



The Power of Data

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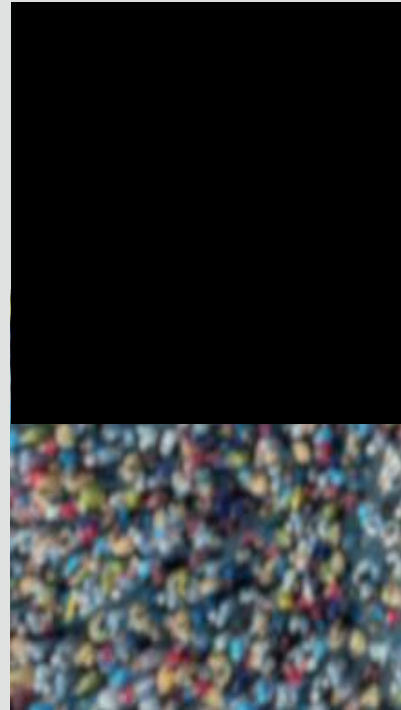
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Machine learning models to identify customers who are likely eligible for assistance and energy management programs



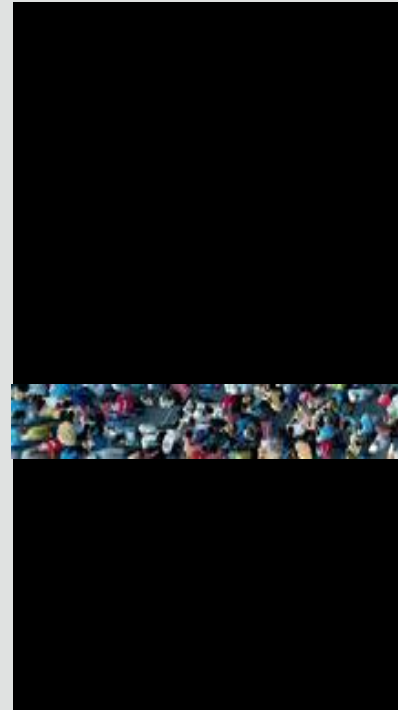
Ground-truth

Not directly observable



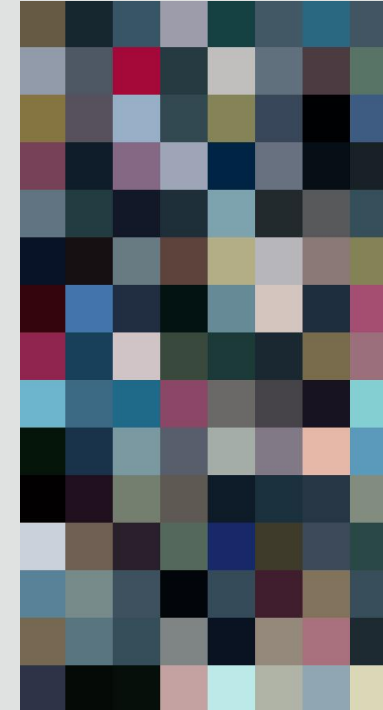
Third-party data

Easy to obtain, moderately accurate, misses many customers



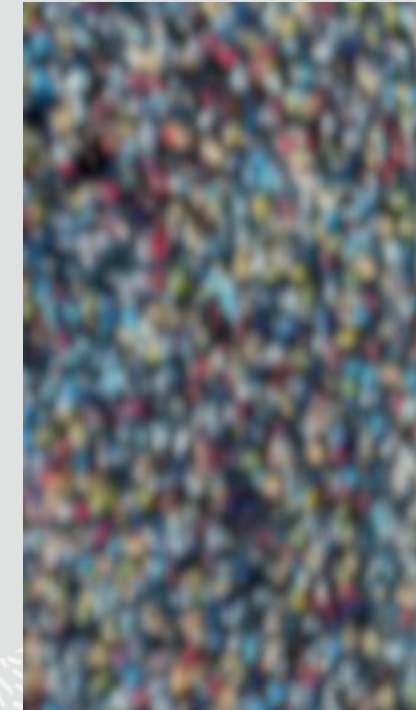
Ask customers

Collect directly, very accurate, misses many customers



Census-tract data

Total coverage, but averages obscure many eligible customers

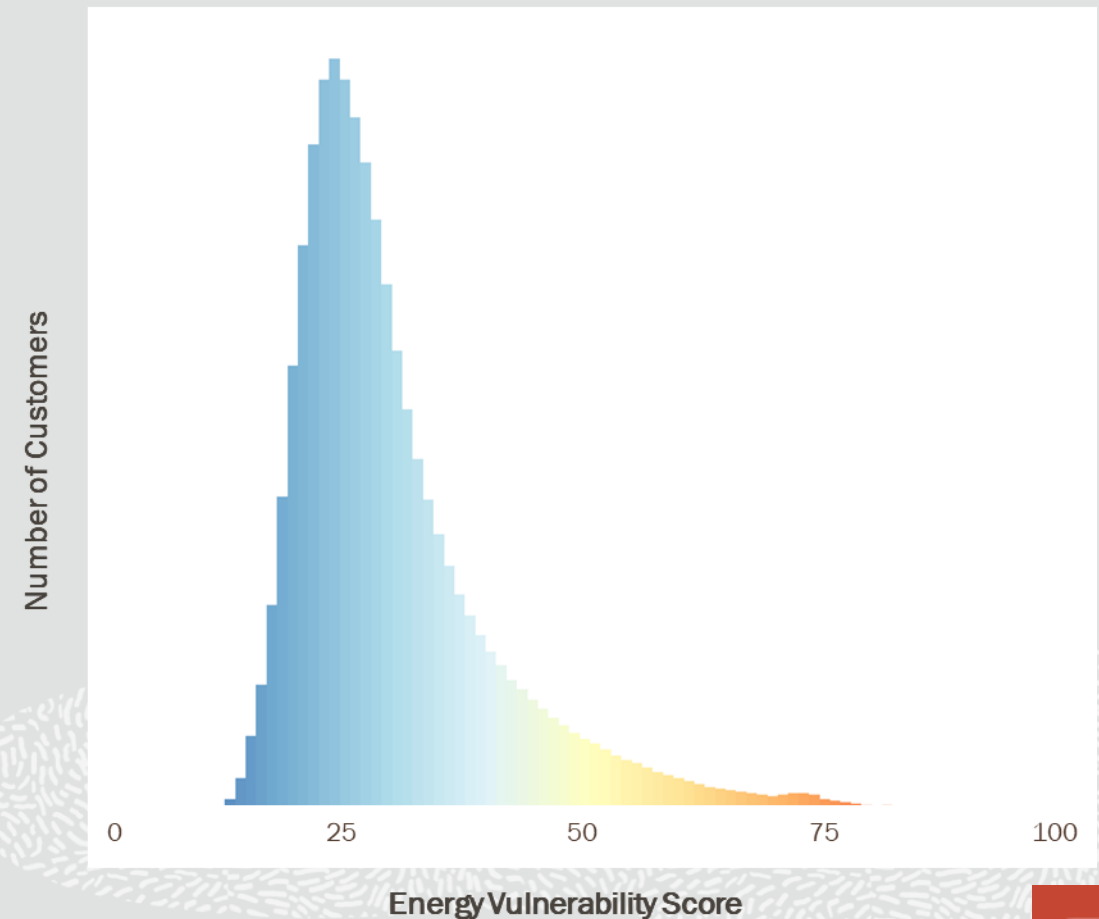


Machine learning

Goal: total coverage with better accuracy than census-tract averages

Affordability metrics make deep learning actionable, enhancing a utility's ability to identify and serve limited income customers

1. **Household-level energy burden** – What proportion of a household's annual income goes towards energy costs?
2. **Census tract Ability to Pay Index** – What is the average household's available budget after housing costs?
3. **Census tract poverty ratio** – what proportion of households are living at or below the poverty level
4. **Energy vulnerability score** - weighted, composite score between 1 and 100 for every customer



Data, analytics, a flexible and comprehensive customer and administrator engagement platform, and a strong user experience are all necessary to drive affordability outcomes.



**Rich datasets
for segmentation and
targeting**

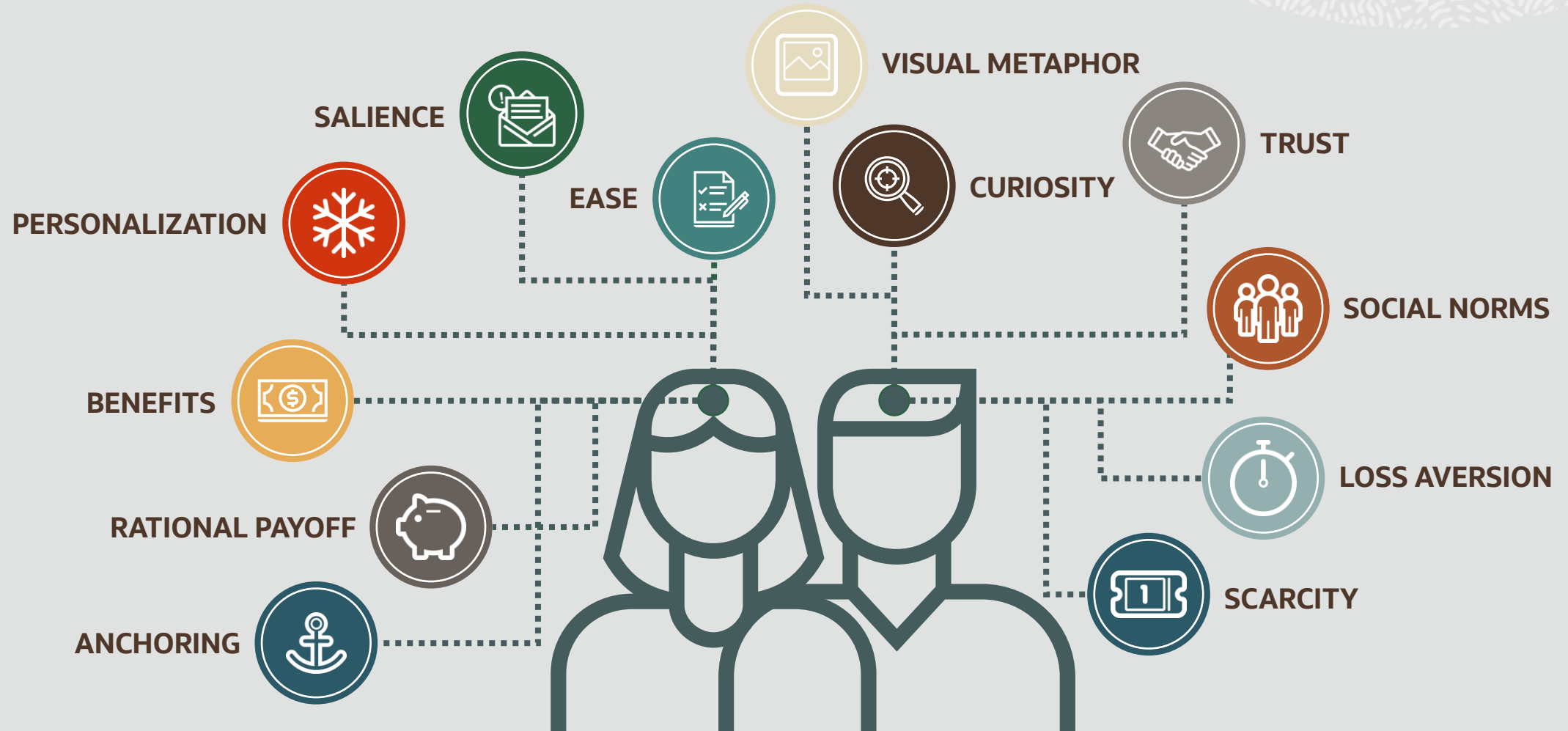


**Surface personalized data-
driven insights within
communications**



**Behavioral science and user-
experience innovation**

Behavioral science describes patterns of behavior that may not always seem rational but are still universal and predictable



Data science, powerful and accessible customer and administrator engagement platforms, and a strong user experience are all necessary to drive affordability outcomes.

2.9X higher
rate of home
weatherization

Northeast IOU #1

22% reduction
in high bill
calls +
27% increase
in program
awareness

Northeast IOU #2

13% increase
in discount
rate adoption

West Coast IOU

Data science will play a pivotal role in achieving equitable decarbonization outcomes



Energy efficiency

- Adoption of whole home retrofit programs
- Targeted EE savings recommendations
- Inclusive program offerings



Electrification

- Identification of Electrification customers
- Adoption of Electrification appliance
- Ongoing electrification engagement



Demand flexibility

- Proven load shifting
- Adoption of DLC devices
- Adoption of TOU rates
- Ongoing demand engagement



Clean power adoption

- Identification of solar / storage customers
- Adoption of Solar / storage
- Ongoing customer engagement

Ask not what you can do for data, but what data can do for you.

- Me (and probably other people)

