PRESCIENCE

An America Based Company Leverages an MDM Solution to Disentangle Its Customer Data

The company provides an integrated service delivery platform to connect fleet companies, vehicle service providers and other 3rd party providers like original equipment manufacturers (OEM), call-centres and equipment owners.

THE CHALLENGES

The service delivery platform allows truck fleet owners to reduce the total down time, whenever one of their vehicles encounters a technical issue. The platform's mobile application and web interfaces enable truck drivers to quickly find and digitally connect with nearby vehicle service dealers. This platform gives vehicle service dealers access to customers that would otherwise not be available to them, thereby maximising the productivity of their technical workforce, increasing sales of spare parts etc.

These vehicle service dealers and other 3rd party providers such as equipment owners, OEMs can directly enter the details of new customers in the platform. The company's sales agents also have the required permissions to add new customers to the existing master list of customers.

However, this data entry process is manual and unregulated. It does not require users to first reference or cross-check with existing customer records. As a result, there are a lot of data

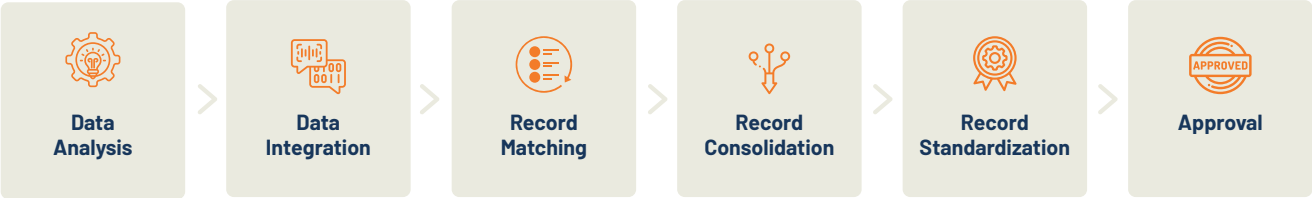
quality issues including redundancies and inaccurate entries. Some of the problems include,

1. Different names for the same customer entity. Examples include entries for Mega Motors Inc, MegaMotorsInc, MegaMotors Inc and MMI, though all of them refer to the same customer.
2. Multiple entries for the same customer entity due to different or inaccurate addresses, zip codes etc.
3. Sample entries from the Testing environment present in the Production environment.

Hence, the company's sales and marketing teams were finding it extremely challenging to correctly identify unique customers in their platform. The company required a new master data management (MDM) system to provide a singular view of their customers for higher levels of engagement, thereby leading to improved retention and revenue growth.

THE SOLUTION

The team of architects and data engineers from Prescience Decision Solutions built a custom MDM solution to address the wide-ranging data quality issues in the company's platform.



A detailed exploratory analysis was performed to understand the overall architecture and identify the specific data quality issues, including the complete set of impacted customer entries. The team extracted the available customer data from different source tables into a new database. The company's business users were consulted to define the baseline formats for creating the customer master data.

Duplicate records were matched in the new MDM system by using natural language processing (NLP) techniques. The system provided a drop-down list of similarly named records and the set of selected records were consolidated into one record in the master data list. The incorrectly entered details of these merged records were cleansed and standardized by normalising the data formats, replacing missing values, removing special characters etc.

The team mapped the different service entries to individual customer entities and created the corresponding master data for it. Once the data records were ready, they were approved to become part of the golden records of customer data.

The new MDM system provides the company's data stewards and other users with an advanced search functionality based on exact and fuzzy matches. These search results are colour coded to identify the level of matching with existing data entries.

The new Audit functionality lets users track the changes that led to the creation of the set of golden records. This extends to the customer's name, details and corresponding hierarchies.

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By using the newly developed Customer Tags functionality, the platform's users can assign a pre-defined tag to their customers based on different criteria. Some of the provided tags include Growth Customers, Top Purchasers, Re-engaged Subscribers etc. In addition to this, business users can also assign their own custom tags to different customers, which will be visible only to them and not any other users.

The new Cart functionality allows the company's data stewards and other users to take collective action on multiple items. When users are uncertain of the correct action to be taken on the data prior to the approval process, they can leave those customer records in their cart and take a decision on it later.

The different technologies used for this engagement included,

- AWS Services (S3, EC2, RDS)
- Python
- SQL
- Data Modelling
- PostgreSQL[NRD1]
- Docker, Kubernetes cluster
- React JS
- Google Firebase

THE IMPACT

With a single version of truth of their customer data, the company is able to assign dedicated client partners to each customer and build long term relationships through targeted actions and marketing strategies. These improved levels of engagement are helping to foster trust and improve customer loyalty. With this, the company receives constant feedback from its customers, based on which it drives several process improvements in their platform and offerings.

Within the platform, the hierarchy tagging for parent and child branches of the customer entities ensures that all the different trucks belonging to various fleets are correctly listed in the platform. With a combination of these new pre-defined tags and custom tags, the users are able to clearly filter, manage and target different customer segments. Also, the platform's search feature helps the company's sales and marketing team to save between 20-30% of their time when searching for existing customers.

Prior to the implementation of the MDM solution, the existing business intelligence (BI) reports had limited value to the business users. Now, with the completely mapped details of the fleet owners to service incidents, the users have a 360-degree relationship view which helps make more informed and timely business decisions.

About Prescience Decision Solutions

Prescience is a business focused analytics firm that empowers organizations to find meaningful insights in their data. Our Business-Backward Approach helps create tangible data-driven solutions that provide users with timely inputs for astute decision making. We do this by leveraging our expertise in machine learning and advanced data science technologies, deep domain knowledge and our customers' business knowledge.
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