Southport Technology Group

Run Energy

Superior Environmental Data

Eliminating
Manual Workflows

01. Years in the Making

02. Landfill Environmental Management

03. Swiss Army Knife

04. Tailored to Fit

05. Do Less to Do More

01. Years in the Making

A collaboration that's lasted more than 10 years.

There are no customers as pivotal to the formation of Southport Technology Group as Run Energy. Not only are they the longest ongoing customer relationship of the firm, but it was in the course of their original "Bio Gas Data" project that Nicholas Evans and Trevor Ewen first collaborated in software development. A weekend hackathon turned into a full data platform. Fully realized features included reporting, visualization, archival, jobs, and proactive notifications. In the process, the seeds of two long-term partnerships began to germinate.

In 2021, that original Ruby on Rails server turned 10 years old. While the project had undergone substantial development up until 2015, it had chugged along quietly from there until the present. When Southport Technology Group reached out to do a platform refresh, Run Energy's workflow and needs had morphed substantially.

02. Landfill Environmental Management

Run Energy is in the businesses of wind power, engine power (gas, diesel, alternative fuels), solar power, gas systems, and landfill environmental management. In all these fields there are a wide array of data points that need to be collected in order to maintain quality control, report to management, and government regulators.

Both landfill environmental management and gas systems were the subject of our original work with Run Energy. The day-to-day reporting involved technicians in the field collecting snapshots. End of day, technicians upload the readings from different landfill assets, such as flares, gas wells, and gas collection systems. The process requires the attention to neatly categorize and audit each snapshot. Only in aggregate do the readings produce a picture useful for owners or local regulators of a landfill.

At the time, there was additional motivation to increase the quality of environmental monitoring. Despite its global business, Run Energy is based in Australia and has a majority of their customers in the country. The Gillard Labor government of 2011 introduced a carbon tax. Despite the fact it was later repealed in 2014, it was an ideal time for environmental monitoring and data.

03. Swiss Army Knife

The 2011 version of Landfill Data had a feature for every possible consideration. In technology, a decade is a lifetime. So the platform carried the experience of every possible phase of Landfill monitoring. As of 2021, the needs of Run Energy fell much more neatly into three categories.

1. The platform will always need to import new data from technicians.
2. Run Energy and their customers have robust reporting requirements.
3. One specific report: the heat map, was critical to customer success and was unlikely to be provided by another platform.

When we boiled the requirements down to these three, we realized the existing system was bloated and the infrastructure costs were far too high for what was necessary. To top it off, the framework, libraries, and runtime had not been updated since 2015.

There was one additional discovery during this phase. It turns out that Run Energy had been exporting all the data from the existing system into Quickbase. This user-friendly data solution allowed them to better customize reports. For the next version, why not aim for direct Quickbase integration? Not only did this reduce costs for Run Energy, but it put reporting back in their hands. With Quickbase in the mix, a replacement platform could well cover the system functionality while bringing infrastructure costs down by 90% (not an exaggeration).

04. Tailored to Fit

Southport Technology Group built the new Landfill Data platform with Quickbase as the single source of truth. There is no intermediate database, thus requiring every operation, both read and write, to pass through Quickbase. As priorly mentioned, this enhancement “cut out the middleman” for reporting and business intelligence. It also provided Run Energy with stronger control over their data schema, where several important lessons had been learned since 2011.

The import functionality was substantially improved. The legacy UI was starting to show its age and had a number of stylistic defects that could be remedied with a fresh new UI. Known column configurations are automatically matched via the upload. Date parsing modernized, and the preview was vastly improved. Southport Technology Group replicated much of the existing functionality but with streamlined style profile.

The single biggest functionality win came in the development of Heat Map version II. There is no question this was the hardest part to get right. For this version we set out and succeeded to utilize Mapbox as the map provider, providing heat map overlays over satellite maps instead of animated representations. In roughly three iterations we were able to find the best middle ground with the Run Energy team. The finalized image maps provided detailed, per-asset data over a variety of different map types.

05. Do Less to Do More

Landfill Data is a great story because it boils the business use case down to the most essential items and promotes those to the forefront of the customer experience. This project is the rare triple threat that modernizes technology, saves money, and improves user experience. The removal of the legacy Ruby on Rails application opens up the possibility for new features built in the same framework as all Southport Technology group projects circa 2021-22.

If The Lindy's Effect is any guide, then the waste management business is as durable as ever. For the sake of Southport Technology Group, it's certainly been durable, and we believe the best years for improved data transparency and reporting are ahead of the industry.

Southport Technology Group

https://stg.software

Contact Info
solutions@stg.software