



## Summary

### CUSTOMER

Harris Associates

### CHALLENGE

Create and maintain an enterprise-wide single source of truth from multiple internal and external sources to service consumers with a consistent set of data and analytics.

### OUTCOME

InterSystems Data Fabric Studio, powered by an innovative smart data fabric architecture, is delivering the information and insights the company needs to improve portfolio returns, boost client engagement, reduce risk, and improve operational efficiencies.

## Harris Associates + InterSystems

### Improving Business Performance with InterSystems Data Fabric Studio

Harris Associates is an independent asset management firm that manages more than \$99 billion\* in equity and fixed income portfolios for corporations and institutions, nonprofits, and others. It also owns and operates Oakmark Funds, and is owned by Natixis Investment Management, LLC, which has more than \$1 trillion\* in total assets under management. As a value investor, Harris Associates is always looking for ways to manage risk, lower costs, and understand the intrinsic value of its investment assets. Central to meeting those goals is being able to access and use timely, consistent, and relevant data to serve multiple consumers and use cases.

The Chief Technology Officer at Harris Associates, says, “[We] deal with a lot of data – millions of records. And every second matters. The data that is relevant now will not be relevant in five minutes.”

Over the years, Harris Associates had explored various approaches and technologies to better leverage all the disparate data they need to run the business, including manual methods, spreadsheets, data lakes, data warehouses, and data marts. According to the firm, all of these approaches came with significant limitations, including data duplication, batch processing complexity and delays, inflexible architectures, inability for business users to explore the data on their own, and constant maintenance requirements. Harris Associates was seeking a better solution based on a modern approach that could dynamically access and use data from any source and plug into any application or analytics engine, eliminating the limitations of previous approaches.

**“I’VE BEEN  
WORKING WITH  
DATA FOR 25 YEARS.  
WE’VE BEEN  
THROUGH A  
FEW SOLUTIONS.  
WE’VE FINALLY  
FOUND SOMETHING  
WHICH WORKS.”**

*CTO, Harris Associates*

According to the firm’s CTO, after a comprehensive review of various alternatives, the firm selected InterSystems® Data Fabric Studio™ because it met their requirements for the smart data fabric architecture they determined was the answer to their challenges. “We use data to maintain our competitive advantage,” says the CTO. “Getting the data five minutes early could make a difference.”

The CTO has 25 years of financial services asset management experience, and says the smart data fabric architecture offers a solution to a persistent problem that has plagued the asset management industry for decades.

*Asset management firms require one single source of trusted information that enables more effective and timely decision-making, leveraging far more types of data, from more sources, and in higher volumes than ever.*

To do this they must extract insights from third-party data service providers and a range of internal and external applications and sources. Until now, this has proved extremely difficult for asset managers.

Harris Associates’ implementation of the smart data fabric and InterSystems Data Fabric Studio amounts to a breakthrough. The smart data fabric meets the company’s stringent requirements for timeliness and consistency, serving the entire business and its clients, while complementing all of the existing operational systems and data management technologies in place. According to the CTO, a key attribute of the InterSystems solution is that it does not necessitate wholesale implementation of new systems.

Key benefits to the firm are improved client engagement and retention, reduced risk, the ability for business users to make better and more timely business decisions, increased operational efficiencies, and lower costs. The CTO estimates that Harris Associates is saving millions of dollars annually and he is happy with the outcome. “I’ve been working with data for 25 years. We’ve been through a few solutions. We’ve finally found something which works,” he says.

## **Smart Data Fabric Architecture Powers Multiple Use Cases**

A benefit of InterSystems Data Fabric Studio is that it creates a live, dynamic data layer – a smart data fabric – that can be used to power a wide range of value-added use cases.

### **Enterprise Reporting**

One use case at Harris Associates is for enterprise and client reporting using an overarching enterprise data and metadata layer that provides harmonized data for on-demand reporting and dynamic dashboards that allow business users to drill into the data to explore the information without reliance on IT for support.

*“We wanted to pipe everything through InterSystems,” says the CTO. “Then we’re using that as a middle data platform with consistent enterprise-wide metadata and semantic layers, feeding all of our reporting and other tools.”*

Data flowing through the smart data fabric includes performance and attribution data from internal systems; client data from Salesforce; investment accounting data from a third-party service; subscription and redemption data from transfer agencies; market data from multiple sources including Bloomberg, Factset, and others; and data from internal databases including Oracle, SQL Server, and Sybase. The application feeds business reporting and business intelligence tools and other applications to fulfill investment management requirements and provide data access to the front office, operations teams, and the trade analytics team for portfolio optimization, as well as for modeling and analytics work. It also services client reporting from the same, consistent data fabric.

### Trade Cost Analysis

With the enterprise reporting use case in production, the firm is now extending the implementation to address additional use cases, including trade cost analysis (TCA) to gain the best trade execution for each trade.

Over the years, the firm has collected a massive store of historical order-and-fill data for every trade it routed to brokers. To perform trade cost analysis, it has to compare the historical trade execution data with all similar trade data from across the entire market during the same time periods. Such a comparison quantifies how well its brokers performed compared with all others for similar trades.

The firm is aggregating all of the required data and using the embedded analytics capabilities in the product to build and train machine learning models to predict which broker to route each trade to for the best execution. It will then operationalize these models, embedding them into its algorithmic trading processes to automatically route orders to the best brokers in real time. The models will be constantly recalibrated based on the ongoing trade performance data.

One advantage with InterSystems Data Fabric Studio, according to the CTO, is that they don’t need to persist the terabytes of streaming market data that are needed to build and tune the machine learning models, since the product supports both collect and connect integration methods.

*The CTO expects the trade cost analysis application to save the firm millions of dollars every year once it’s in production.*

Harris Associates plans to leverage the harmonized enterprise data and the functionality in the InterSystems-based application to implement additional use cases, including real-time Investment Book of Records (IBOR) reporting and other use cases.

**“WE DEAL WITH  
A LOT OF DATA  
– MILLIONS OF  
RECORDS. AND  
EVERY SECOND  
MATTERS. THE DATA  
THAT IS RELEVANT  
NOW WILL NOT  
BE RELEVANT IN  
FIVE MINUTES”**

*CTO, Harris Associates*

## Conclusion

Harris Associates evaluated alternative options from many vendors before choosing InterSystems, and is pleased with its choice, gaining much greater performance and flexibility than is possible with packaged data management solutions, data warehouses, or data lakes. According to the CTO, vendor-specific packaged data management solutions are built to perform specific operational processes, not to manage a wide variety of data from different sources in a flexible way. Data warehouses and data marts rely on brittle ETL processes and pre-built inflexible schema that are difficult to modify and extend. They are not built to manage all of the enterprise data needed to run the business. And data lakes do not create the consistent representation of data and metadata the business requires.

Having implemented InterSystems Data Fabric Studio, Harris Associates now plans to develop a data ecosystem that is comprehensive, cost-effective, and that serves multiple use cases for its various departments. This will prevent the firm from having to buy and integrate multiple disparate products and technologies to serve different users and use cases.

*“Our experience has been very positive with InterSystems, and with the entire process,” the CTO says.*

According to the CTO, Harris Associates has finally found an approach to data that will help transform performance across the entire asset management industry.