



MACQUARIE

Use Case: Customer 360

Master Data Management (MDM) is the managing and uniting of an organization's data to provide a single source of truth. Examples of MDM applications include – Product catalog used to power an ecommerce site, a 360-degree view of the customer.

Industry

Banking

Opportunity

- Transform a digital bank to be more human and intuitive than a traditional bricks and mortar bank, with an intimate understanding of customer needs.
- Deliver innovative digital experiences to customers to become even more relevant in today's digital world.
- Create an intuitive, engaging online and mobile banking experience that gives customers the power to take control of their finances online to reach their goals.

Solution

- Elastic linear scale, tunable consistency in-memory capability and peer-to-peer architecture with DataStax Enterprise.
- Near real time stream processing, machine learning and search capabilities with DSE Search and DSE Analytics.
- DSE OpsCenter provides monitoring and alerting capability, providing platform stability and helps manage platform cost.

Results

- DSE features enable Macquarie to focus on execution of sophisticated personalized recommendations, advice and experience.
- Quicker more efficient time to value for Macquarie's development team and customers.
- Simple upgrades to latest DSE releases, with no downtime, enable Macquarie to be more nimble and relevant with the most up to date technological capabilities.

CUSTOMER 360

MACQUARIE BANK DRIVES DIGITAL TRANSFORMATION WITH DATASTAX ENTERPRISE

Macquarie is a global investment banking and diversified financial services group providing banking, financial advisory and investment funds to institutional, corporate and retail clients around the world. Headquartered in Sydney, Macquarie is the largest Australian investment bank. Macquarie uses DataStax Enterprise Max to power a variety of initiatives in their digital journey. Rajay Rai, Digital Architect in the Macquarie Banking and Financial Services Group, details their use of DSE below.

Choosing the right platform to support our digital journey

Our customer's technological needs and expectations are constantly changing, so it's critical that we change with them to help us deliver a truly world class and innovative digital experience. We believe a digital bank needs to be more human and intuitive than a traditional bricks and mortar bank, with an intimate understanding of what the customer wants and needs. Macquarie has a branchless network and a sound financial services business with strong partnerships with some of Australia's leading brands, putting us in a strong position to deliver an experience customers are not able to get elsewhere. To help us in delivering this innovative digital experience to customers, we needed to look at the architectural foundations needed to support our aspirations to ensure we become even more relevant in today's digital world.

What was needed to drive our digital capability?

When selecting a database that would help us to embark on our digital journey, we had to really understand what we needed. Firstly, the digital architecture had to operate in a continuous real time environment, capturing fast-occurring events and data streams. As consumers have become accustomed to highly personalized digital experiences 24 hours a day, seven days a week, our own systems also needed to be personal and in the moment. We want users to have the same experience they currently have with digital companies like Facebook or Apple, and therefore it was important for us to create an intuitive, engaging online and mobile banking experience that gives customers the power to take control of their finances online to reach their goals.

Personalization had to be at the forefront of our solution, to enable customers to understand how they spend their money, how their finances are performing and where they need to improve, and this meant utilizing both real time and batched analytical solution. To provide quick feedback loops for customers, analytics needs to be in real-time, alongside historical data. With data being pushed on the edge, recommendations and personalization had to have analysis done in near real-time at the point of interaction, or at each transactional action or event. An important digital feature for us was giving users the power to search their accounts and transactions in natural language, so they are able to really engage with their finances and gain genuine insights. This means augmenting the data collected from the customer with information sourced at enterprise level to provide meaningful and searchable analysis, so not only can you search spending on categories like coffee or fashion, but by store and the location of expenditure.

Additionally, to support a great customer experience the volume of transactional data, events and actions has to be considerably large, stored for a long period of time and importantly be accessible

"DSE allow us to focus on delivering an exceptional experience and value, while benefiting from DataStax's commitment to platform innovation."

Rajay Rai, Digital Architect, Macquarie

at high speeds. This means the architecture has to be able to respond to the ever-changing needs and demands of future customers and technologies, given the rapid and flexible platform changes necessary to be and remain relevant in today's digital market.

The solution to building our digital credibility

To support our digital banking transformation, we selected Cassandra due to its elastic linear scale, tunable consistency, in-memory capability and peer-to-peer architecture with DataStax Enterprise. Spark was implemented to provide near real time stream processing and in memory distributed computing capability with support for machine learning and Solr for its search and indexing. All of these come in the DataStax Enterprise (DSE) platform from DataStax.

The key benefit of using these technologies from DSE is the co-location of the data and technology with Cassandra and Solr for search and Cassandra with Spark for analytics. This results in the real-time nodes having access to data instantly and not requiring time-consuming or costly ETL processes to move data between systems, because all the data is transparently replicated in the cluster. The vision of having HTAP (Hybrid Transactional/Analytical Processing) architecture has been achieved with workload segregation allowing data centers dedicated to analytics and search.

DataStax provided the necessary training to help initiate the first phase of our project, and simple upgrades to the latest releases of software, with no downtime, enable us to be more nimble and relevant with the most up to date technological capabilities.

The DSE OpsCenter provides monitoring and alerting capability, providing platform stability and helps manage platform cost. Alerts are raised when best practices are not implemented in the platform, providing platform stability, and with the right amount of automation, helps in managing the cost of the platform. The technology enabled us to reduce the complexity for implementing stream processing for automated push notification and distributed batch processing using Spark. We have been able to deliver rich user experience based on proximity search by providing users with location based information and natural language search which been built on top of the indexing capability of Solr. Data can be served up at high speeds to various devices using the low latency reads provided by Cassandra. Where required we use in memory features of Cassandra to store reference data in memory which is used to accelerate data enrichment at the time of stream processing.

The advantage of using these technologies is that it is founded on the principles of ease of use, low latency, distribution and fault tolerance. These technologies allow us to focus on delivering an exceptional experience and value, while benefiting from DataStax's commitment to platform innovation. A good example is the soon-to-be introduced graph technology on DSE which will further enhance the multi-model capability of the platform, and these features will allow us to focus on execution of sophisticated personalized recommendations, advice and experience quickly and efficiently.

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About DataStax

DataStax, the leading provider of database software for cloud applications, accelerates the ability of enterprises, government agencies, and systems integrators to power the exploding number of cloud applications that require data distribution across datacenters and clouds, by using our secure, operationally simple platform built on Apache Cassandra™. With more than 500 customers in over 50 countries, DataStax is the database technology of choice for the world's most innovative companies, such as Netflix, Safeway, ING, Adobe, Intuit, Target and eBay. Based in Santa Clara, Calif., DataStax is backed by industry-leading investors including Comcast Ventures, Crosslink Capital, Lightspeed Venture Partners, Kleiner Perkins Caufield & Byers, Meritech Capital, Premji Invest and Scale Venture Partners. For more information, visit DataStax.com or follow us [@DataStax](#).