



Strategic growth & resource optimization analysis

Residential solar company

Extracted external data (competitor, geographical and demographic) using web scraping along with propensity analysis to identify the opportunities within existing and new areas to achieve the growth targets

Residential solar company needs to “power” its strategic growth & resource optimization

Picture this...

You're looking 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' requirements to achieve installs and growth targets. You realized that current marketing and targeting strategies primarily based on business intuition were consistently giving sub-optimal results and require a data driven approach to prioritize new territories.

You turn to Accordion.

We partner with your team to extract external data (competitor, geographical and demographic) using web scraping along with conducting propensity analysis to identify opportunities within existing and new areas to achieve the growth targets, including:

- 1) Building 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
- 2) Evaluating geographic attractiveness by leveraging clustering algorithms such as k-means, DBScan, k-modes etc. on zip code level
- 3) Developing 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
- 4) Developing 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

Your value is enhanced.

- You have uncovered opportunities in 90+ new ZIP Codes within Massachusetts, with a potential to generate additional annual revenue of ~\$17 million
- You have reduced manhours required to extract competitive information by ~80% by automating the data extraction process
- You have also designed versatile and scalable solution to identify the optimal number of deals and sales rep mix for zip codes across 20+ states

KEY RESULT

- Reduced manhours by ~80%
- Generate additional annual revenue of ~\$17M

• VALUE LEVERS PULLED

- Python and UiPath Automation
- ML techniques (Linear programming and stochastic gradient descent)
- Clustering Algorithms
- Power BI and Power Apps based tool

Strategic growth & resource optimization analysis

Situation

- Client leverages various marketing and targeting strategies primarily based on business intuition to improve their overall sales growth. Client realized these strategies were consistently giving sub-optimal results and required a data driven approach to prioritize new territories.
- 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' requirements to achieve installs and growth targets

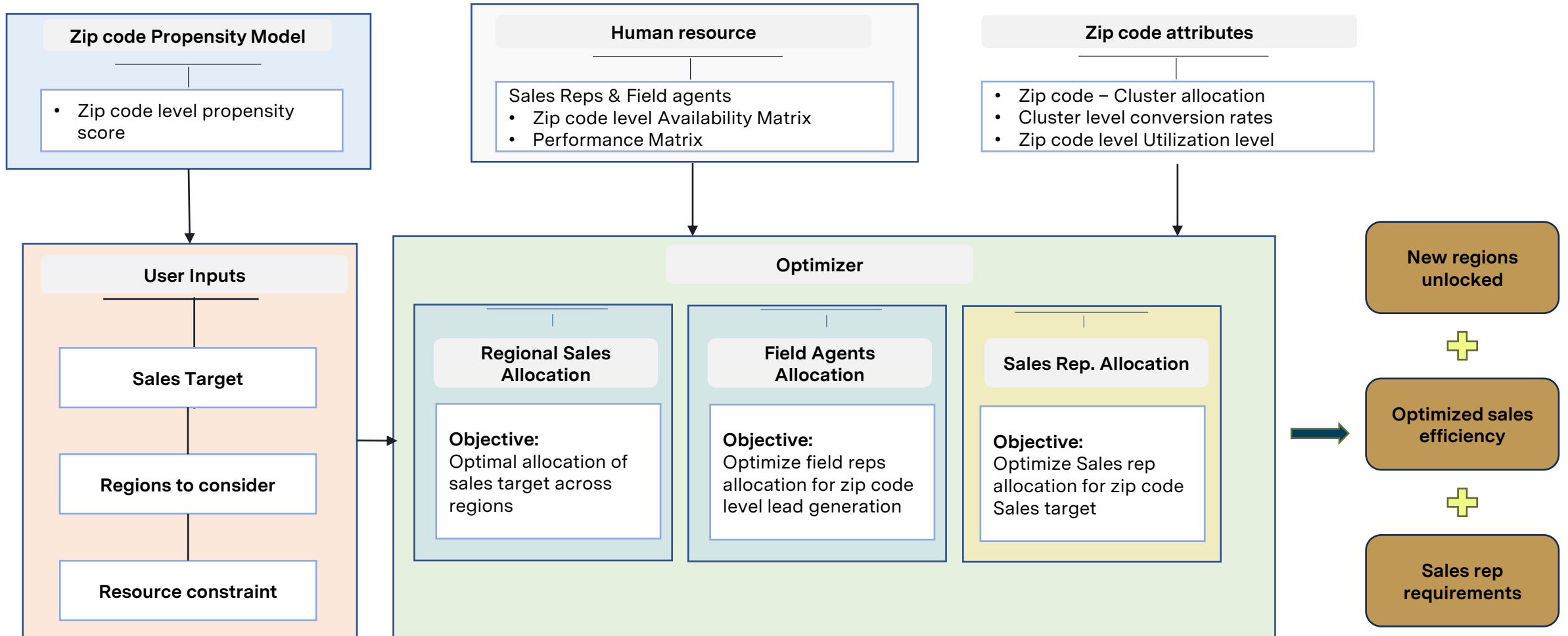
Accordion Value Add

- 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
- Designed versatile and scalable solution to identify the optimal number of deals and sales rep mix for zip codes across 20+ states

Methodology



By leveraging propensity models, human resource modeling, and utilization analysis, Client was able to achieve optimal resource allocation for enhanced productivity and efficiency

Unlocking insights: Leveraging external data sources for informed decision-making



WEATHER DATA



DEMOGRAPHICS DATA



COMPETITION DATA

Data Sources

Weather365 API

US Census

SolarPowerOnline

Key Attributes

- Temperature Range
- Cloud and Visibility
- Precipitation
- Weather

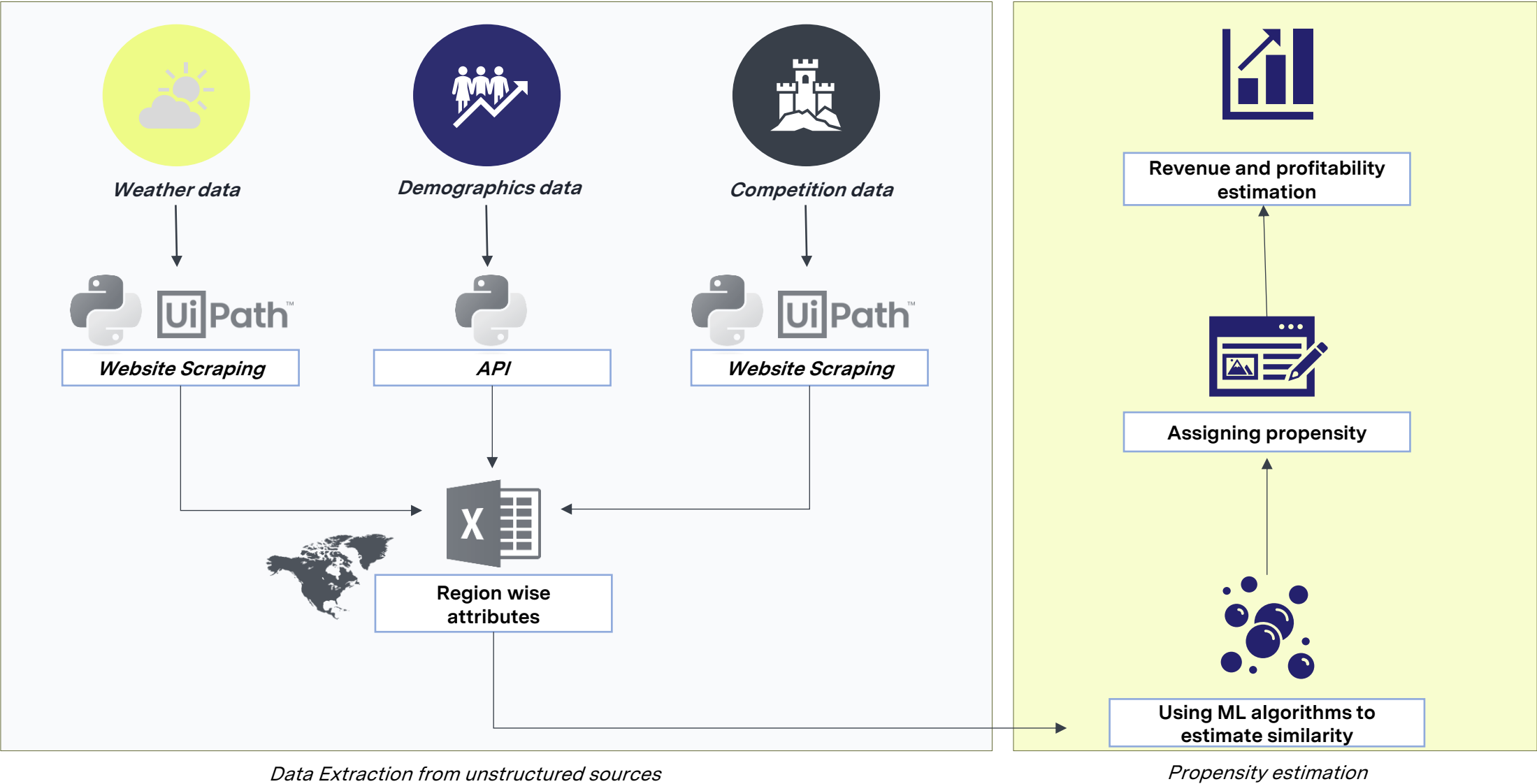
- Per capita Income(PCI)
- Population
- Age
- Unemployment rate

- Customer Reviews
- Ranking
- Presence
- Sales
- Employee headcount

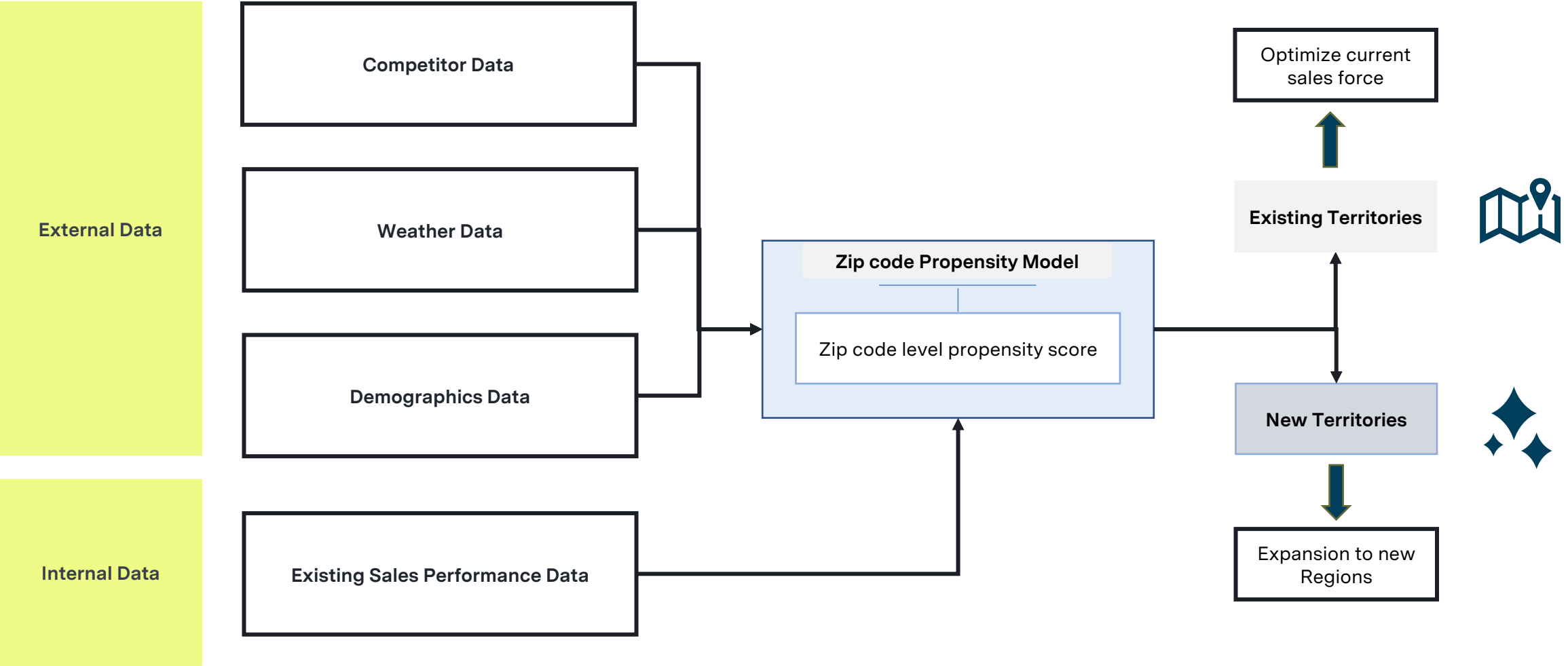
Leveraging external data sources such as weather, demographics, and competitor data empowers data-driven decision-making for a competitive edge and enhanced customer understanding

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

External data: Unlocking regional potential



Zip code propensity model



Leveraging external data to establish characteristics while using historical data to provide propensity scores helps expand the model to entirely new regions

Geographic cluster insights for targeted marketing success

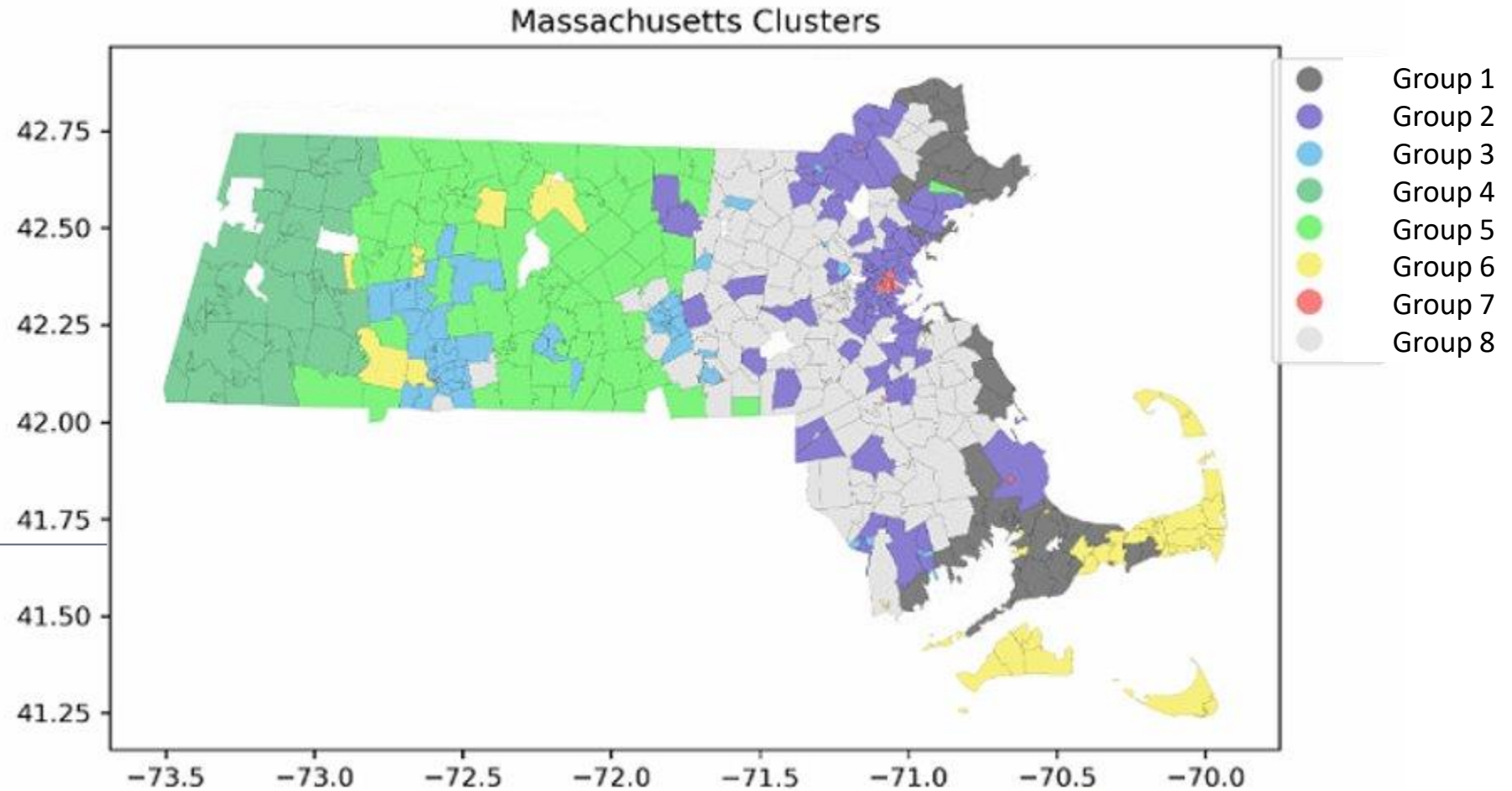
Group	# of ZIP Codes	Conversion rate across stages					
		Stage -1	Stage -2	Stage -3	Stage -4	Stage -5	Stage -6
Group 1	66	3.9%	62%	31%	12%	9%	6%
Group 2	127	3.4%	56%	24%	10%	7%	5%
Group 3	72	2.9%	60%	31%	16%	10%	6%
Group 4	48	5.6%	69%	38%	20%	12%	8%
Group 5	92	4.4%	64%	35%	18%	11%	7%
Group 6	56	3.4%	59%	35%	15%	10%	6%
Group 7	46	1.5%	12%	7%	2%	2%	0%
Group 8	156	3.7%	61%	30%	12%	7%	5%

Geographic cluster conversion rates to tailor targeted marketing and resource allocation for maximized ROI

Group	Group Definition	Group Region
Group 1	High Median Age, Low Electricity Consumption	Eastern Boundary
Group 2	Low Consumption of Kerosene/Oil/Wood for heating, High Population Density	Miscellaneous
Group 3	Low Median Age, Low Per Capita Income	Concentrated near Central MA
Group 4	High Median Age, High Consumption of Kerosene/Oil/Wood for heating, Low Electricity Consumption	West MA
Group 5	Low Per Capita Income, High Consumption of Kerosene/Oil/Wood for heating	Central MA
Group 6	High Median Age, High Median number of rooms	Southern Bay Area
Group 7	Low Median Age, Low Consumption of Kerosene/Oil/Wood for heating, Low Median Number of rooms per house, High Electricity Consumption	Concentrated Near Boston
Group 8	High Per Capita Income, High Median Number of Rooms	Eastern MA

Highlighting characteristics of geographic clusters reveals untapped market opportunities and enables precise targeting for optimized growth and profitability.

Geographic cluster insights with zip code level visibility



Elevate decision-making with ZIP Code-level visibility by visually representing geographic clusters, enhancing location-based insights