Aerospike's NoSQL Data Platform Increases Revenue **Retention and Improves Customer Experience For Financial Services Organizations**

In this modern time of digital transformation, financial services organizations are required to adjust to the challenges they are facing regarding increased competition, greater scrutiny, and more stringent regulations, while maintaining their core systems and finding new avenues for growth. However, traditional data platforms are failing to meet new business requirements that demand a no-compromise combination of real-time data, performance, scale, integrated data, and security.

Today, typically three platforms service the needs for workloads: transactional, operational, and analytical systems. Data movement, from transactional systems, to operational systems, and finally to analytical systems, slows down processing, integration, and timely insights. Disparate technology stacks compromise the delivery of timely, integrated data to various applications, operational systems, and analytics.¹ Blazing fast performance for both transactional and analytical workloads is the goal of the emerging data platform category that Forrester coins as *translytical*. Typically powered by in-memory technology and a scale-out architecture, this class of platform is designed to support transactions, operational insights, and analytics without sacrificing transactional integrity, performance, scale, and analytical capability.²

"When I think about the benefits of Aerospike, there's the less expense in getting data out of a SQL database. And, two, you're getting it out faster. And, three, you're getting it out more reliably without impacting customers with timeouts, like we did before."

VP, technology, financial services

Aerospike NoSQL Data Platform By The Numbers:



Business impact from transactional deployments: Improvements to fraud detection leads to an increase in revenue retention ranging from:

55% to 81%

Business impact from operational deployments: A reduction in system downtime leads to cost avoidance ranging from:

50% to 100%

TCO cost savings include reduced server costs, ranging from:

55% to 75%

Financial services organizations require translytical platform that enables lightning-fast decisions through agile processing of information at massive scale, while ensuring system availability and uptime as well as business execution.

Aerospike's high-performance NoSQL Data Platform delivers robustness and strong consistency at scale for organizations with business requirements that require support for critical systems involved high data volumes, rapid read/write rates, and critical systems with their 'Hybrid Memory Architecture' and flashoptimized storage capabilities. As a result, organizations benefit from cost savings from reduced architectural complexity as well as better business performance.

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed four enterprise customers with years of experience using Aerospike's NoSQL Data Platform for various applications to conduct a Total Economic Impact[™] (TEI) study. While the complete TEI study assesses the impact of the platform across both new tech and financial services industries, this abstract will focus on the use of Aerospike's NoSQL data platform in the following use cases of the financial services industry:

- Intraday trade processing. Today's banks need to offer better customer service and experiences, improve efficiency and productivity, and innovate on banking products and services.³ According to Forrester research, both business and technology leaders are aware that their overaged banking platforms, which are often to a severe degree, do not provide a great foundation. Close to 80% of retail banks state that their firm does not have the right technology infrastructure and banking applications in place to deliver great, differentiating experiences that meet the needs of their customers.⁴ Translytical databases, such as the Aerospike platform, help reduce the complexity of core technology infrastructure while handling large volumes of operational data without impacting system performance. In this case, the Aerospike Platform serves as a system of record for historical trade data while enabling organizations to offload the mainframe system for intraday trade calculations as well. This ultimately reduces system downtime and improves performance.
- Fraud assessment on payment transactions. Payment providers balance themselves on a fine line between delivering frictionless customer experiences and fraud avoidance.⁵ The biggest barrier to meeting both needs is a lack of realtime data integration, so that fraud decisions can be made based on clean data.⁶ Customers expect for their transactions to be completed in milliseconds. If large volumes of transactions are

slowing down processing times, organizations often leave them out of fraud detection analysis altogether, increasing the risk of fraud and the associated penalties. Translytical data platforms, such as Aerospike, make it easier to infuse applications, like those for fraud detection and management, with real-time analytics.⁷ In this case, the Aerospike Platform allows large volumes of payment transactions to process through fraud detection applications in real time without impacting performance or scale.

KEY INVESTMENT DRIVERS

- High expenses. Interviewed organizations had high expectations of their legacy systems, in terms of latency, throughput, and resiliency. However, there were very high costs associated with achieving the required memory and power (electricity, etc.) of their business use cases with these systems. Additionally, many resources were required to run and manage legacy systems due to the lack of available monitoring and automation tools that would make development resources more productive. Previous solutions also did not have consistent and reliable uptime and availability when dealing with complex, translytical use cases. And as such, the interviewed organizations often experienced downtime with their legacy platforms. This would cause additional work for development teams, and ultimately derail them from their daily workflows. Organizations sought to achieve high performance for the business while simplifying their technical architectures to save on infrastructure costs and ensure high efficiencies for development resources.
- Limited ability to scale. The business use cases which were running on legacy systems, i.e., fraud management and intraday trade processing, required those systems to handle large volumes of data and maintain fast and reliable response times. Each interviewed organization wished to add more data to existing

workloads or scale horizontally to include more highly transactional, analytical, or operational use cases all while maintaining or improving system performance. The cost and resource restrictions of the legacy systems became a barrier to scaling both data volumes and use cases.

Restrictive performance. Ultimately, limitations from legacy systems and their inability to effectively handle the targeted business use cases impacted business performance. The resulting performance effects could mean millions of dollars of loss for the organization, given the large scale and critical nature of business use cases such as fraud detection and trade processing. These examples represent the transactional and operational workloads indicated by the interviewed financial services organizations where large data sets need to be processed quickly and reliably. Any performance failures resulted not only in negative revenue impact from trade errors or inaccurate fraud detection, but also in reputational damage and customer dissatisfaction.

AEROSPIKE'S PLATFORM FEATURES

The following aspects of the Aerospike NoSQL platform prove valuable to financial services organizations:

- Scaling with low latency. When working with high and fluctuating volumes of data, the Aerospike Platform is designed to prevent real-time processing delays and unplanned downtime that could result in fraudulent transactions, risk exposure, or data loss.
- Predictable performance against large transaction volumes. The Aerospike Platform can scale vertically as well as horizontally across servers and data centers, providing consistent performance when faced with spikes in financial transactions.

"With Aerospike, we have added multiple use cases to the platform and grew to 600TB to 800TB of data, to ultimately expand the business while maintaining the scale of our technology organization."

VP, technology, financial services

- High resilience. The Aerospike Platform stores data in its distributed architecture framework to ensure no single point of failure, protecting financial services organizations from unplanned downtime and ensuring consistent availability and uptime.
- Optimized data storage. With Aerospike's flashoptimized storage capability, organizations reduce storage footprints and save on associated infrastructure costs without sacrificing performance.

READ THE FULL STUDY HERE

FINANCIAL MODEL CONSIDERATIONS

There are two aspects that make the TEI analysis of Aerospike's NoSQL Data Platform unique:

- 1) The interviewed organizations implemented workloads on the Aerospike platform that were either transactional, analytical, or operational in nature. These workloads supported an even wider set of business needs that drove value in different ways.
- Interviewed organizations have chosen to scale their investments in Aerospike depending on where and how their business needs changed over the course of the investment and how they continue to evolve.

To account for the variable business needs and ways in which they can derive value, Forrester calculated specific use case deployments and generalized the set of business benefits at the workload category-level. At a high level, the benefit modules can be categorized as either total cost of ownership (TCO) benefits (blue) or business benefits (green).



While TCO savings benefits apply to all interviewed organizations, the business impact benefits — which are built utilizing specific examples provided by interviewed organizations — are modeled according to an organization-specific use case and the benefit impact that organization has seen. Interviewed financial services organizations highlighted transactional and operational deployment benefits as the business impacts experienced, and as such, those business impact benefits are explained in this document. To read the complete study, click the link above.

KEY RESULTS FOR FINANCIAL SERVICES ORGANIZATIONS

As shown in the financial model considerations, two categories of benefits have been included in this study: TCO savings and business benefits. Leveraging the features of the Aerospike NoSQL Platform has delivered several of these benefits to financial services organizations, including:

BENEFIT

Reduced server footprint by 55% to 75% on average each year.

DESCRIPTION

Prior to using Aerospike NoSQL Data Platform, additional servers were continually added to legacy architectures to achieve output expectations. With the Aerospike Platform, organizations realized a reduction in their overall server footprint without sacrificing performance.

FINANCIAL SERVICES NARRATIVE

A Senior Engineering Manager at a Financial Services organization explained that in their legacy environment, they utilized 600 servers for 14TB of data across multiple data centers. With Aerospike, they consolidated their 600 servers down to 60 for the same amount of data. As they scaled their investment with Aerospike, they further compounded their cost savings, ultimately landing at 1/20th of the cost of their legacy servers due to the memory solution that Aerospike offered. Improved developer efficiencies by redeploying .5 FTE to 1.5 FTE, annually, to more value-add work.

Legacy environments required a lot of care and feeding to maintain and often went down unexpectedly. Organizations found Aerospike incredibly developer friendly and were able to reduce the amount of work required to maintain and scale the infrastructure. Additionally, Aerospike's improved system availability meant less problem-solving work for developers. A Financial Services organization said that they doubled their initial investment with Aerospike without adding a single developer resource, making their existing resources more efficient. With their legacy infrastructure, they would have had to double their "people footprint" in parallel with server growth.

Revenue retention ranging from 55% to 81% with transactional deployments.

Transactional deployments supported business uses, such as fraud detection on payment transactions. In such cases, Aerospike's improved performance in fraud detection recovered revenue for the business. Before Aerospike, a Financial Services organization's key value system could process only 98.5% of total transactions, due to delayed response times. A completed transaction that has not gone through fraud detection could have resulted in a false positive or a false negative. In either case, the organization's bottom line is impacted, as is their reputation with their customer base.

With Aerospike, the organization was able to improve their throughput to process 99.99999% of transactions; "And, on a good day, they can get up to 6 of those 9's."

Cost avoidance from reduced system downtime ranges from 50% to 100% with operational deployments.

Operational deployments supported business uses, such as intraday trade processing and running account balances. In such cases, Aerospike's improved availability limited system downtimes that previously impacted trade accuracy and account access for customers. Reduction in system downtime lead to more accurate trade processing and better response times that improved customer experiences. For an interviewed financial services organization, using Aerospike as a system of record for day-to-day operational data as well as long-term trade and consumer data ensured that customers could access real time balances as well as transaction history.

UNQUANTIFIED BENEFITS

In addition to the benefits outlined above, there were a few additional benefits which were not able to be quantified, they are as follows:

Better customer experiences. The fewer system downtimes and faster response times experienced through the Aerospike investment has helped organizations to meet intense customer expectations around system availability, accuracy, and speed. **Peace of mind.** Aerospike proved themselves through improved system performance with fewer issues that earned the moniker *'the forgotten system'*. Additionally, hands-on support guided organizations with best practices and expertise through their journeys away from unreliable legacy systems to a world where the underlying data platform was not a barrier to scale, but rather an enabler of success.

TOTAL ECONOMIC IMPACT ANALYSIS

For more information, download the full report <u>"New Technology: The Projected Total Economic Impact™ of the Aerospike</u> <u>NoSQL Data Platform,</u>" commissioned by Aerospike and delivered by Forrester Consulting.

STUDY FINDINGS

Forrester interviewed four organizations across both new tech and financial services industries with years of experience using Aerospike's NoSQL Data Platform and combined the results into a three-year composite organization financial analysis. Risk-adjusted, present value (PV) quantified benefits include:

- Reduced server footprint by 65%, on average.
- Improved developer efficiencies by redeploying one FTE, on average, to more value-add work.
- An average of \$25M in business value from transactional deployments.
- An average of \$655K in business value from operational deployments.
- An average of \$47.6M in business value from analytical deployments.



Appendix A: Endnotes

- ¹ Source: "The Forrester Wave™: Translytical Data Platforms, Q4 2019," Forrester Research, Inc., October 23, 2019.
- ² Source: March 10, 2020, "Translytical Data Platforms: Delivering Analytics At The Speed Of Transactions," Webinar
- (https://www.forrester.com/webinar/Translytical+Data+Platforms+Delivering+Analytics+At+The+Speed+Of+Transactions/-/E-
- WEB30345?objectid=WEB30345).
- ³ Source: "The Forrester Wave: Digital Banking Processing Platforms (Retail Banking), Q3 2020," Forrester Research, Inc., September 3, 2020.
 ⁴ Source: Ibid.
- ⁵ Source: "Best Practices For eCommerce And Retail Fraud Management," Forrester Research, Inc., July 22, 2020.
- 6 Source: Ibid.
- ⁷ Source: "Now Tech: Translytical Data Platforms, Q3 2019," Forrester Research, Inc., August 16, 2019.

DISCLOSURES

The reader should be aware of the following:

- The study is commissioned by Aerospike and delivered by Forrester Consulting. It is not meant to be a competitive analysis.
- Forrester makes no assumptions as to the potential ROI that other organizations will receive. Forrester strongly advises that readers use their own estimates within the framework provided in the report to determine the appropriateness of an investment in the Aerospike Data Platform.
- Aerospike reviewed and provided feedback to Forrester. Forrester maintains editorial control over the study and its findings and does not accept changes to the study that contradict Forrester's findings or obscure the meaning.
- Aerospike provided the customer names for the interviews but did not participate in the interviews.

ABOUT TEI

New Technology: Projected Total Economic Impact[™] (New Tech TEI) is a methodology developed by Forrester Research that enhances a company's technology decision-making processes and assists vendors in communicating the value proposition of their products and services to clients. The New Tech TEI methodology helps companies demonstrate, justify, and realize the tangible value of IT initiatives to both senior management and other key business stakeholders. The New Tech TEI methodology consists of four components to evaluate investment value: projected benefits, projected costs, risks, and flexibility.

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