutions at exceptional speed by top-tier engineering talent to enterprise industries, including high tech, financial services, healthcare, life sciences, retail, energy, and manufacturing.

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