



DATA DISCOVERY AND ANALYSIS

Retail Operator

Our client is a popular retail operator with stores across the US. Over time, their customer data had become difficult to manage, correlate, and spread across multiple systems. This left them struggling to effectively cater to customer needs, risking business loss.

MongoDB recognized gravity9's experience in this area and partnered to execute our Enterprise Discovery Program to interpret the client's data systems, present useful findings to them, and suggest opportunities for architectural modernization for future growth.

Despite the volume and complexity of customer data, gravity9 successfully delivered over 25 deliverables within the project's 12-week time frame, ranging from

data lineage, accuracy assessment, and scoring of quality metrics. This allowed the client to fully understand their customer data and paved the way for modern innovation, including designs for an Operational Data Layer, enabling better marketing, decision-making, and scope for future modernization projects.

gravity9 delivered the interpretation of over 10 million customer data records containing hundreds of data attributes, a critical assessment of over 10 Enterprise Systems of Record supporting a \$20bn+ organization, and the construction of 25 data-oriented deliverables to explain and measure data quality.



Review of Challenges

Our well established client is one of the largest department store chains in the world, with hundreds of stores in the United States. Because of its longevity, its IT systems became increasingly complex, with data stored in different ways across different systems. Following an internal company review, it became apparent that knowledge gaps and confusion surrounding these data silos left the client struggling to maintain and adequately leverage that data. As a result, they were increasingly at risk of misunderstanding or failing to meet customer needs, which could significantly impact customer relationships and sales across the brand. This has proven to be a critical disadvantage in modern retail landscapes, where innovative online competitors with thoughtful data architectures are better positioned to capture business opportunities.

When the client approached MongoDB to investigate their system's data flows and how they might leverage future

modernization, MongoDB recognized gravity9 as the best partner for a comprehensive, fast-paced, 12-week discovery project to interpret the client's data structures, develop an understanding of data quality, and recommend "next steps" for new, modernized systems.

The client's relevant customer data was spread across thousands of fields, and millions of records within the 10+ analyzed Systems of Record (SoR), which contained relational databases, ETLs, and fractured processes.



Utilized Technology Stack

- Oracle DB and relational database schemas
- Raw database exports (of sanitized customer data)
- Tibco EMS
- ETL (Extract, Transform & Load) Processes
- HTTPS and data transfer technology

Our Solution

A vast amount of information was successfully processed from multiple sources within tight deadlines, constructed as part of our Enterprise Discovery Program format. gravity9's Discovery Program supported the creation of over 25 high-quality, complex deliverables, which were mapped to 11 extensive documents, spreadsheets, Figma boards, and diagrams.

gravity9 delivered a comprehensive view of current data systems as well as recommendations for implementing a subsequent Operational Data Layer (ODL) or Master Data Management (MDM) project. These systems enable the centralization of customer data, making it significantly more straightforward to manage, and the deprecation of unneeded (or unreliable) source systems. These recommendations included architectural layouts, use cases, products to use, approaches to data migration, and what data points to migrate into the new system.

To assist this process further, a custom framework was designed for matching and merging data across the many SoRs based on our gained knowledge and discipline in the data management space. This provided opportunities to simplify and deprecate brittle data processes, improving upkeep and reliability.

Our Approach

gravity9 made valuable contributions during the pre-sales process, suggesting deliverables to solve the client's most critical questions around their data. This included documenting tables and relationships between each SoR, identifying customer use cases and journeys, analyzing data quality and lineage, and suggesting replacement architecture to manage the next steps in their data journey properly.


With the project underway, we gathered requirements from various business stakeholders and SMEs to understand each unique SoR and how best to extract relevant information, designs, and implementations.

Our team worked through each SoR, creating an understanding of business processes and data relationships to help untangle the complexity of each silo. This was compounded given that useful data was only available in the production environment, causing delays to fact-finding and documentation progress within the short engagement window.

**WE'RE
BUILDING
BETTER
DIGITAL
PRODUCTS**

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“... a better retail experience as their needs and user journeys are better understood”

Subsequent Outcomes

Prior to gravity9's involvement, the client's vast quantities of customer data were spread across numerous disparate systems and formats, making them difficult to understand and almost impossible to draw practical analytical conclusions from.

As a result of this Enterprise Discovery Program, they regained a thorough understanding of how their systems are laid out and how data transits the components of their infrastructure. The client IT team is empowered with new confidence in arriving at valuable conclusions from existing legacy systems.

The organization's customers can look forward to a better retail experience as their needs and user journeys are better understood. The client can now tailor solutions to modern retail trends and opportunities to maximize sales and growth.

Furthermore, the client received plans for further development of systems and architecture that will benefit efficiency and management, taking the pain and complexity out of existing systems and providing an excellent platform for future growth.

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