Predictive analytics creates a convenient future for Peregrine

ABOUT PEREGRINE CORPORATION

Peregrine owns and operates approximately 140 “On The Run” convenience outlets across South Australia. These outlets are multi-purpose, with many containing a combination of petrol stations and fast food franchises, such as Subway and Oporto.

Each of these stores has a varying number of fridges and warmers to keep food at a safe and appropriate temperature. The associated procedure was that On the Run staff were required to regularly check and record the temperature of these fridges and warmers, and complete a site manual which was then later sent back to the site support office.

These operational challenges were part of the catalyst for Peregrine to undergo a smart story initiative, with one of the objectives being the automation and centralisation of business functions wherever possible.

THE CHALLENGES

The staff having to manually record temperatures was not only time consuming and inefficient, but also resulted in a delay in the data being presented and analysed by the maintenance division; sometimes up to weeks or months. By the time the data reached the maintenance team, the asset may have already suffered a breakdown, diminishing the value of the effort involved in recording the temperature.

Peregrine was very keen to explore how they could reduce manual activities by implementing automation tools, in order to reduce error and potential for breakdowns, but also to make the lives of their staff easier.

Additionally, the cost of maintenance on fridges and warmers is a significant portion of a large annual bill, much of which could be avoided through preventative maintenance.

Lastly, Peregrine has an obligation to meet rigid safety standards contained in the South Australian convenience sector is extremely competitive, so we are making a commitment to investment in technology to increase efficiency in our site operations and ultimately, improve the customer experience.”

BRENDAN HORE, CIO, PEREGRINE CORPORATION

“Empired”

PEREGRINE CORPORATION

Data Insights and IoT

RETAIL
Based on the Azure IoT Suite, Empired’s solution facilitates the automated monitoring and reporting of temperature data, along with predictive analytics to determine the risk of an asset breakdown. The monitoring and reporting is designed to save significant time and cost by avoiding the need for site staff to routinely record temperatures, and putting real-time data in the hands of the maintenance team for immediate follow-up. The predictive analytics element attempts to identify trends that predict the risk of asset breakdown, adding further value by recommending action without the need for human intervention.

The Azure IoT Suite is used to ingest, process and store the data, and Empired utilised and tested a third party temperature sensor that was selected by Peregrine from an Australian vendor called Web-ID. AzureML was used to help predict an asset failure risk rating. Empired used a custom built Azure hosted web application to provide an operational portal for Peregrine to surface and maintain the solution. That data was surfaced via PowerBI, providing Peregrine the ability to analyse the data themselves.

**THE RESULTS**

The project pilot has been viewed by Peregrine as a great success and creates the ability for huge future advancements in the way they manage and operate their business. The financial and operational gains Peregrine will experience with the widespread rollout of the solution are significant and will result from reduced maintenance and spoilage costs, happier and more productive employees and easier adherence to rigid compliance standards.

These overall business improvements provide Peregrine with the opportunity to focus on the areas that matter; providing customers a superior service and steady future organisational growth. The PowerBI dashboards have also been a great source of interest for the management team at Peregrine and they are exploring ways to optimise the use of these insights in the near future.

“We pride ourselves on being a place where our great people get to do great things. With Empired’s solution, our staff are already able to spend their time being analytical, rather than being data entry operators.”

BRENDAN HORE, CIO, PEREGRINE CORPORATION

Within the Food Standard Code, with many of the related procedures also handled by manual tasks and monitoring. Managing this process by hand not only consumed significant staff time and effort, but also presented the opportunity for human error to occur, causing potentially disastrous breaches to the Code.

**THE SOLUTION**

Peregrine’s key goal was to drive automation of historically manual behaviour within the stores and centralise the associated activities wherever possible. The time and costs involved in manually recording data and maintaining the refrigeration system was enormous and consuming valuable company resources; ultimately affecting Peregrine’s ability to compete forcefully in their market.

Peregrine were eager to implement a solution that automated many of the inefficient and costly existing manual processes. Automation would also dramatically improve compliance activities: Implementing an onsite computerised monitoring and reporting tool would also not only ensure more effective accordance with the Code and reduce any breaches, but also reduce the labour efforts and cost of meeting compliance obligations.
THE BENEFITS

The contrast between the before and after scenario is substantial. With a state-wide rollout of the automation solution, the financial losses from spoilage and equipment breakdowns could largely be a thing of the past, as would the frustrations and inefficiencies experienced by the employees undertaking the essentially futile task of manual data logging.

The new solution also allows for a systematic and simple approach to adherence to compliance regulations, which facilitates a more accurate and simple process and removes capacity for potentially catastrophic breaches of the Food Standard Code.

Before the existence of the solution, onsite staff spent a large portion of their work day monitoring and documenting temperature data for the various machines at each retail outlet. With the elimination of an enormously laborious and unproductive process for staff, comes an increase in employee satisfaction.

With more time to spend on the higher value tasks on the job, this enables staff to deliver better levels of service to customers, translating to increased customer satisfaction and loyalty, sales and ultimately profits.

Additionally, Peregrine’s yearly machine maintenance bill has the potential to amount to several millions of dollars. A significant proportion of these costs are eliminated with the existence of the automated solution, as due to the instantaneous capture of onsite sensor data, the maintenance team can reach an at-risk asset rapidly and before a costly full breakdown. This type of preventative maintenance is more cost effective and, as above, reduces the risks of serious asset breakdown and the resulting spoilages.

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"We wanted to ensure that compliance to food safety standards was optimised with the most efficient use of resources, and the reduction in manual labour is already resulting in decreased human error."

BRENDAN HORE, CIO, PEREGRINE CORPORATION

THE BUSINESS VALUE

The quantifiable benefits to be achieved by Peregrine across many areas of the business are significant, particularly with regard to the below:

- Increased labour productivity
- Improved employee and customer satisfaction
- Simplified and more accurate compliance process
- Decreased risk of spoilage
- Reduced maintenance costs

THE ENGINE ROOM

- Azure IoT Hub
- Azure Machine Learning
- Azure Stream Analytics
- PowerBI
- Azure Storage
- Azure App Service hosted Web application
- SQL Azure
- Azure DocumentDB
- Web ID Temperature Sensors

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