

PowerCo case task description

The ask

We have scheduled a meeting in one week's time with the head of the SME division in which you will present our findings of the churn issue and your recommendations on how to address it

You are in charge of building the model and of suggesting which commercial actions should be taken as a result of the model's outcome



Modelling and presentation specifics and requirements

The first stage is to establish the viability of such a model. For training your model you are provided with a dataset which includes features of SME customers in January 2016 as well as the information about whether or not they have churned by March 2016. In addition to that you have received the prices from 2015 for these customers. Of particular interest for the client is how you frame the problem for training

Given that this is the first time the client is resorting to predictive modelling, it is beneficial to leverage descriptive statistics and visualization for extracting interesting insights from the provided data before diving into the model. Also, while it is not mandatory, you are encouraged to test multiple algorithms. If you do so it will be helpful to describe the tested algorithms in a simple manner.

Finally, the client would like to have a view on whether the 20% discount offer to customers predicted is a good measure. Given that it is a steep discount - bringing their price lower than all competitors - we can assume for now that everyone who is offered the discount will accept it. According to regulations, PowerCo cannot raise the price of someone within a year if they accept the discount. Therefore, offering it excessively is going to hit revenues hard

Description of fields in the data set

Field name	Description
id	contact id
activity_new	category of the company's activity
campaign_disc_ele	code of the electricity campaign the customer last subscribed to
channel_sales	code of the sales channel
cons_12m	electricity consumption of the past 12 months
cons_gas_12m	gas consumption of the past 12 months
cons_last_month	electricity consumption of the last month
date_activ	date of activation of the contract
date_end	registered date of the end of the contract
date_first_activ	date of first contract of the client
date_modif_prod	date of last modification of the product
date_renewal	date of the next contract renewal
forecast_base_bill_ele	forecasted electricity bill baseline for next month
forecast_base_bill_year	forecasted electricity bill baseline for calendar year
forecast_bill_12m	forecasted electricity bill baseline for 12 months
forecast_cons	forecasted electricity consumption for next month
forecast_cons_12m	forecasted electricity consumption for next 12 months
forecast_cons_year	forecasted electricity consumption for next calendar year
forecast_discount_energy	forecasted value of current discount
forecast_meter_rent_12m	forecasted bill of meter rental for the next 12 months

Field name	Description
forecast_price_energy_p1	forecasted energy price for 1st period
forecast_price_energy_p2	forecasted energy price for 2nd period
forecast_price_pow_p1	forecasted power price for 1st period
has_gas	indicated if client is also a gas client
imp_cons	current paid consumption
margin_gross_pow_ele	gross margin on power subscription
margin_net_pow_ele	net margin on power subscription
nb_prod_act	number of active products and services
net_margin	total net margin
num_years_antig	antiquity of the client (in number of years)
origin_up	code of the electricity campaign the customer first subscribed to
pow_max	subscribed power
price_date	reference date
price_p1_var	price of energy for the 1st period
price_p2_var	price of energy for the 2nd period
price_p3_var	price of energy for the 3rd period
price_p1_fix	price of power for the 1st period
price_p2_fix	price of power for the 2nd period
price_p3_fix	price of power for the 3rd period
churned	has the client churned over the next 3 months

Note: Some fields are hashed text strings. This preserves the privacy of the original data but the commercial meaning is retained and so they may have predictive power