The Challenge

Brewing is a complicated process that requires a high level of precision to deliver a consistent product. Internet of Things (IoT) technologies can help breweries implement more streamlined and reliable methods of utilizing the data generated by their machinery, as well as supplementing that data with additional sensors to monitor equipment and brewing conditions.

Much of the brewing process takes place in large tanks that are carefully heated by a boiler or furnace and maintained at a set temperature. However, if a boiler or furnace goes out for a period of time, this can lead to loss of product that results in financial losses.

Fathym has worked with a number of breweries that have experienced difficulties with their brewing operations and were looking for a solution that could accurately monitor their equipment. Once accurate data readings captured via sensors are set up and flowing, breweries can quickly see the real value of this data for optimizing the brewing process. The value of IoT data is especially apparent when breweries are alerted to emergencies in real time, allowing them to prevent disasters that could damage or even destroy their yield.

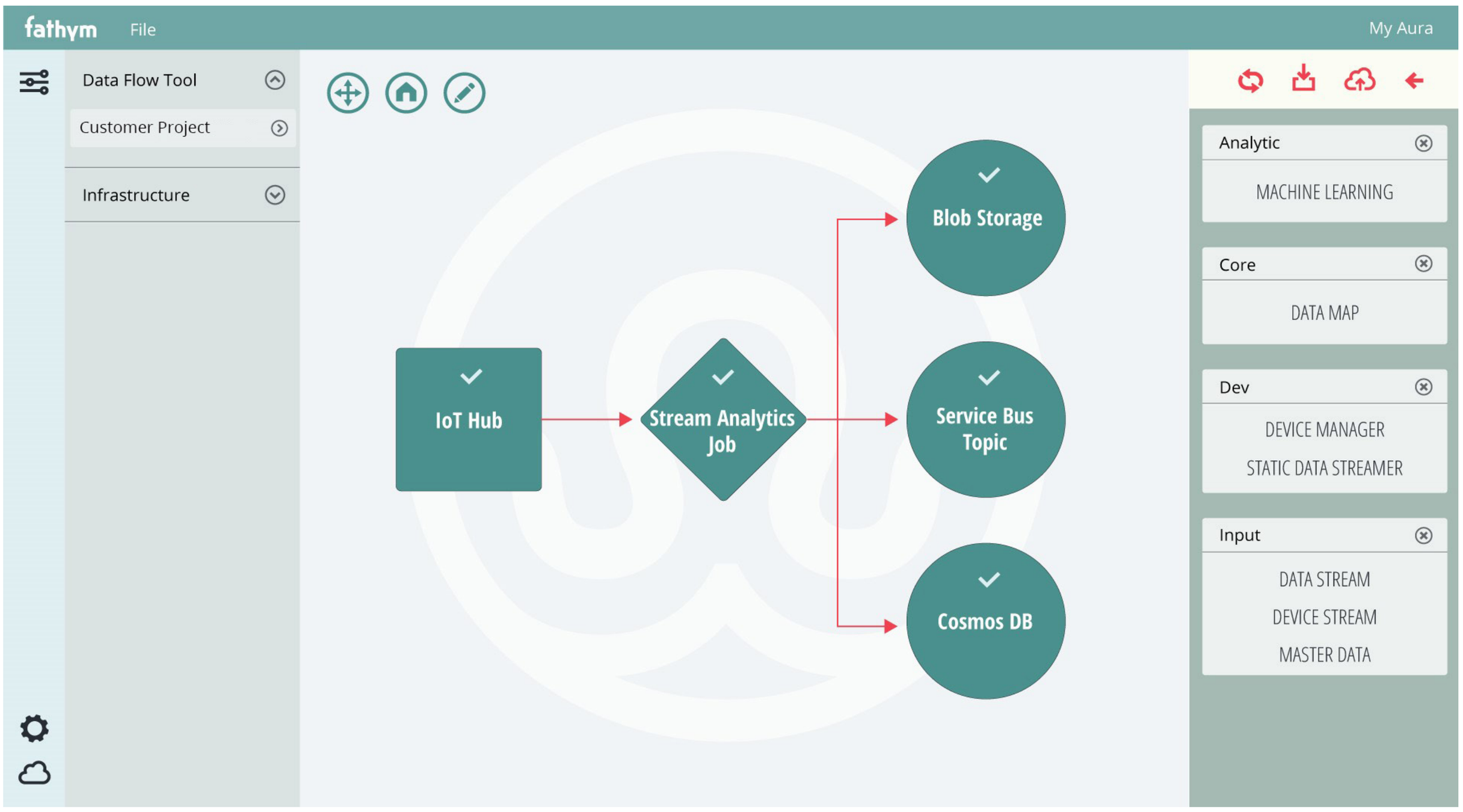
The Solution

Many IoT projects start with trying to get device data flowing to the cloud, but this is often the trickiest stage of an IoT implementation. Using Fathym's low-code framework, developers can start a project by rapidly creating emulated data sets and configuring an entire IoT infrastructure.

For a brewery, this means they can verify that an end-to-end IoT infrastructure is working as expected and data is flowing to the correct outputs before the challenge of connecting real devices is tackled. This also allows brewers to ascertain the device data they need to optimize their brewing operations and ensure ROI before spending money on sensor deployment.

Once a brewery has identified the type of data they want to collect, hardware can be deployed. For our customers, this has involved an infrared USB (IRUSB) temperature sensor to monitor furnace and glycol temperature. This is connected to a Raspberry Pi that operates as a gateway and feeds sensor data into cold, warm and hot storage in Microsoft Azure. This data is then configured using Fathym's no-code tools into both real-time and historical data visualizations, along with Power BI reports.

Fathym's no-code tools allow breweries to configure custom alerts, so brewery staff can be notified when temperatures or liquid levels drop too low or get too high. Staff have access to customizable, mobile-friendly, real-time data dashboards to check on temperatures and levels remotely at all times. Data is collected and stored to allow for further analysis to help streamline the brewing process.



The Results

In one instance, a Denver craft brewer we work with reported that their boiler went out during the weekend when no staff were on site. Fathym's solution alerted them to the situation so they could react immediately. This saved what ultimately could have cost the brewery thousands of dollars in time and lost product.

"You saved us a whole day of brewing! If we didn't have the alert and we didn't come in to check Sunday or Monday, we would have walked in to cold water today. And it takes so long to heat up that we wouldn't have been able to brew at all today, which messes up the whole week!"

- Director of Operations at Crazy Mountain Brewery, Denver, Colorado

After seeing the initial success of deploying sensors, our brewery customers are identifying what other data may help them run their breweries efficiently. This includes installing temperature and depth sensors on all beer and grain tanks while also deploying additional sensors to monitor fermentation bubbles and more.

Fathym's low-code framework and sensor installation expertise has enabled us to develop a solution that can add a significant level of insight and reliability to brewing.