

Aerospike's NoSQL Data Platform Improves Conversion Rates and Customer Experience for New Tech Organizations

According to Forrester Research, customer analytics is the engine of a customer-centric, insights-driven business¹. And as the pace of business accelerates and real-time insights become a critical component to growth, enterprises must turn to platforms that can deliver analytics in real-time to support modern customer experience initiatives. New tech organizations need an optimized and comprehensive end-to-end data management solution that can automate the process of ingestion, storage, integration, security, curation, and transformation for new and emerging business use cases, such as consumer personalization, customer 360, and recommendation engines². However, traditional data platforms are failing to meet these new business requirements that demand a no-compromises combination of real-time analytics, 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 analytics³. 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 capability⁴.

Aerospike NoSQL Data Platform by the numbers:



Business impact from analytical deployments: More accurate personalization and recommendations leads to an improvement in conversion rate ranging from:

0.70% to 1.55%



TCO cost savings include reduced server cost ranging from:

55% to 75%

New tech organizations need a 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.

"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

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 flash-optimized 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 the new tech and financial services industries, this abstract will focus on the use of Aerospike's NoSQL data platform in the new tech industry, encompassing e-commerce/retail, cybersecurity, adtech/martech, social platforms, and online gaming and gambling, among others. Specifically, this abstract will expound on the business value Aerospike brings to new tech organizations in the following use cases:

- **Recommendation engine & Customer 360:** Turning raw data into actionable insights is increasingly critical to firms' ability to win, serve, and retain customers. Organizations trying to become customer obsessed must make a significant shift — from being data driven to becoming insights driven. Data-driven organizations get signals from their data, but insights-driven organizations turn those signals into actions (actionable insights) and bake insights into software to drive tangible business outcomes, at scale⁵. The growing volume and complexity of data, compliance requirements, and the need for customer 360 and real-time insights that power recommendation engines and the like, are motivating enterprises to get more control over their data management strategy.

Enterprises need to modernize their data management strategy to support changing business requirements and ensure that they always use trusted and secure data for critical business initiatives, especially those that are customer facing. Data management is more than data integration, data quality, or data warehouses. It comprises several components that ensure the trustworthiness of enterprise data as well as its availability, preparation, storage, security, access, and transformation. A data management strategy is critical to support the next generation of insights, real-time analytics, customer intelligence, and other emerging use cases⁶. For the **recommendation** use case, the Aerospike NoSQL Data Platform serves as a fast and flexible Flash optimized data storage system with an ability to support multiple requests per recommendation and easily scale over time as throughput increases. The storage of large volumes of data and increased throughput of that data against decision making criteria, allows organizations to further strengthen recommendations that promote customer engagement, and drive actions such as higher conversions. All while maintaining lower costs and improved system downtime and performance. For the **Customer 360** use case, organizations are using the Aerospike Platform as a backbone for profile data storage replication and distribution to help deliver the best, most personalized experience to their consumers. The Platform serves as one single system with reliable performance and replication ability across edge applications to promote a 360-degree view of the customer that allows organizations to better meet customer needs and improves customer experiences.

KEY INVESTMENT DRIVERS

- **High expenses.** Interviewed organizations had high expectations of their legacy systems in terms of latency, throughput, and resiliency. There were very high costs associated with achieving the required memory and storage of their business use cases with existing infrastructure. Additionally, many resources were required to run and manage legacy systems due to lack of available monitoring and automation tools that would make development resources more productive. Despite the additional resources, they often went down, causing unexpected additional work for development teams that derailed them from daily work. 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.

“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

- **Limited ability to scale.** The business use cases running on legacy systems, such as the recommendation engine and personalization, 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.

- **Performance bottlenecks.** Ultimately, limitations from legacy systems and their inability to handle the targeted business use cases effectively, 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 customer facing business use cases such as recommendation engine and Customer 360. These examples represent the analytical workloads indicated by the interviewed new tech organizations where large data sets need to be processed quickly and reliably. Any performance failures resulted not only in negative revenue impact, but also reputation damage and customer dissatisfaction as well.

AEROSPIKE'S PLATFORM FEATURES

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

- **Handle increasing loads through scaling with low latency.** When working with high and fluctuating volumes of data, the Aerospike Platform is designed to perform in real-time, preventing processing delays that could result in system failures and data loss.
- **Reliable performance throughout peak periods.** The Aerospike Platform can scale vertically as well as horizontally across servers and data centers, providing consistent performance when faced with spikes in activity.
- **High resilience.** The Aerospike Platform stores data in its distributed architecture framework to

ensure no single point of failure, protecting new tech organizations from unplanned downtime and ensuring consistent speed, availability and uptime for recommendation engines and customer personalization technologies.

- **Improved operations through optimized data storage.** With Aerospike's flash-optimized storage capability, organizations reduce storage footprints and streamline database infrastructure, reducing associated costs without sacrificing performance.

"We started with a single use case, from there we've brought on 40 or so other different development app groups within the organization to use Aerospike as either a cache or a database source. So, these are either brand new projects starting up or moving over from our old infrastructure. Today, we have 75 individual use cases and are bringing on one to two new ones a week."

Senior manager, e-commerce



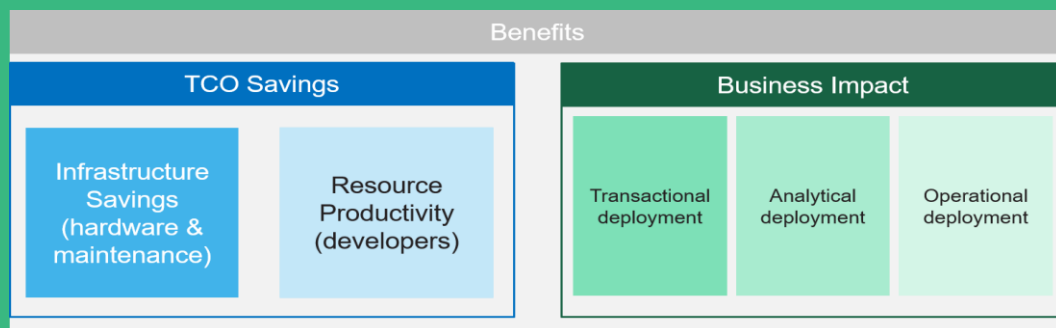
[READ THE FULL STUDY HERE](#)

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.
- 2) 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 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 new tech organizations highlighted analytical 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 NEW TECH ORGANIZATIONS

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

BENEFIT	DESCRIPTION	NEW TECH NARRATIVE
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 output expectations. With the Aerospike Platform, organizations realized a reduction in their overall server footprint without sacrificing performance.	An e-commerce company reduced their legacy servers from 60 down to seven with Aerospike. The senior manager added that the Aerospike servers: “[Allowed for] a lot less configuration, integration, and maintenance, even though the legacy servers were open source and free, and with Aerospike, we were paying for the enterprise version. With the reduced number of servers, Aerospike came out on the lower side of the cost equation.”
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 software and technology organization expressed that they needed a team of 10 to 12 FTEs on a continual basis to finish and run their data clusters on their legacy infrastructure. With Aerospike, they reduced that down to 0.25 FTEs for the initial targeted use case. To handle the data and server volume growth they have since seen with Aerospike, the same organization estimated that they would have needed 25 FTEs to manage in their old environment. Instead, they believe that they will not exceed 3 to 4 FTEs total with the Aerospike platform.
Profit growth from improved conversion rates ranges from 0.70% to 1.55% with analytical deployments.	Analytical deployments supported business uses impacting customer experience, such as recommendation engines and personalization. In such cases, Aerospike improved conversion rates in online sales.	<ul style="list-style-type: none"> A technology and software organization applied the power of the Aerospike platform against their new tech use case where high volumes of data were continually thrown against individual consumer profiles to make decisions that personalized ads and drove more business. They said, “In order to execute individualization or personalization in advertising on mobile apps or webpages, we needed to be able to access large volumes of consumer data, quickly.” For an e-commerce organization, their recommendation engine use case falls into a similar bucket of analytical deployments. They utilized high volumes of consumer and market data to fuel their recommendation engine throughout for the buyer journey on web and mobile sites to improve conversion rates. They said, “We’ve seen about a 6% improvement to conversion rate for products viewed based on recommendations, added to carts, and purchased.”

UNQUANTIFIED BENEFITS

In addition to the benefits outlined above, there were a few additional upsides which it was not possible to quantify:

Better customer experiences. With the Aerospike investment, new tech organizations were seeking better performance in order to fuel profit growth and to improve customer experiences. A senior manager at an e-commerce company explained, “If a recommendation is too slow, rather than wait on it to load, our system would have to display just a default recommendation. That doesn’t really ever happen with Aerospike.” Default recommendations remove the personalized touch that customers have come to expect in their interactions. However, the fewer system downtimes and faster response times experienced through the Aerospike investment helped organizations meet intense customer expectations around system availability, accuracy, speed, and personalization.

Peace of mind. The story of scale told through the Aerospike investment would not be possible if the organizations did not have full trust and transparency with the vendor. As mentioned, the business uses new tech organizations targeted for Aerospike were often customer-facing and involved large volumes or throughputs of data and critical systems. 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.

“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

“It came to that particular aspect that the system was relatively stable. We didn’t have any issues. It was serving us and everything was very on schedule. In fact, I’ve gotten this feedback from all of my team that utilizes the platform. For a while my conclusion has been that, the biggest benefit I got was the operational stability I was getting out of the system and the fact that I didn’t have any headaches.”

Head of engineering, software and tech services

TOTAL ECONOMIC IMPACT ANALYSIS

For more information, download the full report "[New Technology: The Projected Total Economic Impact™ of the Aerospike NoSQL Data Platform.](#)" commissioned by Aerospike and delivered by Forrester Consulting.

STUDY FINDINGS

Forrester interviewed four organizations across both the 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 1FTE, on average, to more value-add work
- An average of \$25M in business value from transactional deployment
- An average of \$655K in business value from operational deployment
- An average of \$47.6M in business value from analytical deployments



Projected return on investment (PROI)

442%-575%



Projected net present value (PNPV)

\$55.5M- \$72.2M

Appendix A: Endnotes

¹ Source: "Research Overview: Customer Analytics Technologies And Services," Forrester Research, Inc., September 30, 2020.

² Source: "The Forrester Tech Tide™: Data Management, Q1 2020," Forrester Research, Inc., January 23, 2020.

³ Source: "The Forrester Wave™: Translytical Data Platforms, Q4 2019," Forrester Research, Inc., October 23, 2019.

⁴ Source: "WEBINAR: Translytical Data Platforms: Delivering Analytics At The Speed Of Transactions," Forrester Research Inc., March 10, 2020.

⁵ Source: "The Forrester Tech Tide™: Enterprise Business Insights And Analytics, Q1 2019," Forrester Research, Inc., January 14, 2019.

⁶ Source: "The Forrester Tech Tide™: Data Management, Q1 2020," Forrester Research, Inc., January 23, 2020.

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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