

Emerging Technology: The Projected Total Economic Impact™ of the Aerospike NoSQL Data Platform

**Executive Summary of the Forrester Consulting Study
commissioned by Aerospike**

Forrester Consulting Study:

www.aerospike.com/forrester-total-economic-impact

Executive Summary

Forrester Research states that traditional data platforms are failing to meet new business requirements that demand a no-compromises combination of real-time data, performance, scale, integrated data, and security. Today, typically three platforms service the needs for workloads: namely transactional, operational, and analytical systems. The movement of data from transactional, to operational, and to finally analytical systems slows down processing, integration, and the generation of timely insights. Disparate technology stacks compromise the delivery of timely, integrated data to various applications, operational systems, and analytics.ⁱ Blazing-fast performance for both transactions and analytics workloads is the goal of the emerging data platform category that Forrester calls *translytical*. 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.ⁱⁱ

Aerospike's NoSQL Data Platform delivered consistent performance at scale for organizations with business requirements that involved high data volumes, rapid read/write rates, and critical systems with their hybrid memory architecture and flash-optimized storage capabilities. Aerospike commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential return on investment (PROI) enterprises may realize by rolling out Aerospike NoSQL Data Platform per application. The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of the Aerospike NoSQL Data Platform on their organizations, which will vary depending on the size, scale, and scope of applications they support with the Aerospike Platform.

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed four enterprise customers across both technology and financial services industries with years of experience using the Aerospike NoSQL Data Platform.

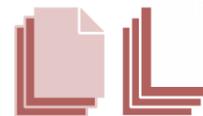
Prior to leveraging the Aerospike NoSQL Data Platform, IT organizations at the interviewed companies struggled to get the necessary performance metrics out of legacy systems supporting their analytical, transactional, and operational workloads. Technology teams were constantly adding servers and resources to their legacy architectures to stabilize performance. Meanwhile, the high cost of ownership for ill-equipped legacy systems restricted organizations' abilities to scale their investment to meet evolving, modern business requirements.

Organizations initially used the Aerospike NoSQL Data Platform to: 1) support the cache of use cases across existing transactional, analytical, and operational workloads and 2) reduce total cost of ownership (TCO) costs associated with legacy infrastructure and additional resources. As Aerospike freed up budget and resources without impacting performance, organizations scaled data volumes used in existing use cases and expanded to include additional use cases to further augment legacy data stores and address performance and scale demands.

Total Three-Year Projected Benefits Based On Composite Organization



TCO savings with Aerospike NoSQL Data Platform:
\$2.6M to \$3.9M



Business benefit from operational deployments:
\$473.1K to \$780.4K



Business benefit from transactional deployments:
\$20.5M to \$30.2M



Business benefit from analytical deployments:
\$45M to \$49.8M

Key Findings

Quantified projected benefits. The following present value (PV) quantified benefits are representative of those experienced by the companies interviewed:

- › **Reduced server footprint by 55% to 75% on average each year.** Prior to using Aerospike NoSQL Data Platform, additional servers were continually added to legacy architectures to achieve performance expectations. With Aerospike, the overall number of required servers is reduced by 50% to 70% in Year 1 alone. By Year 3, server reductions increased by 60% to 80% as more existing workloads were powered by Aerospike. The associated cost savings ranged from \$2.4M to 3.3M over the three-year investment.
- › **Improved developer efficiencies by redeploying .5 to 1.5 FTEs, annually to more value-add work.** Legacy environments required a lot of care and feeding to maintain, and they often went down unexpectedly. With Aerospike, developer resources have automation and monitoring tools at their disposal that reduced the amount of work required to maintain and scale the infrastructure. Additionally, Aerospike's improved system availability meant less problem-solving work for developers. In total, the redeployed developer resources cost savings ranged from \$186.5K to \$559.5K over the three-year investment.
- › **Total business value from a transactional deployment ranged from \$20.5M to \$30.2M.** 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. The total averaged business impact from transactional deployments, as expressed through improvements to fraud detection, ranged from \$20.5M to \$30.2M for the three-year investment.
- › **Total business value from an operational deployment ranged from \$473.1K to \$780.4K.** 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 led to more accurate trade processing and better response times that improved customer experiences. The total averaged business impact from operational deployments, as expressed through the reduction in system downtime, ranged from \$473.1K to \$780.4K for the three-year investment.
- › **Total business value from an analytical deployment ranged from \$45M to 49.8M.** Analytical deployments supported business uses, such as personalized ad and recommendation engine decisioning. In such cases, Aerospike's improved data throughput, made those decisions more accurate and, therefore, contributed to improved conversion rates. Improved conversion rates contributed to profit growth. The total averaged business impact from analytical deployments, as expressed through improved conversion rates, ranged from \$45M to \$49.8M for the three-year investment.

Key Outcomes (Three-Year)



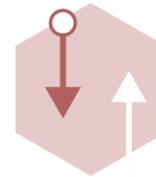
PROI
446% to 574%



Projected benefits PV
\$68.6 million to \$84.7 million



Projected NPV
\$56.1 million to \$72.1 million



Total costs
\$12.6 million

Unquantified benefits. The interviewed organizations experienced the following benefits, which are not quantified for this study:

- › **Better customer experiences.** A main driver of the Aerospike investment was to support customer-centric business needs, such as intraday trade, payment transaction processing, and to power customer experience solutions. Therefore, better performance would not only fuel profit growth, but it would also improve customer experiences. Fewer system downtimes and faster response times experienced with Aerospike helped meet intense customer expectations around system availability, accuracy, and speed.
- › **Peace of mind.** The story of scale told through the Aerospike investment would not be possible without their proven performance that facilitated development and growth by mitigating issues and improving availability to earn the *forgotten system* moniker. Additionally, Aerospike support lent expertise and built trust along the way.

Costs. The interviewed organizations experienced the following risk-adjusted PV costs:

- › **Costs associated with the Aerospike investment.** Costs associated with the Aerospike investment included fees to Aerospike for annual licensing and ongoing support and training seats. Additionally, one-time fees to Aerospike Professional Services during implementation facilitated the data migration effort. There are also fees associated with Aerospike servers that scale with the investment in the platform. Resources are required for implementation and ongoing support of the investment on the customer end as well, resulting in cost for time spent.

Forrester modeled a range of projected low-, medium-, and high-impact outcomes based on evaluated risk. This financial analysis projects that the composite organization accrues the following three-year net present value (NPV) for each scenario by enabling Aerospike NoSQL Data Platform:

- › Projected high impact of a \$72.1 million NPV and projected ROI of 574%.
- › Projected medium impact of a \$64.4 million NPV and projected ROI of 513%.
- › Projected low impact of a \$56.1 million NPV and projected ROI of 446%.

“With Aerospike, the development time is very fast. NoSQL is very developer-friendly. So, we are dealing with hundreds of terabytes of data with just a couple of people managing everything and that they are part-time, they are not even full-time. Developers have more flexibility in that they can store their objects the way they want as it is, as long as the performance is not getting impacted.”

Technical director, financial services

“The Aerospike platform is easy to scale. As soon as we reach either memory, or disk, or processing power, we can easily add more nodes. Adding those new nodes does not cause any disruption in service in Aerospike. The cross-data center replication is very positive as far as groups wanting their data in all the different data centers without them having to do the development work of that.”

Senior manager, e-commerce

“Our biggest benefit has been the extreme performance as far as what Aerospike can actually do, compared to any other database or cache system. Also, of course, high availability, so we don't have to worry about nodes going down or a zone in the data center going down. You still have 100% of the data available. It's easy to scale in that as we reach memory, or disk, or processing power, we can easily add more nodes

Senior manager, e-commerce

“With Aerospike, we have better performance with a smaller server footprint.”

Head of engineering, software and tech services

“The great things about Aerospike was their reputation and their support. It's definitely been true in our case as far as the support that we get from them is phenomenal — they are very knowledgeable and extremely fast on all hours of the day.”

Senior manager, e-commerce

“Aerospike becomes the forgotten system because it has no issues of any kind. The biggest benefit I got was the operational stability I was getting out of the system in that I didn't have any headaches. With our old system, I had a full team managing it and, literally, every week, there was something to fix.”

Head of engineering, software and tech services

Key Results

The interviews revealed that key results from the Aerospike NoSQL Data Platform investment include:

- › **Optimized data storage and capacity to better fit use cases.** With the Aerospike NoSQL database, organizations were able to reduce storage footprints and save on associated infrastructure costs without sacrificing performance through Aerospike's flash-optimized storage capability. Additionally, the Aerospike database was easier to manage, as resources were equipped with automation tools that mitigate development efforts previously required to add clusters and replicate data across data centers. Resources also benefited from more reliable system availability with Aerospike. Less downtime and fewer issues coupled with monitoring dashboards and tools, relieved resources from the burden of unexpected work. The interviewed organizations found that the Aerospike database better fit their business applications and saved on costs associated with infrastructure and resource time spent maintaining, monitoring, and developing them.
- › **Better performance allows for a scaled technology investment.** With Aerospike, the interviewed organizations experienced better performance despite cutting costs associated with infrastructure and resources. The mitigated development efforts and fewer system restrictions to throughput and performance, allowed the organizations to grow their investment in Aerospike. Organizations, therefore, added more data to existing use cases and expanded to new use cases that fit the complex translytical characteristics.
- › **Business growth and improved customer experiences.** Interviewed organizations grew their investment in the Aerospike database without disruption to the business, and they managed to simultaneously improve performance metrics. Less system downtime and better performance impacted business value experienced through the investment in the appointed application areas. For example, applying more data to decision-making — for customer experience and recommendation engine use cases — allowed the organization to improve conversion rates. Additionally, as the applied use cases were all business-focused and customer-facing, the organization improved customer experiences through better, more reliable system performance as well.

“Aerospike becomes the forgotten system because it has no issues of any kind. The biggest benefit I got was the operational stability I was getting out of the system in that I didn't have any headaches. With our old system, I had a full team managing it and, literally, every week, there was something to fix.”

Head of engineering, software and tech services

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About Aerospike

Aerospike is the global leader in next-generation, real-time NoSQL data solutions for any scale. Aerospike enterprises overcome seemingly impossible data bottlenecks to compete and win with a fraction of the infrastructure complexity and cost of legacy NoSQL databases. Aerospike's patented Hybrid Memory Architecture™ delivers an unbreakable competitive advantage by unlocking the full potential of modern hardware, delivering previously unimaginable value from vast amounts of data at the edge, to the core and in the cloud. Aerospike empowers customers to instantly fight fraud; dramatically increase shopping cart size; deploy global digital payment networks; and deliver instant, one-to-one personalization for millions of customers. Aerospike customers include Airtel, Banca d'Italia, Experian, Nielsen, PayPal, Snap, Verizon Media and Wayfair. The company is headquartered in Mountain View, Calif., with additional locations in London; Bengaluru, India; and Tel Aviv, Israel.

ⁱ Source: "The Forrester Wave™: Translytical Data Platforms, Q4 2019," Forrester Research, Inc., October 23, 2019.

ⁱⁱ Source: March 10, 2020, "Translytical Data Platforms: Delivering Analytics At The Speed Of Transactions,"

(<https://www.forrester.com/webinar/Translytical+Data+Platforms+Delivering+Analytics+At+The+Speed+Of+Transactions/-/E-WEB30345?objectid=WEB30345>).