



Corporate Time Deposit Customer Profiling and Analysis of Customer Stickiness

By achieving integrated access to multiple sources of data, a Percipient and HPE Proof of Concept demonstrated how Mizuho Singapore's Innovation team could forecast and predict customer cash flow and improve stickiness

Executive Summary

The Business Need:

- Track behaviour patterns within Time Deposit customer segments
- Incorporate market news and events into customer analytics
- Forecast potential for customer attrition

The Tech Challenge:

- Aggregate and store fragmented customer data
- Ingest third party data in real time
- Make available business-specific information

The Solution:

- Unify the bank's multiple databases
- Deploy a firm level Datalake platform to host logical Datalake/Datamarts
- Integrate with the bank's analytics and machine learning code



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Guru S. Anand,
 Vice President from the Innovation Team,
 Asia and Oceania Department,
 Mizuho Bank Singapore.



Manual processes

SG Mizuho's Asia and Oceania Administration Department - Innovation team tracks and forecasts customer cash flows in order to predict the likelihood of large deposit withdrawals and customer stickiness. This helps drive early RM alerts, identification of customer behaviour trends, customer segmentation and liquidity management.

However, these analytics exercises are currently performed by manually extracting and transforming data sourced from a variety of internal databases, a process that is cumbersome, slow and resource-intensive. Factoring in external data adds further complexity and as a result, is not routinely done. As a result, forecasts can only be updated monthly or quarterly, rather than on a more impactful weekly cycle. It is also impossible to continuously back-test and refine the forecast model.

New data elements

To address these challenges, Mizuho engaged integration software provider, Percipient, for a trial of the latter's flagship UniConnect platform. A key requirement for this Proof Of Concept (POC) was for structured and unstructured data to be delivered to a single end-point, paving the way for easy discovery and consumption by various business, technology and analytics teams.

The external data accessed by Uniconnect included:

- SGX prices from Yahoo finance
- Nasdaq Exchange Prices from Yahoo finance

- S&P Exchange Prices from Yahoo finance
- Nikkei Prices from Yahoo finance
- Customer Equity price from Bloomberg terminal
- News items from news api.com using API call from python and Kafka(Hadoop)
- Top 100 news headlines worldwide from the website Kaggle.

This was unified with internal data comprising millions of rows of transaction data stored over the last five years in a variety of repositories and formats, including:

- Oracle
- SQL Server

Next Gen Solution

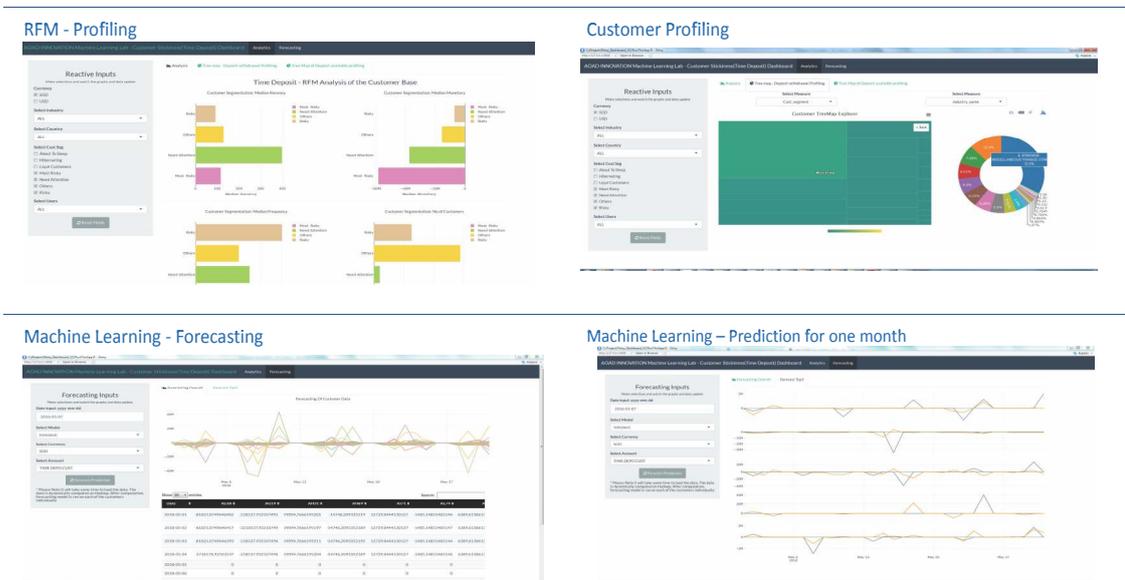
Based on the above specifications, Percipient proposed a solution comprising a number of elements central to meeting the bank's needs.

<p>Connectors</p> <p>UniConnect Connectors deployed in order to automatically ingest data from the multiple sources outlined above.</p>	<p>Data Lake</p> <p>A Hadoop datalake was built on premise. UniConnect's engine was used to move new and existing data to the datalake.</p>	<p>Transformation</p> <p>Approx 30 million customer records were transformed virtually to align with the bank's Python-based forecast models.</p>	<p>Consumption</p> <p>Data could be discovered and queried in seconds or micro-seconds as a single view using UniConnect's SQL interface</p>
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To provide hardware support for this POC deployment of the UniConnect and datalake platforms, Percipient and Mizuho partnered with leading IT infrastructure and services company, HPE. Based on the SLAs defined for the trial, HPE were able to supply a pair of DL380 servers for the Uniconnect and Hadoop Datalake processing.

Analytical Outcomes

Leveraging UniConnect's integration capabilities, Mizuho's SG Asia and Oceania Department's Innovation team built dashboards as shown below:



Analysis of the customer profiling and stickiness patterns allowed the team to uncover a number of important stickiness indicators. Stickiness was determined to be a stable customer variable that relates closely to withdrawals. These results can be used to drive new analytical models and customer retention strategies.

Guru S. Anand, Vice President from the Innovation Team, Asia and Oceania Department, Mizuho Bank

Singapore, said, "We are very pleased with the insights and forecasting we have been able to achieve, underpinned by the UniConnect platform. We believe the solutions that Percipient has introduced to us will substantially lift our analytical capabilities and correspondingly, our productivity, in today's hyper-competitive corporate banking sector."

The full Mizuho Bank Case Study document is available on www.percipientcx.com