Smart your way into Florida Meters

What is a smart thermostat

- A Wi-Fi enabled device that automatically adjusts temperature settings for heating and cooling in your home for optimal performance.
- Used typically for energy and cost savings.
- Can easily be controlled from a phone or any compatible smart device

Why smart thermostats

Convenience

- Many smart thermostats learn your temperature preferences and establish a schedule that automatically adjusts to energy-saving temperatures when you are asleep or away.

Control

- Wi-Fi enabled thermostats allow you to control your home’s heating and cooling remotely through your smartphone.
- Certain certified smart thermostats quickly enter a low-power standby mode when inactive.
- Eliminates the peak time usage surge.

Insight

- Smart thermostats provide equipment use and temperature data you can track and manage.
- Periodic software updates ensure your smart thermostat is using the latest algorithms and energy-saving features available.

Challenge

- Florida is the fourth-largest energy-consuming state and uses almost eight times as much energy as it produces. Thus, reducing the energy consumption in domestic and commercial buildings will benefit the state greatly.

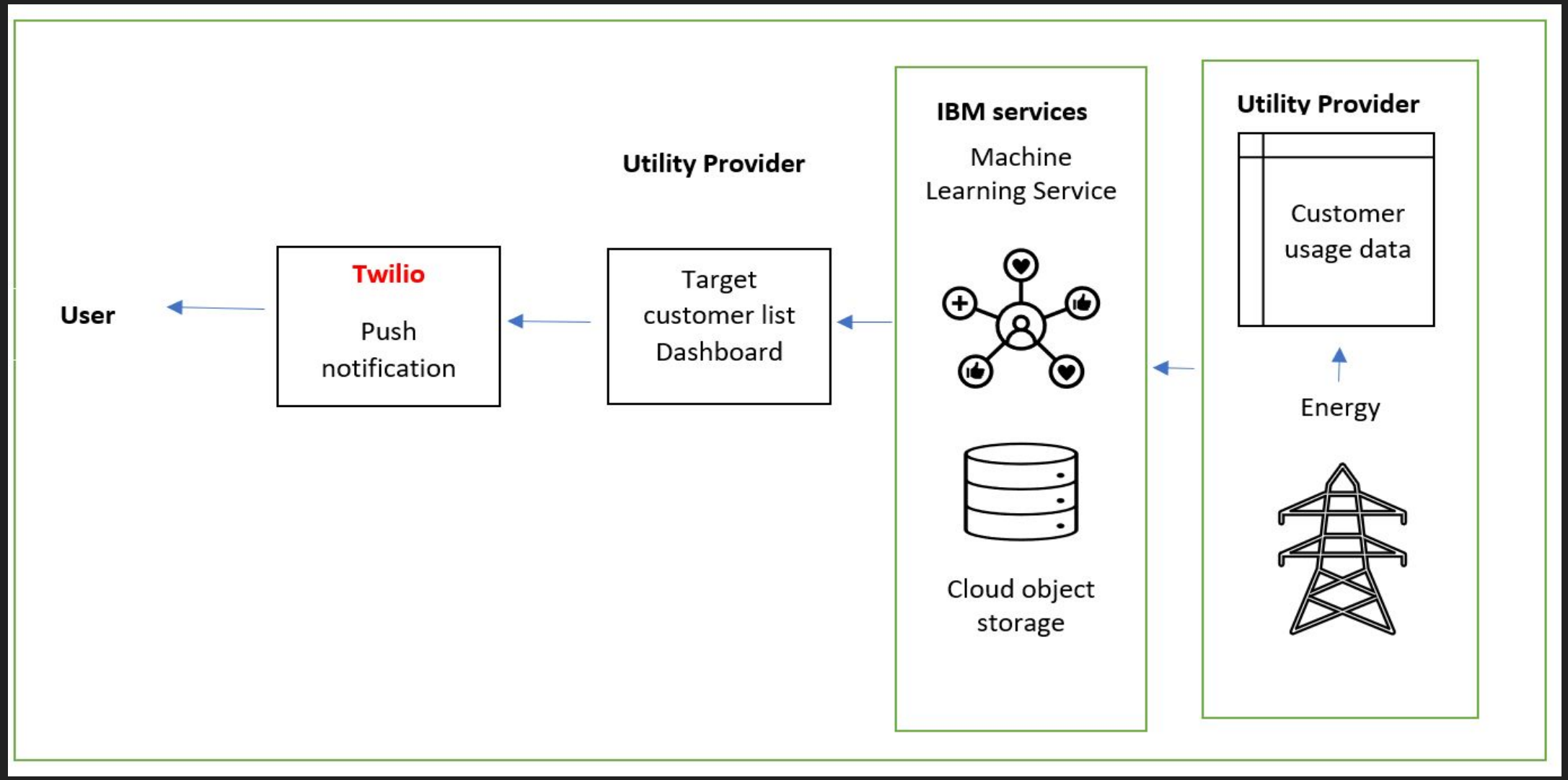
Forecast usage

- A Univariate Time-series Forecasting method is created with time (monthly) as one variable and energy usage another variable.
- This will allow us to predict the customers next month bill using the historical usage data.

Solution

- Smart thermostats are proven to reduce energy usage by 23% and monthly bill by 10 to 12%.
- Motivating businesses and domestic users of traditional thermostat to switch to a smart thermostat is our magic solution.
- The utility provider will notify users with higher monthly energy usage than a threshold of 900 kWh (a U.S. residential utility customer was an average of about 893 kWh per month). *Source: eia.gov*
- Message like “Your monthly energy usage was above a 900kWh last month, switch to a smart thermostat to save money and energy.” will be sent to the user’s mobile phone.

Architecture



Architecture

- The customer energy usage time series data for past 3 months will be gathered from utility provider.
- The admin uploads csv file of the customer data to the IBM cloud object storage service.
- The dataset is then used to build and deploy the machine learning model.
- The predictions will be posted as an API to be consumed by the utility provider.
- The utility provider will then notify the users using mobile app with Twilio notification service.

Thankyou!