



# Propensity analysis

## Residential solar company

Built a Propensity Analysis model to identify opportunities within existing and new areas to achieve the growth targets, by leveraging data from external/market data (competitor, geographical and demographic) using web mining techniques

# Market entry roadmap using external data for solar installation firm

## Situation

- Client leverages various marketing and targeting strategies to improve its overall sales growth. However, there was an opportunity to refine and optimize through leveraging data and making more informed decisions
- Partnered with the client to formulate a comprehensive propensity analysis approach based on internal and external data to identify new regions along with ideal number of deals and sales consultants required to achieve installs and growth targets




## Accordion Value Add

- Built a tool leveraging Python and UiPath to extract competitive intelligence to identify demographic, weather and competitor related attributes which have a major impact on the conversion rates across multi-stage sales processes
- Evaluated geographic attractiveness by leveraging clustering algorithms such as k-means, DBScan, k-modes etc. on zip code level
- Developed an optimized resource allocation model by leveraging advanced ML techniques such as Linear programming and stochastic gradient descent to identify the optimal mix of deals and sales representatives across zip codes
- Developed a dynamic tool leveraging Power BI and Power Apps to visualize the impact of various performance scenarios including new territories, upskilling of the sales consultants

## Impact

- Uncovered opportunities in 90+ new ZIP codes within Massachusetts, with a potential to generate additional annual revenue of ~\$17 million
- Reduced manhours required to extract competitive information by ~80% by automating the data extraction process

# Leveraged external data sources for informed decision-making and optimize the marketing and targeting strategy

	<div></div> <div>Weather Data</div>	<div></div> <div>Demographics Data</div>	<div></div> <div>Competition Data</div>
Data Sources	Weather365 API	US Census	SolarPowerOnline
Key Attributes	<ul style="list-style-type: none"><li>▪ Temperature Range</li><li>▪ Cloud and Visibility</li><li>▪ Precipitation</li><li>▪ Weather</li></ul>	<ul style="list-style-type: none"><li>▪ Per capita Income(PCI)</li><li>▪ Population</li><li>▪ Age</li><li>▪ Unemployment rate</li></ul>	<ul style="list-style-type: none"><li>▪ Customer Reviews</li><li>▪ Ranking</li><li>▪ Presence</li><li>▪ Sales</li><li>▪ Employee headcount</li></ul>

*Leveraging external data sources such as weather, demographics, and competitor data empowers data-driven decision-making for a competitive edge and enhanced customer understanding*

*\* Selected important attributes picked from universe of more than 120 attributes*

# Technical infrastructure built to automate the propensity model

