Utilizing Human Data Validation for KPI Analysis *and* Machine Learning

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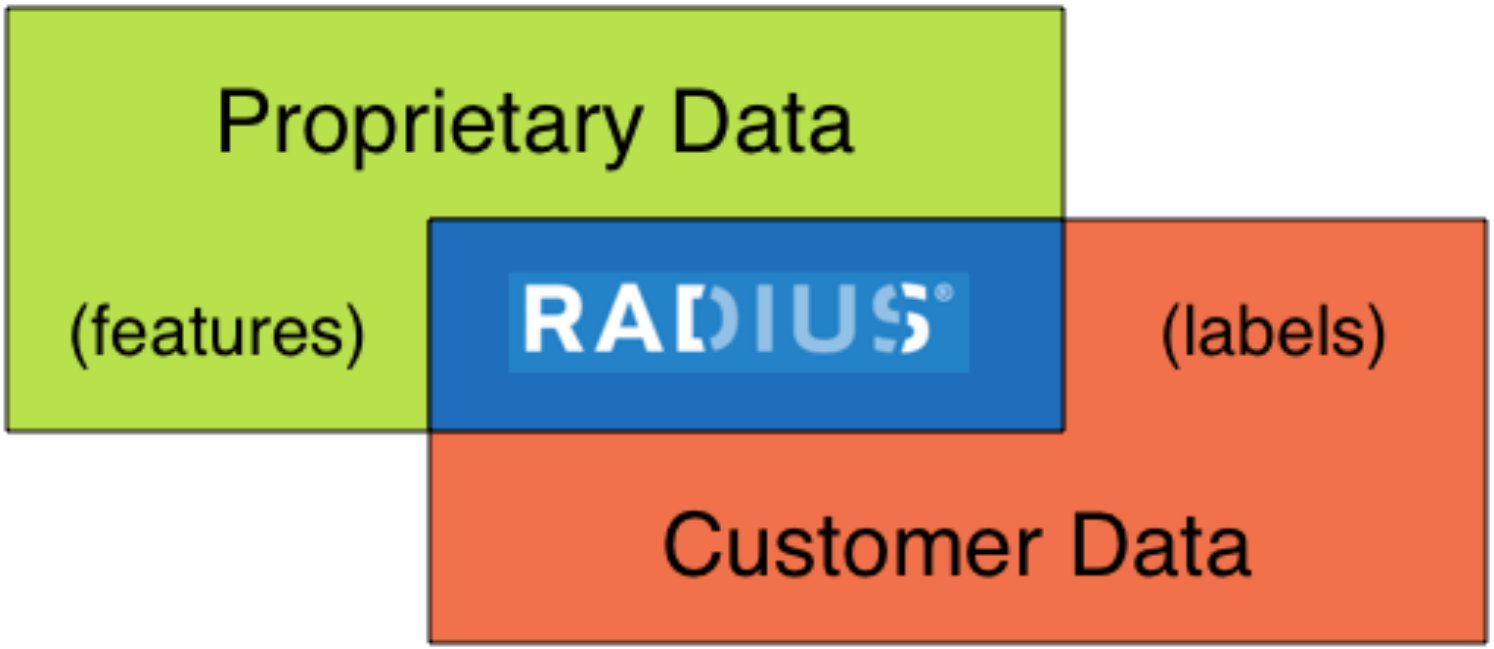
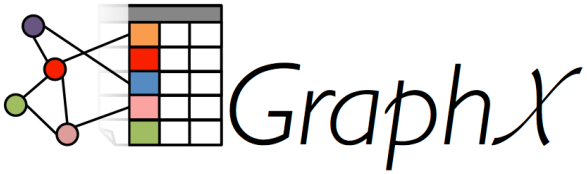
Overview and Key Takeaways

- Data science problems @ Radius
- Human validation: costs and benefits
- Sampling and experimentation for multiple consumers
- Positive feedback cycles in production

Radius - B2B Predictive Marketing



Radius - Data Engineering



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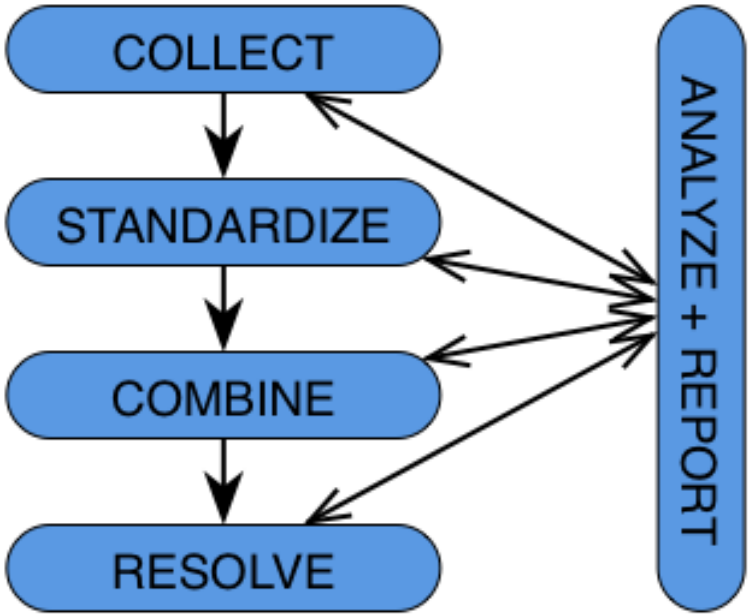
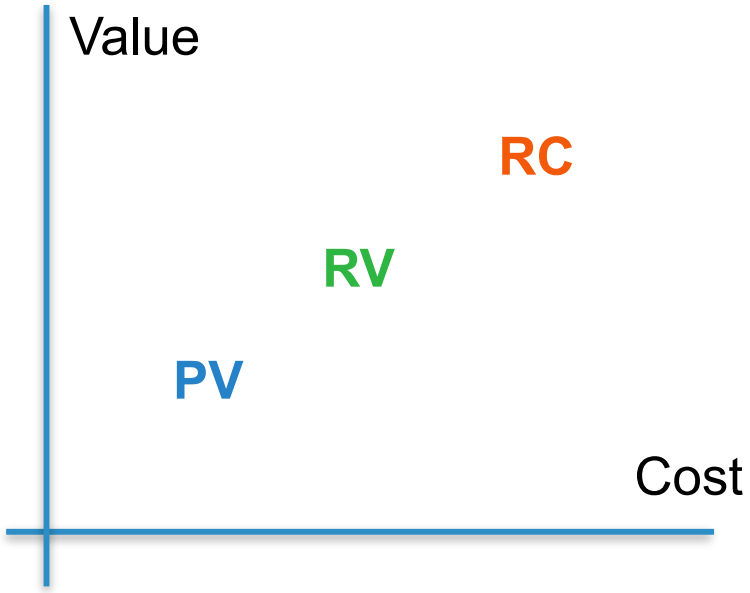


Why Human Validation?

- Business firmographic data is a difficult data problem
- Our sources face the same challenges that we do
- Each source must be considered a “proposal”
- Independent Human Validation is *(the closest thing to)* ground truth

Degrees of Human Validation

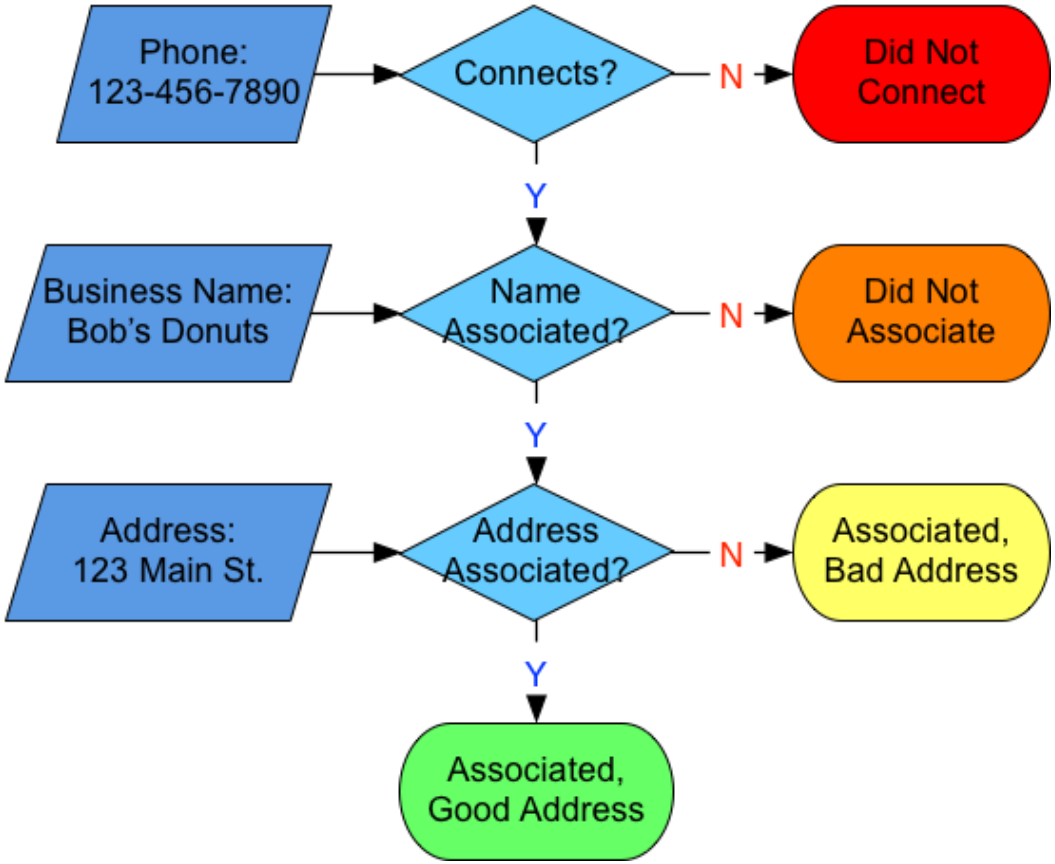
- Prompted Validation
- Research Validation
- Research Curation



Prompted Validation

Example Assignment:

Verify the Phone Number and Address of a Business



Research Validation

Example Assignment:

Determine if a Business Belongs to a Chain / Franchise

Business Name: **Bob's Donuts**
Address: **123 Main St.**
Website: **www.bobsdonuts.biz**
Industry: **Limited Service Restaurants**

Is Chain: **(Y / N / U)**
Chain Type: **(Local / Regional / National)**

Research Curation

Example Assignment:

Where is the Headquarters of this Company Located?

Company Name: **Bob's Donuts Inc.**
Website: **www.bobsdonuts.biz**

Has many locations: **(Y / N / U)**
HQ Location: **???**
Source of information: **???**

Human Validation: Benefits

- Ground Truth
  - Supervised ML
  - Internal Metrics
  - Competitive Analysis

- Our customers are humans, too!

Human Validation: Costs

- Money
- Time
- Us and Them

Cost: Money

- *Validated* data costs more than *aggregated* data

Validation + Data Science

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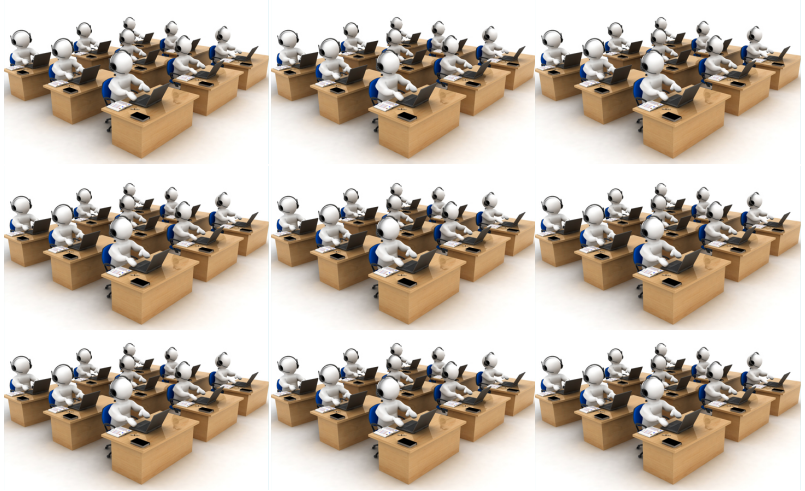
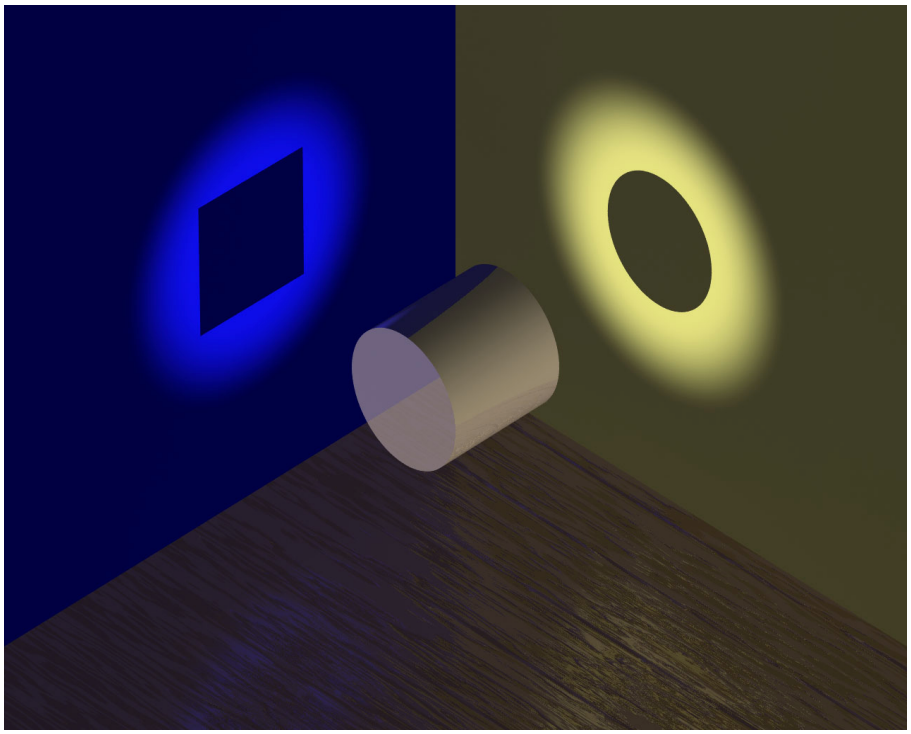


Pure Validation

Cost: Time

- Automated experimental framework
  - Shift bottleneck to validation teams
- Parallelized validation improves turnaround time
  - Be mindful of differences in teams / validators
- Decay / Obsolescence of validations

Cost: Us and Them



Clearly communicate expectations and interpretations

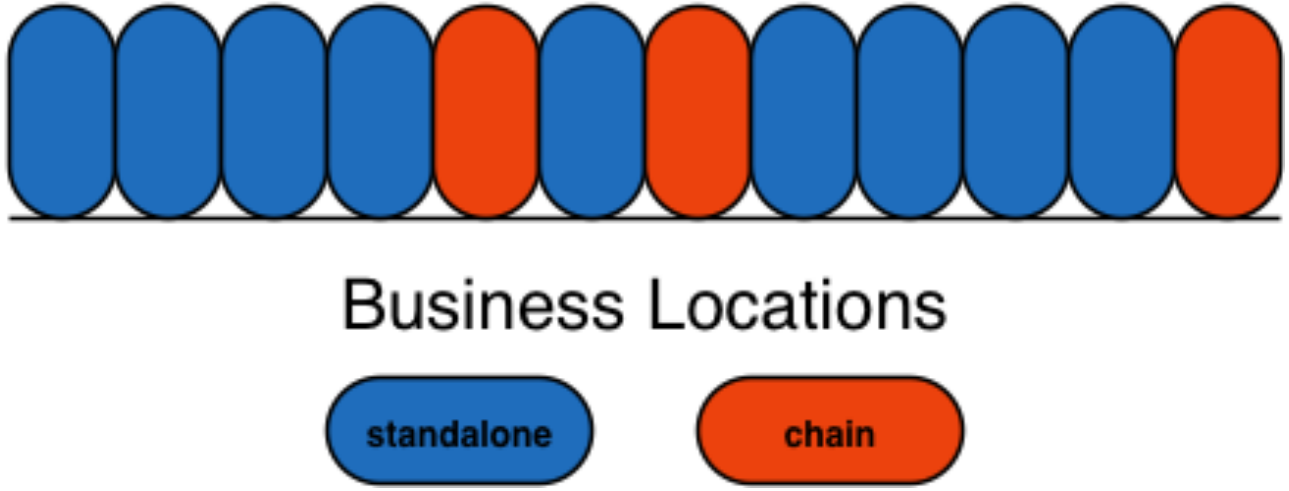
Uses for Validated Data

- KPI Analysis
- ML Training Sets
- Spot Hypothesis Validation

Challenge: minimize number of validations while meeting all downstream needs

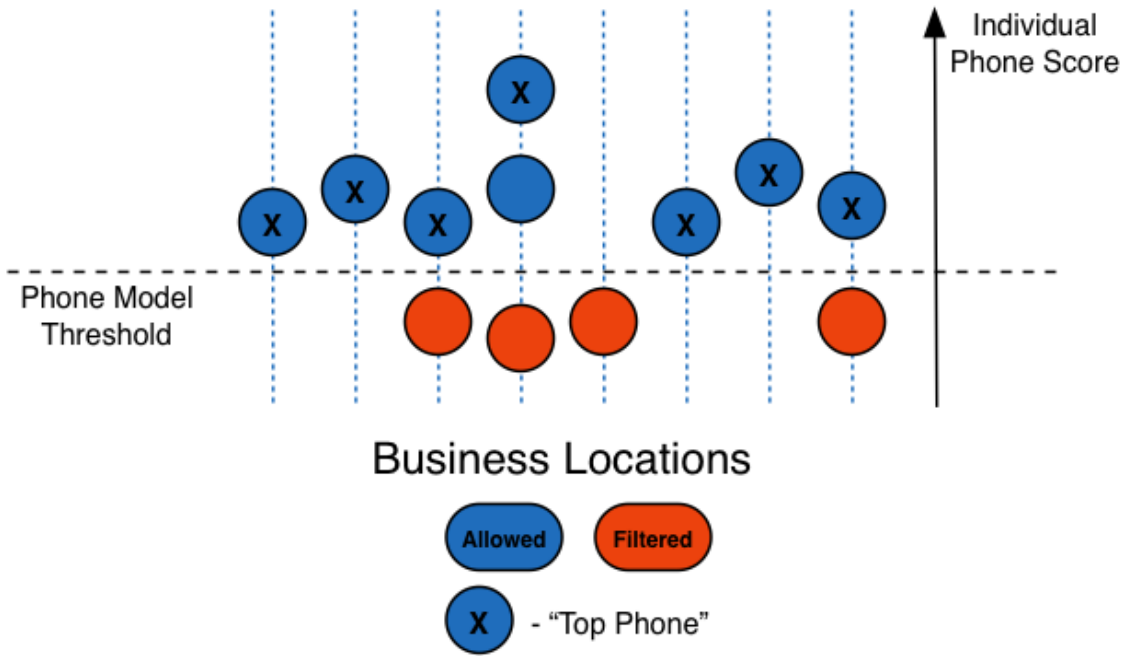
Multiple-Consumer Sampling

Standalone vs. Chain Experiment
1 value per 1 location == Easy Sampling!

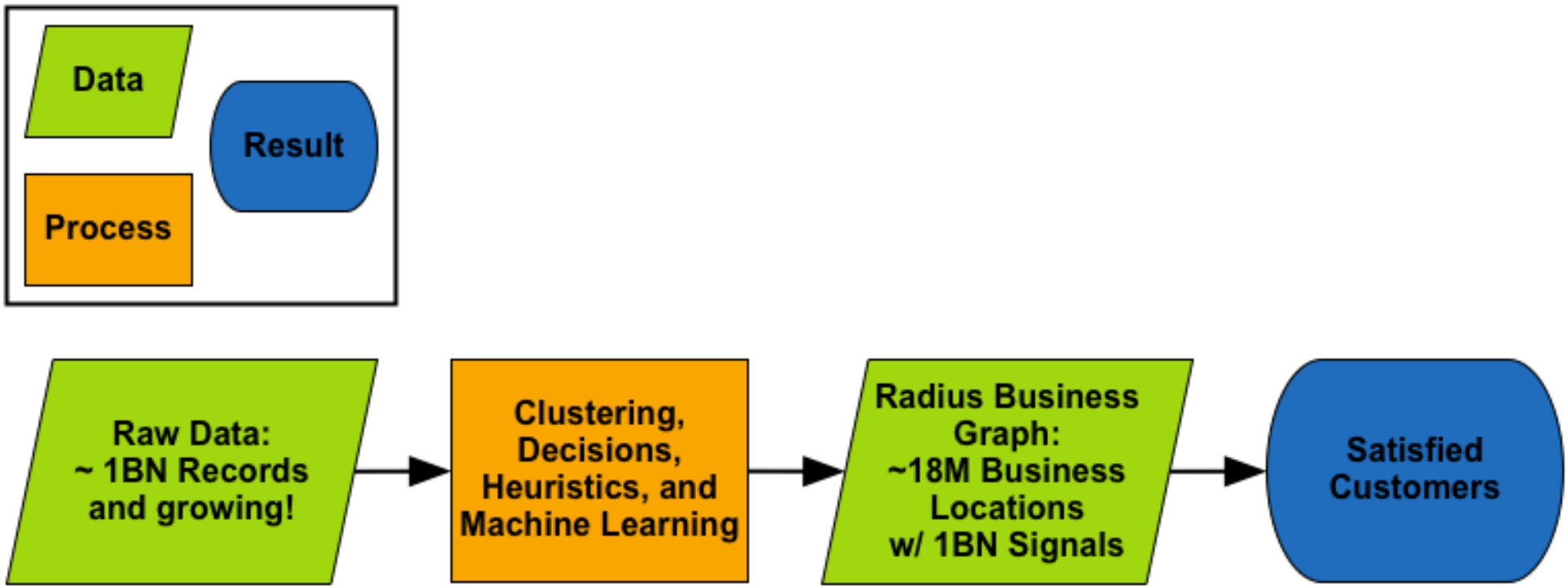


Multiple-Consumer Sampling

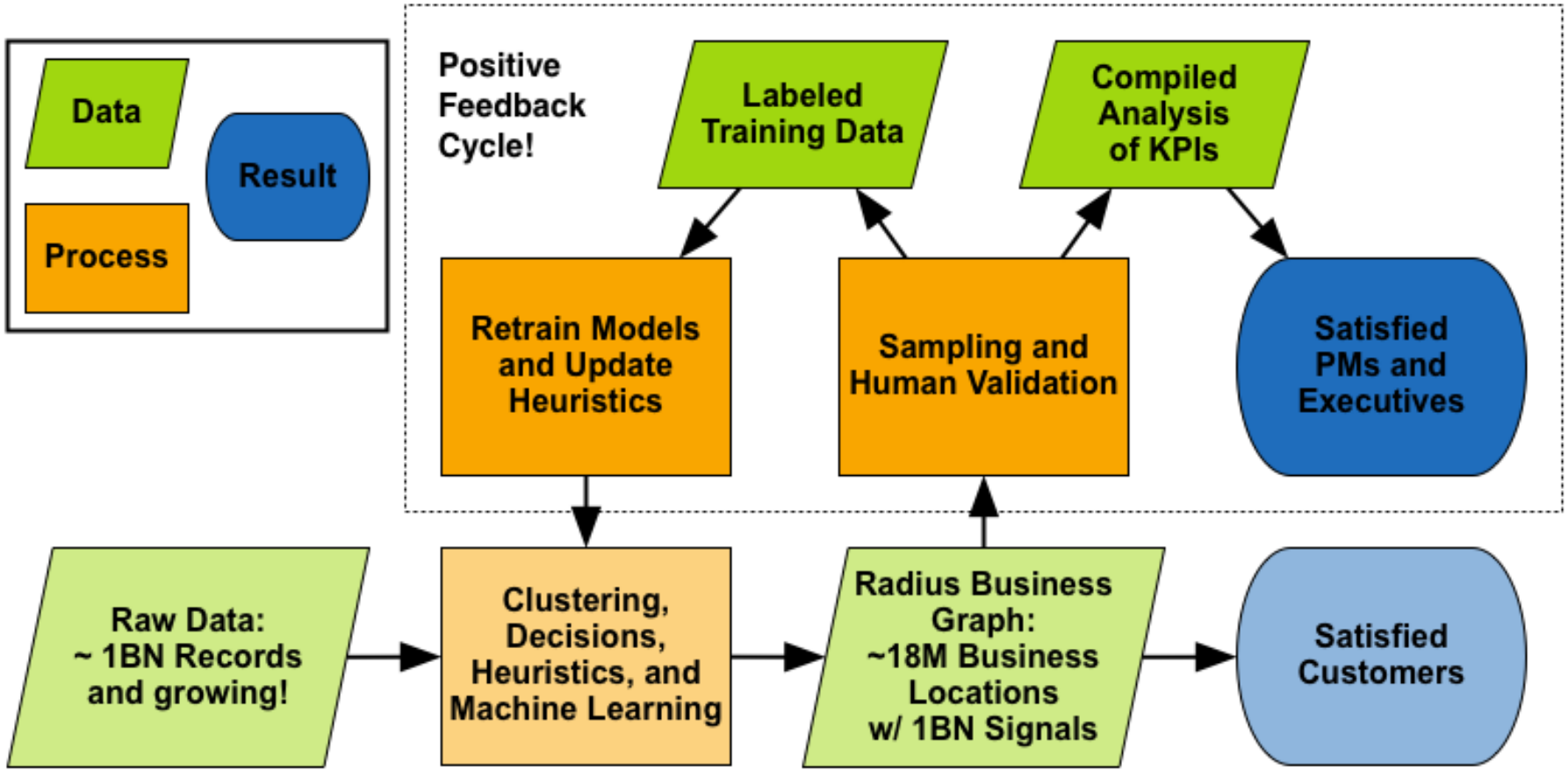
Phone Accuracy Experiment
(0, 1, 2, 3, …) values to 1 location == Difficult Sampling.



Basic Production Pipeline



Positive Feedback Production Cycle



THANKS!

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