

# Databricks Outcomes for Macquarie Group



## Drive Growth

### Investment Analytics

- Market Intelligence
- Backtesting
- Portfolio construction & Optimization
- Alternative Data & ESG Analytics

### Personalisation & Lead Mgmt

- Cross sell & up sell
- Churn prediction & segmentation
- Client Retention
- Hyper personalized banking
- Campaign development

### Investment Advisory

- Personalized Investment Advice
- Sales & Trading Intelligences
- M&A Automation and Integration

### Trading Analytics

- Real-Time Market Analysis
- Transaction Cost Analysis (TCA)
- Predictive Analytics and Forecasting
- Algorithmic Trading

### Risk Management

- Market Risk
- Credit Risk
- Counterparty Risk

## Protect the Firm

### Cybersecurity

- User & Entity Behavior Analytics
- Threat Hunting & Advanced Detection
- Network Analysis & Inventory
- Phishing & Email Security
- SIEM Augmentation

### Fraud Prevention

- Transaction Fraud Prevention
- Application Fraud
- Identity Theft

### Regulatory Compliance

- Transaction monitoring
- Screening (KYC)
- Credit Recognition (CECL)
- Model Risk Management

## Be More Efficient

### CFO & Treasury

- Financial Projections & Reporting
- Operational Dashboarding
- Performance reporting and analysis
- Expense and Cost management
- Regulatory Reporting

### Back - Middle Office Automation

- Intelligent Document Processing
- Customer Onboarding (AML/KYC)
- Workforce Analytics

## Customer Outcomes Realised

\$10 - 20M annualized value due to portfolio construction recommendation

\$53m through improved cross-selling  
\$40-65M revenue uplift through personalization

\$10 - 50M annualized value due to personalized investment advisory

\$\$\$

\$20B in capital savings  
Prevention of "London Whale" event happening twice

\$44M in SIEM cost avoidance, and a 5x increase in operational query performance

\$25-40M annualized value due to reduced loss from Fraud

\$35M annual value from avoided regulatory fines

Near instantaneous c-suite insights: 2 days → 2 minutes

50-60% of tasks automated, reducing processing costs by many millions



standard chartered

Morgan Stanley

UBS



Nasdaq

nab



HSBC



Capital One



STATE STREET

JPMORGAN CHASE & CO.



Northwestern Mutual



# Use Cases



## Why Change? Why Now?

Advanced data analytics enables asset managers to gain insights from diverse data sources, improving investment decisions, portfolio optimization, and risk management. It facilitates personalized solutions and predictive capabilities through AI integration. In a competitive industry, embracing data analytics is crucial for efficiency and delivering superior client value.



### Business Use Cases

-  Market Intelligence
-  Backtesting
-  Portfolio Construction & Optimization
-  Alternative Data & ESG Analytics



### Technical Differentiators

- Governance:** experiment tracking and exploration of new trading strategies, linking code, data, notebooks with time travel capabilities.
- Serverless:** always on compute to convert trading strategies into efficient backtesting pipelines
- Delta Sharing:** empowers the exchange of continuously updated data feeds from financial data providers eliminating copying & complex ETL

Lakeflow

Generative AI

Unity Catalog



Leverage Delta Sharing for integrating extensive digital asset data for investment analytics and alpha generation. This facilitates seamless access to crypto trades, quotes, and order books data.



Integrating investment data with external sources to enhance trading execution, performance, and reconciliation. Reducing job runtimes and improving data quality.



Respond swiftly to market changes and enhance predictive capabilities in a competitive landscape where timely information can significantly impact investment outcomes. [video](#)

## Why Change? Why Now?

Banks face competition from neo banks and fintechs, with high customer expectations and low satisfaction. Fragmented data and compliance issues hinder seamless experiences. Implementing composable customer data architectures with Databricks helps consolidate data, integrate AI for behavior analysis, and enhance competitiveness by meeting evolving customer needs.



### Business Use Cases

-  Prospecting campaigns development
-  Hyper personalized banking
-  Cross sell & up sell
-  Churn prediction & segmentation



### Technical Differentiators

**Governance:** Unity Catalog brings lineage to govern and protect highly sensitive customer data from code, models and dashboards.

**Lakeflow:** MLFlow + Lakeflow brings AI to online applications for real time recommendations and A/B testing.

**Collaboration:** Enforce highest security standards through cleanroom to enable data collaboration with 3rd parties and adtech providers.

Unity Catalog

Lakeflow

Mosaic AI

#### Navy Federal

Leveraging Delta Live Tables to drive real-time omnichannel app monitoring for 13 million members

[story](#)

#### ABN Amro

Deployed a group wide data mesh strategy in order to power each line of business with AI capabilities

[story](#)

#### Siam Bank

Making real time recommendations (next best actions) for their 17 million customers

[story](#)



## Why Change? Why Now?

Investment advisory services are evolving due to client demands, technology, and market complexity. AI-powered chatbots offer personalized advice, enhancing efficiency and client relationships. This transformation, driven by regulatory changes and competition, requires firms to innovate and leverage data analytics to remain competitive.



### Business Use Cases



Personalized Investment Advice



Sales & Trading Intelligences



M&A Automation and Integration



### Technical Differentiators

**No code:** advisors analyze client data, market trends and portfolio performance through intuitive dashboards and natural language queries.

**Agentic AI:** develop and evaluate AI agents for personalized investment recommendations and portfolio optimization.

**Unity Catalog:** Audit trails and data lineage, logging any input / output interactions a client had with a model through our inference tables

AI/BI

Generative AI

Unity Catalog

Morgan Stanley

Implement a new model for wealth management that provides their financial advisors with detailed insights into their clients' behaviors and preferences.

Canada Pension Plan Investment Board

Implemented a "Portfolio Valuation Analytics" interface, leveraging generative AI capabilities to help analysts value the companies they own.

 Nasdaq

Improved customer experience through hyper-personalization, enabling Nasdaq OMX Group to tailor their services and recommendations.



## Why Change? Why Now?

Trading analytics professionals seek new technologies to gain a competitive edge in complex markets. They need real-time processing, predictive analytics, and automated systems to make informed decisions. AI and machine learning help optimize trading, manage risks, and meet evolving regulatory and client demands.



### Business Use Cases

-  Real-Time Market Analysis
-  Transaction Cost Analysis (TCA)
-  Predictive Analytics and Forecasting
-  Algorithmic Trading



### Technical Differentiators

- Workflows:** traders perform real-time market analysis, backtest trading strategies, combining engineering and DS in a same workflow.
- Serverless:** unparalleled scalability for processing massive datasets to analyze market data and generate insights at unprecedented speeds.
- Delta Sharing:** empowers the exchange of continuously updated data feeds from financial data providers eliminating copying & complex ETL

Lakeflow

Unity Catalog

Generative AI

#### Schonfeld

Historical Time Series Analysis and macro trends to allow them to identify new trading strategies. Automation around end to end trading reduces operational risk.

#### Viking Global

In process of moving TCA from OneTick to Databricks Weeks to hours of back-processing and AS OF and bar calculations to minutes

#### Chicago Trading Company

Moved on-prem Hadoop-based time series processing to Spark/Databricks for transaction cost analysis



## Why Change? Why Now?

Risk management in finance now requires advanced analytics and real-time processing to address market, credit, and counterparty risks. Modern solutions enable faster calculations, complex analyses, and better decision-making. This approach improves capital allocation, reduces losses, enhances compliance, and boosts overall financial stability and competitiveness.



### Business Use Cases

-  Market Risk (eg. VaR)
-  Credit Risk (eg. default risk)
-  Counterparty Risk (eg. assessing counterparty default risk)



### Technical Differentiators

- Serverless:** run compute intensive risk assessments (eg. VaR), and what-if simulation with speed & agility through optimized compute.
- Delta Sharing:** empowers the exchange of continuously updated data feeds from financial data providers eliminating copying & complex ETL
- Governance:** audit trails and data lineage, critical for compliance and fiduciary responsibilities for running risk calculations

Lakeflow

Unity Catalog

Generative AI

#### JPMORGAN CHASE & CO.

Legacy architecture limited high-level aggregations. Removing these tech bottlenecks for 200+ users, allowed them to perform granular analysis with on-demand interactive dashboards.

#### Morgan Stanley

Standardized Approach for Counterparty Credit Risk (SA-CCR) using Databricks. Increased capacity by 30x, and achieved \$20b in capital savings.

## Why Change? Why Now?

Enterprises face challenges in scaling cybersecurity due to fragmented data, AI/ML reliance on clean data, legacy system inefficiencies, and vendor lock-in. These issues hinder threat detection, increase costs, and limit adaptability. A layered data architecture integrating long-term storage, governance, and advanced analytics is crucial for cost-effective, scalable, and AI-enabled cybersecurity operations as data volumes grow.



### Business Use Cases



- User and Entity Behavior Analytics (UEBA)
- Threat Hunting & Advanced Detection
- Network Analysis & Inventory
- Phishing & Email Security



### Technical Differentiators

Unified, open data management for centralized logging using data lake economics to efficiently scale and deliver the lowest TCO without compromising performance

Integrating streaming data engineering with AI/ML for real-time threat detection & response

MLOps for custom model deployment resolves enterprise-specific threats much faster than static AI solutions.

Lakeflow

Unity Catalog

Generative AI



Improved security operations performance while also reducing cost – \$24M in SIEM costs, and a 5x increase in operational query performance

### Major Retail Bank

Splunk augmentation reduced cyber costs by up to \$12m per year and improved threat detection and compliance response time by >90% by unlocking AI.



## Why Change? Why Now?

FSIs see increasing sophistication of fraudulent activities such as insider trading or market manipulation. Insider trading and market manipulation tactic still remain a persistent threat, risking severe penalties and reputational damage. To proactively addressing risks, safeguard their assets and comply with regulations, FSIs must utilize Data, AI & ML to analyze trading patterns and detect anomalies in real-time to operate efficiently, at scale.



### Business Use Cases

-  Insider Trading Detection
-  Market Manipulation Monitoring
-  Spoofing Detection
-  Fraudulent Activity Reporting



### Technical Differentiators

**Ingest:** Real-time data processing enables firms to analyze billions of transactions daily and monitor trading activities as they happen.

**Interoperability:** Any models can be integrated into batch or real-time engines or behind scalable endpoints with serverless deployments.

**No code:** Auditors can create dashboards and visualizations to conduct forensic analyses in natural language, making data insights more approachable and actionable

Lakeflow

Unity Catalog

Generative AI

### Optiver

Faced challenges in integrating custom trade surveillance and compliance rules due to market complexities. Leveraging key technical capabilities enabled them to streamline their compliance data ingestion and reporting processes



## Why Change? Why Now?

FSIs are confronted with stringent demands for Model Risk Management, Transaction Reporting, Capital Adequacy Reporting, Position Reporting, and Liquidity Coverage Ratios, all of which are essential for ensuring market integrity, transparency, and stability. Firms need AI and ML to streamline compliance processes, enhance decision-making, and improve cross-functional coordination to address intricate risk landscape



### Business Use Cases

-  Transaction Reporting
-  Capital Adequacy Reporting
-  Liquidity coverage ratio
-  Position reporting
-  SR11 / Model Risk Mgmt. (MRM)



### Technical Differentiators

**Serverless:** run compute intensive risk calculation and stress tests scenario to comply with regulatory reporting requirements.

**Unity Catalog:** maintaining robust governance standards with automated data quality to ensure reliability of regulatory reporting.

**No code:** democratize data access, empowering compliance teams to conduct reporting at different granularities in natural language.

Lakeflow

Unity Catalog

DBSQL



AML Compliance system migrated to Databricks driving 50% improvement in processing performance to achieve critical regulatory SLAs, saving millions thru efficiency and reduced TCO (\$3M for single workload)

### Top 5 Investment Bank

Trade Surveillance on Databricks resulted in 70% reduction in false positives, saving 10,000 analyst hours and \$5M annual cost savings from improved operational efficiency and reduced fines

## Why Change? Why Now?

FSIs are enhancing financial planning and risk management processes to adeptly handle economic uncertainties while leveraging advanced technology and data management to improve decision-making and operational efficiency. Modern treasury functions are leveraging cloud-based solutions and advanced analytics to optimize cash flow forecasting, liquidity management, and risk assessment. By integrating innovative treasury management systems with existing financial infrastructures, CFOs can enhance visibility into cash positions, improve payment processes, and ultimately drive operational excellence.



### Business Use Cases



Financial Projections & Reporting



Operational Dashboarding



Performance reporting and analysis



Expense and Cost management



### Technical Differentiators

**Data Federation:** consolidation of financial data from multiple sources, eliminating silos to deliver accurate, real-time insights.

**Transparency:** ML lifecycle for high materiality models through experimentation tracking, model versioning, and data lineage with UC.

**No code:** CFO analytics accessible to business users in natural language through AI/BI and lakeview dashboards

Generative AI

Unity Catalog

AI/BI

#### Top 5 Investment Bank

Identified ~72k hours / year of effort reduction (in a single headcount reporting use case). Reduced Data duplication to generate one authoritative copy of data.



## Why Change? Why Now?

Capital markets firms are focusing on automating middle and back-office operations to improve efficiency. Manual processes in trade reconciliation, settlement, and compliance are time-consuming and error-prone. The transition to T+1 settlement increases pressure for accurate, timely reconciliations. Adopting technologies like RPA and IDP can streamline operations, reduce costs, and minimize risks.



### Business Use Cases



- Intelligent Document Processing
- Portfolio Performance Tracking
- Trade Reconciliation and Settlement
- Workforce Analytics



### Technical Differentiators

**Document processing:** GenAI streamlines data ingestion by intelligently processing unstructured data and complex documents.

**Unity Catalog:** monitors the quality of middle-office operations and ensure that automated processes align with regulatory compliance

**Agent evaluation:** design and monitor agents capable of combining reasoning capabilities of LLMs to orchestrate business processes.

Lakeflow

Unity Catalog

AI/BI

#### Coastal Community Bank

Offers banking as a service to financial technology companies, leveraging Delta Sharing to enable sharing data with their partners while ensuring compliance.

#### First American

Automates the extraction of data from millions of files (daily) of property records through fine tuned generative AI, achieving automation of 63% of tasks. story

# Appendix B: Case Studies



# RBC uses AI to transform capital markets research

## Challenge

RBC Capital Markets faced mounting pressure to deliver expert research and insights across a broader coverage universe, faster than ever before, as clients demanded near real-time, differentiated commentary. Traditional analyst workflows were highly manual and slow, with post-earnings research notes taking up to 45 minutes per company—creating bottlenecks and risking missed market opportunities.

## Solution

RBC partnered with Databricks to build Aiden QuickTakes, a proprietary AI application embedded within a secure, cloud-native Data Intelligence Platform. This unified environment—leveraging Databricks' Unity Catalog for governance and Mosaic AI for end-to-end AI capabilities—automates data ingestion, analysis, and content generation, enabling analysts to produce high-quality research drafts in minutes while maintaining strict security and compliance standards.

## Impact

**60%**

Reduction in research turnaround time

**Thousands**

Of hours reclaimed for higher value work

**Faster insights**



# Databricks Fuels NAB's Data-Driven Transformation for 8.5 Million Customers

## Challenge

NAB, Australia's largest business bank, needed to replace slow and costly legacy data platforms to enable real-time analytics, AI, and regulatory compliance for millions of customers.

## Solution

NAB built a cloud-native data platform on Databricks, unifying engineering, analytics, and AI workloads on a modern, governed lakehouse.

## Impact

**50%**

Cut data ingestion costs

**30%**

Boost in ML model and query performance

**1,000+**

users enabled with self-service, governed data access





## Challenge

FactSet's previous solution, Synapse ETL, was inefficient from 2 perspectives: performance and complexity. First, Synapse ETL pipelines were slow, each taking over 30 minutes to run. Second, Synapse's architectural complexity required stitching together various tools and limited data engineering format choices. Security also became a big challenge.

## Solution

Databricks Data Intelligence Platform allowed FactSet to unify their data use cases and scale in a cost-efficient manner. The Databricks Data Intelligence Platform unifies data lake assets with warehouse-level performance, including unified governance tools like Unity Catalog and scalable tools like open-source Delta Lake and Apache Spark.

## Impact

**80%**

Reduction of ETL costs aided by faster processing times, and auto scaling clusters

**90x**

performance improvement





# How State Street Unifies Data and Drives Innovation with Databricks

## Challenge

State Street aimed to unlock the potential of structured and unstructured data for faster, smarter decision-making in the financial services sector. Unfortunately, they dealt with:

- Difficulty accessing insights from siloed data, including unstructured formats like PDFs.
- Fragmented data sources hindered seamless integration and timely insights.
- Inefficient workflows to transition from raw data to actionable AI outcomes.

## Solution

Databricks Data Intelligence Platform empowered State Street to unify its data and AI workflows for efficient, scalable insights.

- **Unity Catalog:** Centralized governance and seamless indexing across structured and unstructured data.
- **AI Workflows:** Enabled large-scale data processing and curation for actionable insights.
- **Unified Platform:** Integrated structured and unstructured data for streamlined AI-driven decision-making.

[Watch the video >](#)

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## Impact

## Unified

data accessibility, unlocking actionable insights from both structured & unstructured data

## Faster

and smarter decision-making after breaking down silos, enabling timely insights in a competitive financial market



**fastest any technology  
of this scale and  
complexity get to  
production at JPMC**



Ray Wangneo - JPMC CTO





# Block improves employee productivity and data access with Claude in Databricks

## Challenge

Payment processing company Block had vast internal data but lacked a scalable way to make it accessible to non-technical employees across departments. This limited productivity and slowed innovation, as teams depended on specialists for insights, coding, and system navigation.

[Watch the video >](#)

## Solution

By integrating Claude with the Databricks Data Intelligence Platform through their internal agent goose, Block created an AI-powered system that automates workflows, generates SQL, and connects to internal tools. This democratized data access, enabling thousands of employees to analyze data and build solutions without needing deep technical skills.

## Impact

**30%**

Expected employee time savings with AI

**75%**

Of engineers saving 8 to 10+ hours every week

**\$10M**

Additional productivity gain vs. forecast, with 3x better price/ performance for serving models



# Mastercard Scales GenAI Innovation

## Challenge

Mastercard struggled to scale over 300 GenAI proof-of-concept (PoC) projects due to concerns over cost, governance, and risk, leaving many promising ideas stuck at the demo stage. They needed a secure and unified platform to operationalize these use cases across the organization.

## Solution

Using Databricks, Mastercard transformed their initial "Product Onboarding Assistant" PoC into the "Mastercard Assistant" platform, which efficiently supports multiple GenAI applications. This enables scalable and secure deployment of GenAI, driving innovation while managing governance and costs.

## Impact

**300+**

GenAI applications deployed on Mastered Assistant

**50%**

Reaching goal to have more than half of their revenue stem from data products and services



## Databricks enabled the performant data pipelines required for genAI

### Data Challenges

The Bank noticed Finance team members were spending too much time on low-value, routine inquiries and thought genAI could help. However, to build a modern, genAI solution required a streamlined, performant, and integrated approach to data.

### 2 days → 2 minutes

For c-suite to glean insights from data

### 7x faster

Pipeline processing

### Hundreds

Users across Finance

### Databricks Impact

By leveraging Databricks as the foundational data platform, the Bank was able to build and launch “ChatCFO”, allowing the finance team to automate those routine workflows and focus, generate financial models, and provide data-driven insights to executives

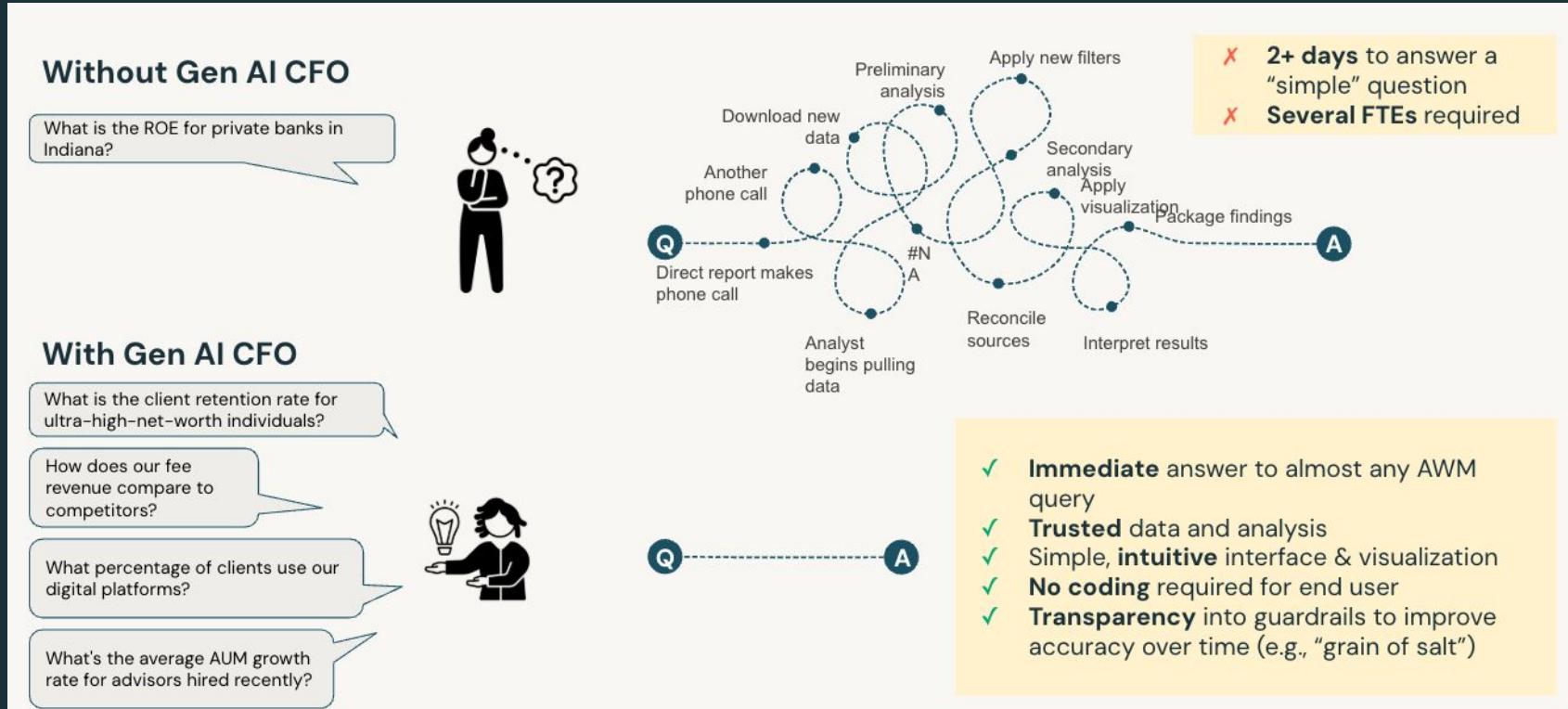
*“You would have thought Santa had come down the chimney with the Finance team. They were in heaven... These systems, they don't get tired, they don't get grumpy. All the people in the back of the room here are exhausted... And just imagine if we could just be asking ChatCFO..”*



# Top Banking Client – Enabled Launch of GenAI “CFO” Product



Allows the Bank to lower the cost of curiosity for executives and practitioners





## Databricks enabled seamless integration for self-service analytics

### Data Challenges

Their prior internal solutions were not integrating seamlessly and needed to unify their data platform.

One single query for EOY reporting took **2 hours per 1 calendar day of data (30 days/year of data)**.

### 30 days → 17 minutes

Improved Regulatory reporting model

### 2 Hours

Onboarding to Databricks

### 1,800

Total Users

### Databricks Impact

Streamline the preparation of financial statements and regulatory reports. These tools pull data from multiple systems, perform calculations, and ensure compliance with accounting standards, significantly reducing reporting time.

*“The migration to Databricks proved to be a key step in optimizing data processing. It has given our teams greater autonomy while ensuring a high level of data quality and security.”*



# Corporate Finance | Accelerating Insights: Days to Minutes



*"I have ~200 users and they are doing things they could never do before without a powerful CDW like Databricks. Financial Analysts can drill down from an aggregated report to a specific record in a table of several billion records. Previously, that would have taken several days...we now have real-time, ad-hoc access to granular transaction data."*

**2-3 days → 3 minutes**

Accelerated time to insights (cohort analyses)

Business Problem	Corporate Finance Team faced challenges in analyzing vast amounts of financial data efficiently. With over 80 billion records in their financial data mart, they struggled to provide timely, granular insights to their analysts and decision-makers. The existing Hadoop-based system was slow and inflexible, hindering their ability to make data-driven decisions quickly.
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**80 billion records**  
aggregated on the fly in seconds

Challenges	Capabilities Delivered
<b>Rigid analytics</b> – inability to drill down into granular data quickly	<b>"On-the fly" analysis</b> – fast, on-demand drill-down capabilities from aggregated views to individual records
<b>Poor performance at scale</b> – slow query performance for large datasets	<b>True "big-data" capabilities</b> – high-performance data processing and querying for billions of records
<b>Limited self-service</b> – business users had few choices for quick answers to data questions	<b>Faster insights</b> – user-friendly, self-service analytics platform integrated with powerful data processing
<b>Data sprawl across disparate sources</b> – timely and expensive to wrangle data	<b>Single platform</b> – to access data, allowing the team to generate novel insights

**19% improvement**  
in EOS score



# Firmwide Financial Analysis | Bringing data closer to end users



*"Databricks provides an open solution that integrates well into our ecosystem while offering robust APIs...This has dramatically improved our ability to democratize data and provide optionality for users to consume and analyze information."*

Business Problem	Firmwide Financial Analysis function was looking to <b>enhance and streamline the way actionable data was delivered to c-suite executives and Finance practitioners</b> due to federated nature of their data landscape. With responsibility for financial reporting and analysis across the bank, they needed centralized, self-service data sourcing through an array of consumption patterns, optimized for the financial analysis functions.
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Challenges	Capabilities Delivered
<b>"Data destruction"</b> – Fine-grain data gets distilled through multiple aggregations and transformations → challenges around lineage and transparency	<b>Self-service analytics</b> – enabling business users to confidently create insights (and drill down to atomic level of data) → lowering the cost of curiosity
<b>Federated data systems</b> – limited data access due to separation of data lake and data warehouse → several copies of data	<b>Unified data platform</b> – integrating various data sources into a single environment (best of data lake and warehouse), bringing data closer to end-users
<b>Traditional silo between business and technology team</b> – heavy reliance on tech team's capacity to meet business data needs	<b>Enabling the business with self service</b> – ability to bring data products online faster and drive better insights

**1 authoritative copy of data**  
and limited data movement

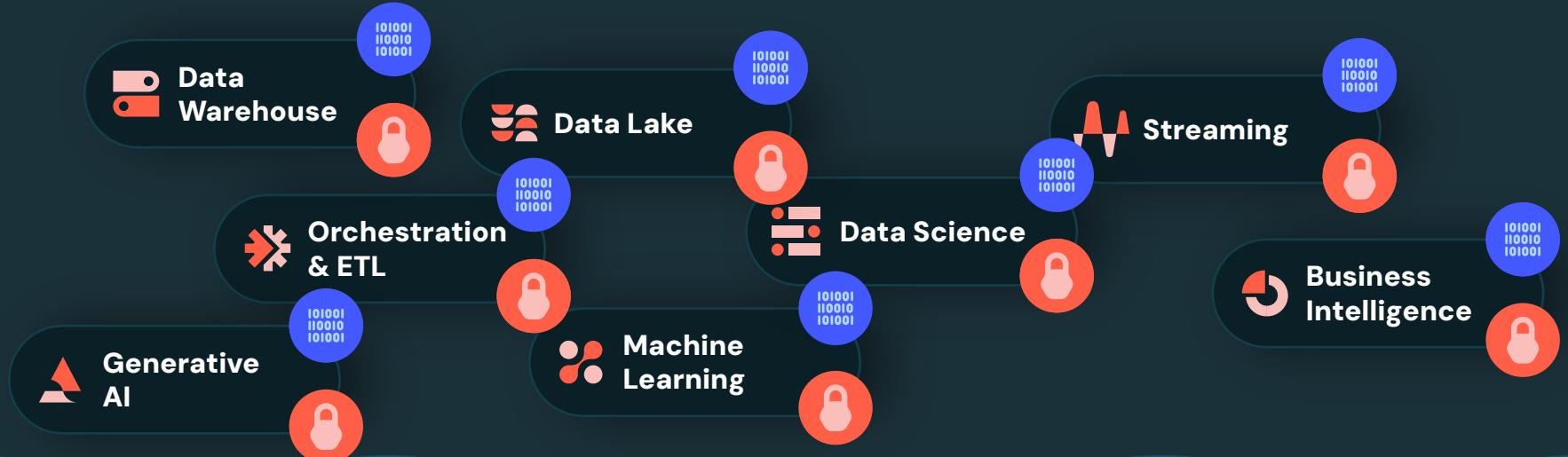
**Identified ~72k hours / year**  
of effort reduction (in a single headcount reporting use case)

**42 forecasting models**  
executing on Databricks  
(where the data live)



# Appendix B: What is Databricks

# The data + AI estate is fragmented



It's a complexity nightmare of  
high costs and proprietary lock-in

# The data + AI estate is fragmented

 Data Warehouse

 Data Lake

 Streaming

 Orchestration & ETL

 Data Science

 Business Intelligence

 Generative AI

 Machine Learning



Unified Governance



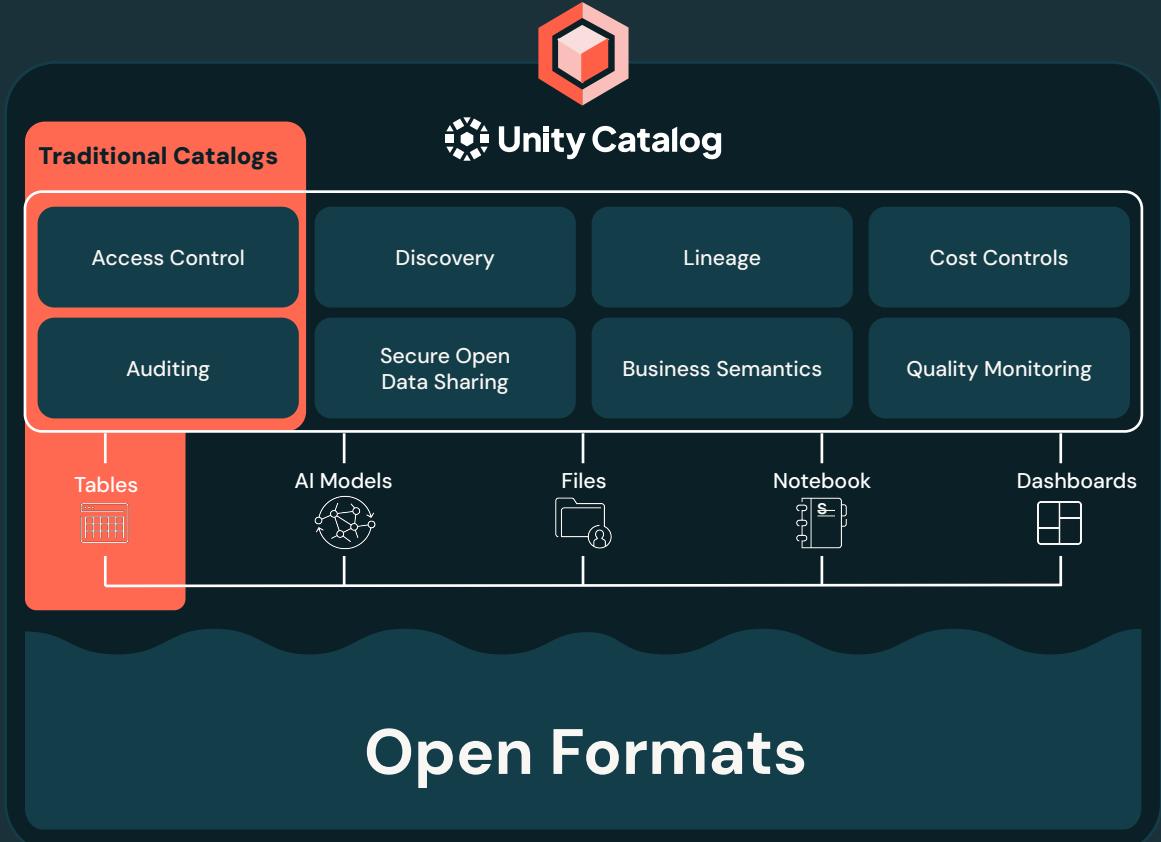
Open Formats



# Unified governance

Unified **capabilities**  
for every use case

Unified governance  
for **all assets**





**Mosaic AI**

Artificial intelligence



**DB SQL**

Data warehousing



**Lakebase**

Transactional database



**AI/BI**

Business intelligence



**Lakeflow**

Ingest, ETL, streaming



**Apps**

Secure data & AI apps



**Marketplace**

Data & AI marketplace



# Lakehous



**DELTA LAKE**



**ICEBERG**



# Your stack, your choice

Adopt a complete solution or integrate with the tools you use today

