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The Total Economic Impact™ Of Chronosphere

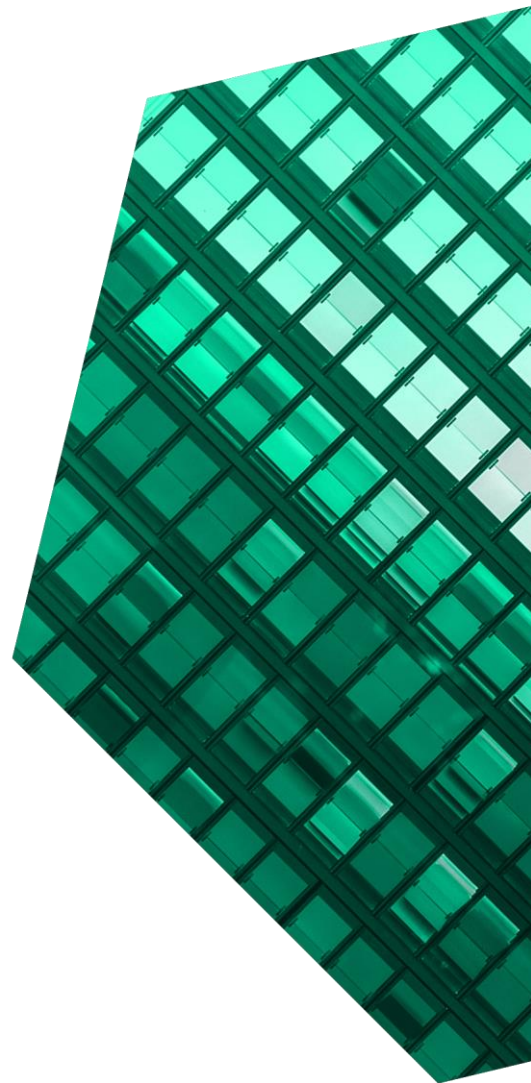
Cost Savings And Business Benefits
Enabled By Chronosphere

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ABOUT FORRESTER CONSULTING

Forrester provides independent and objective research-based consulting to help leaders deliver key transformation outcomes. Fueled by our customer-obsessed research, Forrester’s seasoned consultants partner with leaders to execute on their priorities using a unique engagement model that tailors to diverse needs and ensures lasting impact. For more information, visit forrester.com/consulting.

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Executive Summary

Organizations need to accurately measure and control observability data while confidently scaling their businesses without scaling associated costs. However, in most instances, business growth accelerates ahead of observability practice maturity. As organizations outgrow their prior observability solutions, they are left with the options of building observability tooling and practice in-house or investing in a new software-as-a-service (SaaS) solution, such as Chronosphere.

[Chronosphere](#) is a SaaS observability platform. It offers many benefits of operating an open source solution while improving visibility into the environment it monitors without diverting internal resources from their core competencies or exponentially adding to observability costs.

Chronosphere commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential return on investment (ROI) enterprises may realize by deploying Chronosphere.¹ The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of Chronosphere on their organizations.

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed five representatives with experience using Chronosphere. For the purposes of this study, Forrester aggregated the interviewees' experiences and combined the results into a single [composite organization](#) that is a multinational industry-agnostic

KEY STATISTICS



Return on investment (ROI)

165%



Net present value (NPV)

\$4.9M

business-to-consumer (B2C) organization with an annual revenue of \$1 billion.

Prior to using Chronosphere, these interviewees noted how prior observability tools and practices failed to meet growing demands of the business as it scaled due to either a lack of administrative support or technology limitations. As a result, observability programs suffered and left the environment prone to incidents that could at best divert the attention of internal resources from daily operations and at worst lead to blind scenarios where both observability platforms and the larger environment experienced downtime.

After the investment in Chronosphere, interviewees consolidated observability tools and streamlined workflows to enhance observability program effectiveness and increase visibility into the larger environment. As a result, organizations improved reliability and reduced incidents to give time back to key resource groups such as developers, engineers,

Reduction in incidents

75%



and help-desk workers. In addition to time spent in triage during downtime from incidents, the organizations avoided permanent revenue loss that occurred during critical downtime events.

KEY FINDINGS

Quantified benefits. Three-year risk-adjusted present value (PV) quantified benefits for the composite organization include:

- **Reduced incidents related to poor reliability by 75% annually.** Improved reliability reduces incidents by 75% annually. As a result, the organization avoids the associated internal resource time spent remediating downtime events as well as the revenue loss that can occur during customer-facing events. Over three years, the reduced downtime is worth more than \$5.2 million to the composite organization.
- **65% less time spent on observability administration.** In addition to better platform performance, Chronosphere is intuitive and easy to use for the administrative resources responsible for observability. Dedicated resources save 65% of their time, and the organization avoids adding headcount to observability as observability metrics grow. The resulting time savings is worth \$798,000 to the composite organization over the three-year investment.
- **Cost savings from a reduction in stored observability data of 40%.** Chronosphere functionality, such as control plane capabilities, enable the organization to store fewer metrics and trace data without reducing data quality and utility that negatively impacts availability. The resulting cost savings totals \$1.6M for the composite organization over the three-year investment.
- **Technology cost savings from consolidating up to 50% of prior observability tools.** Scattered technology comprises the legacy

observability landscape. With Chronosphere, the organization consolidates 50% of those legacy tools on Chronosphere by Year 3 to save on the associated annual licensing and support costs. The total cost savings is \$381,000 over three years.

Unquantified benefits. Benefits that provide value for the composite organization but are not quantified in this study include:

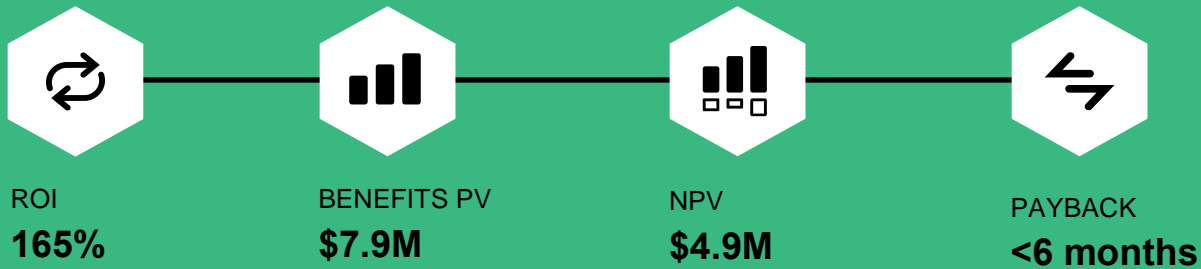
- **Improvements to internal employee satisfaction.** Improving observability reliability gives time back to critical resources who manage the observability practice as well as those involved in the remediation process. These resource groups reallocate that time to focus on their core competencies, which, in turn, improves job satisfaction and fuels the innovation effort for the organization.
- **Positive end customer experiences.** Reducing the most critical incidences translates into less downtime and impact to end customers, which improves customer experiences and drives positive business outcomes such as those around customer acquisition, retention, turnover, and satisfaction rates (e.g., CSAT).
- **Benefits of an open source model.** Chronosphere is a solution that marries the best of open source capabilities with cloud-native platform functionality. Benefits include a large peer support network, facilitated onboarding and training efforts, and the latest versioning and updates.

Costs. Three-year risk-adjusted PV costs for the composite organization include:

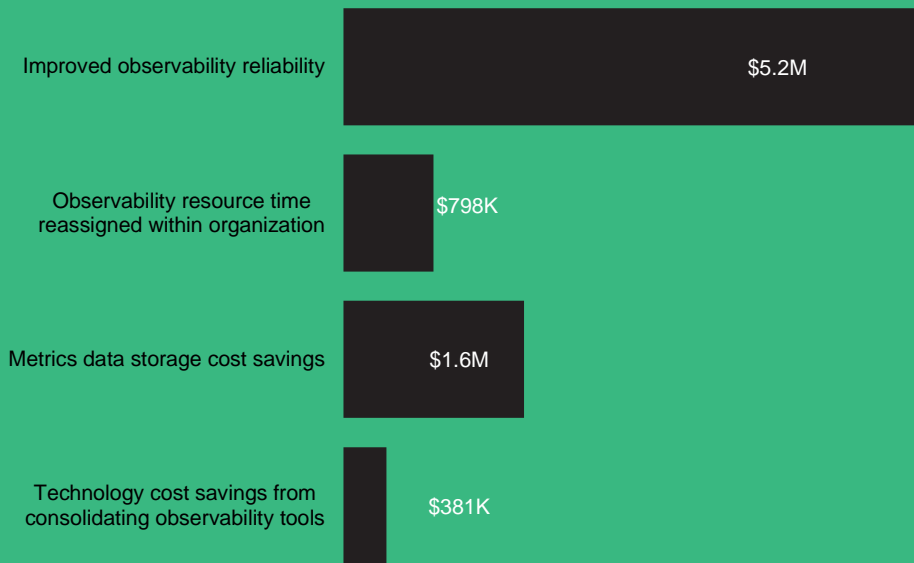
- **Annual licensing costs of \$2.3 million.** The composite organization pays a fee to Chronosphere for annual licensing costs for stored metrics data volumes that reflect retention timelines, data resolution, and active time series.

- **Internal resource time spent on investment-related activities of \$683,000.** Internal resources dedicate time to initial implementation as well as ongoing maintenance and administration of the Chronosphere platform throughout the investment period.

The representative interviews and financial analysis found that a composite organization experiences benefits of \$7.9 million over three years versus costs of \$3 million, adding up to a net present value (NPV) of \$4.9 million and an ROI of 165%.



Benefits (Three-Year)



“Before Chronosphere, our observability was on fire. It was negatively impacting the quality of life of the people on my team as well as all the service owners. Now it is not on fire. Chronosphere has just worked.”

— Director of infrastructure, security software

TEI FRAMEWORK AND METHODOLOGY

From the information provided in the interviews, Forrester constructed a Total Economic Impact™ framework for those organizations considering an investment in Chronosphere.

The objective of the framework is to identify the cost, benefit, flexibility, and risk factors that affect the investment decision. Forrester took a multistep approach to evaluate the impact that Chronosphere can have on an organization.

DISCLOSURES

Readers should be aware of the following:

This study is commissioned by Chronosphere and delivered by Forrester Consulting. It is not meant to be used as 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 study to determine the appropriateness of an investment in Chronosphere.

Chronosphere reviewed and provided feedback to Forrester, but 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 of the study.

Chronosphere provided the customer names for the interviews but did not participate in the interviews.



DUE DILIGENCE

Interviewed Chronosphere stakeholders and Forrester analysts to gather data relative to Chronosphere.



INTERVIEWS

Interviewed five representatives at organizations using Chronosphere to obtain data with respect to costs, benefits, and risks.



COMPOSITE ORGANIZATION

Designed a composite organization based on characteristics of the interviewees' organizations.



FINANCIAL MODEL FRAMEWORK

Constructed a financial model representative of the interviews using the TEI methodology and risk-adjusted the financial model based on issues and concerns of the interviewees.



CASE STUDY

Employed four fundamental elements of TEI in modeling the investment impact: benefits, costs, flexibility, and risks. Given the increasing sophistication of ROI analyses related to IT investments, Forrester's TEI methodology provides a complete picture of the total economic impact of purchase decisions. Please see Appendix A for additional information on the TEI methodology.

The Chronosphere Customer Journey

Drivers leading to the Chronosphere investment

Interviews			
Role	Industry	Region	Prior observability landscape
Senior manager of observability	Data collection and internet portals	Headquartered in Washington, US-based	Competitive vendor solution
Director of engineering and core infrastructure	Software development	Headquartered in California, global operations	Competitive vendor solution
Director of infrastructure	Security software	Headquartered in California, US-based	Open source solution managed internally
Engineering manager	Software development	Headquartered in California, US-based	Open source solution managed internally
Senior staff software engineer	Financial software	Headquartered in California, global operations	Open source solution managed internally

KEY CHALLENGES

Prior to investing in Chronosphere, organizations' observability landscapes fell into two categories:

- Organizations with competitive SaaS vendor solutions.** The two interviewees who replaced competitive vendor solutions with Chronosphere noted that prior observability tooling was scattered, ineffective, and expensive. These organizations initially scaled their businesses so rapidly that observability became an afterthought. As a result, they often implemented point solutions based on immediate needs versus the future of the business that considered changes to core systems (e.g., transition to cloud) or accumulation of even larger volumes of metrics data.
- Organizations that managed an open source solution internally.** The three interviewees who managed an open source solution internally also had to navigate rapid business growth and expansion. These organizations had a cloud-first mentality that enabled them to engage with open source solutions and embedded tools more successfully. However, with continued business growth on the horizon, they no longer had the

internal bandwidth or interest to dedicate resources to observability solutions.

Regardless of the prior solution, interviewees expressed common challenges, including:

- Observability reliability issues.** Degraded observability platform performance impacted visibility into the larger monitored environment. As a result, poor reliability within observability tooling directly increased the likelihood of incidents that impacted the larger environment through critical downtime events. These events inhibited both employee productivity as well as end user and customer experiences. Additionally, all incidents derailed observability teams as well as the larger teams involved in remediation efforts including those from development operations, security engineering, and customer service or IT help desk.

Observability reliability issues stemmed from limited technology capabilities that restricted control over cardinality and negatively impacted data quality. The director of engineering in software development explained how prior solutions lacked functionality to handle large data volumes: “[With Chronosphere], you get higher-quality persistent data versus junk. Before

Chronosphere, we had a lot of metrics that were high-cardinality or didn't make sense to be stored and didn't offer any value. Very often, especially with a metrics model where it's a global name space that anyone could do correlation across, you end up with slow queries."

A director of infrastructure at a security software company described 'flying blind' scenarios when observability tools and the larger environment experienced downtime simultaneously: "Looking at some past incidents, there were times when there were problems with the observability stack and we had something else break. So we would find ourselves in the situation where we were flying blind."

"[With our prior solution], we frequently ran into issues keeping the system up and running. We wanted to have availability and uptime guarantees of at least four nines, but we were struggling to keep at least two nines."

Senior staff software engineer, financial software

An engineering manager at a software development organization indicated the importance of allowing internal resources to focus on core competencies to benefit not only growing the business but also building a successful observability practice: "In terms of our core business, we are a product that serves data in real time to customers. They depend on it for business-driving use cases. If [our services] go down, customer experiences can go down, and

monitoring is the foundational piece of that. So we were like, 'Let's not mess around here,' and we bet on Chronosphere."

"We're not going to benefit by building our own monitoring stack. We have the engineering horsepower to do it, but we don't want to."

Engineering manager, software development

A senior staff software engineer at a financial software organization reiterated that poor observability impacted internal resources, "The periodic infrastructural complications that arose meant that our engineering team was spending most of the time triaging and remediating issues rather than focusing on building the big picture for the future of the company in terms of visibility."

- **High costs.** The second-largest challenge across the board for the interviewees' organizations involved costs. For internally managed solutions, the dedicated resource time was astronomical. Invaluable resources were dedicated to observability management, and others were often diverted from core competencies to manage the solution and remediate in case of an incident. A senior staff software engineer at a financial software organization estimated, "Before Chronosphere, we were burning a reasonable amount of money, close to 2% of the overall spend on infrastructure, just to maintain some metrics infrastructure."

Organizations with competitive vendor solutions faced high costs for stored observability data as

the business continued to grow. A director of engineering at a software development organization stated: “[Prior to Chronosphere] our cost model was that I would ask our developers what they were going to use for storage and provision for that. However, the overages were exponential because the business scaled quickly.”

SOLUTION REQUIREMENTS

The interviewees’ organizations searched for a solution that could:

- **Deliver high performance with large-scale and dynamic workloads.** An engineering manager at a software development organization explained how performance expectations were not static in the context of continued business growth: “We have an exponentially growing number of customers, and that means a proportional number of deployments of our product. So the big thing is we wanted all these deployments to feed into a single source of truth for monitoring for us to rely on, and that was really the biggest requirement other than, of course, general reliability.”
- **Include data governance functionality to help control costs.** Functionality such as profiling and data roll-up ensured that data governance was in the hands of the organization itself as the director of engineering at a software development organization described: “The profiling, as in the ability to slice and dice metrics and see what is being ingested into the system from different sources, gave us confidence from the testing that [Chronosphere] could handle the scale of our metrics and the cardinality without exponentially adding to costs.”
- **Operate with a close-to-open-source model.** The senior manager of observability at a data collection and internet portal organization stated, “We wanted a solution that was as close to open

source as possible so we could remain vendor-agnostic.”

COMPOSITE ORGANIZATION

Based on the interviews, Forrester constructed a TEI framework, a composite company, and an ROI analysis that illustrates the areas financially affected. The composite organization is representative of the five interviewees and used to present the aggregate financial analysis in the next section. The composite organization has the following characteristics:

Description of composite. The global billion-dollar B2C organization experiences rapid large-scale business growth. As a result, observability takes a back seat. Degraded observability leaves the organization vulnerable to reliability incidents within the larger environment that result in downtime events for core systems (e.g., severity [sev] 1 and sev 0 events). The landscape comprises point solutions from competitive vendors that do not effectively monitor the environment that presides in the cloud.

Deployment characteristics. The organization elects to consolidate observability tools on Chronosphere to improve performance, create efficiencies internally, and better manage costs of the solution. After considering the alternative scenario of running observability in-house, it elects not to so that internal resources can focus on core competencies and the observability practice can benefit from the expertise and support of Chronosphere. As the business continues to scale, the organization’s ingested metrics volume grows from 500,000 in Year 1 to 1 million in Year 2 and 2 million by Year 3. With Chronosphere, the organization maintains reliability improvements while optimizing costs by only storing 60% of the total ingested metrics. Internally, one FTE is dedicated to ongoing observability platform maintenance and administration across the first two years of the investment, and that doubles to two FTEs by Year 3.

Key Assumptions

- **\$1 billion**
- **Multinational industry-agnostic org**
- **Ingested metrics data at 2 million per second in Y3**
- **40% average data aggregation**

Analysis Of Benefits

■ Quantified benefit data as applied to the composite

Total Benefits						
Ref.	Benefit	Year 1	Year 2	Year 3	Total	Present Value
Atr	Improved observability reliability	\$2,076,783	\$2,076,783	\$2,076,783	\$6,230,350	\$5,164,653
Btr	Observability resource time reassigned within organization	\$98,865	\$304,200	\$608,400	\$1,011,465	\$798,382
Ctr	Metrics data storage cost savings	\$288,000	\$576,000	\$1,152,000	\$2,016,000	\$1,603,366
Dtr	Technology cost savings from consolidating observability tools	\$90,000	\$157,500	\$225,000	\$472,500	\$381,029
	Total benefits (risk-adjusted)	\$2,553,648	\$3,114,483	\$4,062,183	\$9,730,315	\$7,947,430

IMPROVED OBSERVABILITY RELIABILITY

Evidence and data. Prior to Chronosphere, the interviewees' organizations suffered from observability reliability issues that ranged from minor incidents with the observability platform itself to critical downtime events that impacted the monitored systems in the larger environment. Chronosphere enabled organizations to consolidate many observability tools on a single platform that offered more visibility into the larger environment. With resources utilizing a single source of truth for observability data, organizations streamlined related workflows to create efficiencies that further mitigated the impact of the volume and severity of the incidents. Additionally, Chronosphere enabled data governance controls that allowed the businesses to continue to scale without impact to reliability and platform performance. In short, improved observability equated to reliability.

- A senior staff software engineer at a financial software organization described the prior environment in terms of incident volumes and severity as well as the impact to internal resources: "We were dealing with at least six to seven sevs a quarter. If you consider that for each sev, it is time spent by an engineer or a

"Since implementing Chronosphere, we haven't had any sev 0 or sev 1 events."

Senior staff software engineer, financial software

team of engineers depending on the complexity of the sev and the urgency of the sev. Considering that, we were looking at a range of at least 6 to 12 hours in some cases of direct development time spent for a group of development resources who could include managers as well."

- The same senior staff software engineer said that Chronosphere delivered reliability improvements, "Chronosphere guarantees three nines, but I think we have been pushing four nines for much of the time [since implementation]."

- The director of infrastructure at a security software organization attributed reliability improvements to improved data visualization: “Data visualization is 2x better than it was before [Chronosphere], and our alerting is much more reliable. We are not as blind as we were before.”
- The same director of infrastructure described the reliability improvement impact on end customers, both internal and external to the organization: “The main thing I will say is that as opposed to our prior environment, we are able to reliably see what’s happening in our environment, and that is just a tremendous win. There’s the cognitive burden of lag time [for our developers] that has been eliminated. But also knowing what’s going on in our environment is the lifeblood of running a service like ours, especially at our scale. If our observability stack isn’t working, our customers will lose trust in us.”
- A senior manager of observability at a data collection and internet portals organization remarked on the reliability improvements with Chronosphere, “With Chronosphere, we always aim for the four nines of observability reliability.”
- For the same senior manager of observability, the impact to customers had hard associated revenue, “If our website is slow for even 5 minutes, and we can’t roll it back within 3 minutes, 5% of customers become dissatisfied with the website, which impacts abandonment rates, and there is a business impact to losing that traffic and potential customers.”
- Additionally, the organization experiences two performance degradation incidents a quarter, comprised of sev 2 and higher incidents.
- The average time to remediate all incidents is 9 hours.
- With Chronosphere, the organization eliminates all sev 0 and sev 1 incidents, representing 75% of the total incident count.
- The average hourly rate for the entire resource team involved in remediation efforts for incidents includes cross-functional resources from various IT, operational, and customer-facing teams.
- Forrester assumes that, on average, 10 FTEs from various IT groups across DevOps and network operations work internally to remediate the incident.
- A larger group of 250 customer service and help-desk resources are diverted to customer and employee complaints and questions during remediation.
- Given that the most critical incidents that impact core systems and customer-facing workloads are eliminated, the organization avoids revenue loss as well.
- Forrester assumes that 5% of the hourly revenue generated by the organization is subject to permanent loss, and there is a 10% profit margin applied as well.

Modeling and assumptions. For purposes of the financial model, Forrester makes the following assumptions:

- Prior to Chronosphere, the composite organization experiences six critical downtime events a quarter, comprised of sev 0 and sev 1 incidents.
- **Risks.** Observability reliability improvements may vary depending on the following:
 - The prior environment in terms of the volume and level of severity of incidents annually.
 - The thresholds in place for categorizing incident severity (e.g., the composite eliminating the sev 1 and sev 0 incidents that occur in the prior state based on appropriate thresholds in the prior environment).

- New insights surfaced with increased visibility (e.g., the time savings from eliminating sev 1 and sev 0 incidents resulting in bandwidth for the team to harden the environment and instrument more systems, insights surfaced resulting in previously unrecognized incidents).
- The average time to remediate incidents and the level and number of resources typically involved in remediation efforts internally.

- The hourly revenue generated by the organization and the percentage of that revenue subject to permanent loss in the event of critical downtime.

Results. To account for these risks, Forrester adjusted this benefit downward by 5%, yielding a three-year risk-adjusted total PV (discounted at 10%) of \$5.2 million.

Improved Observability Reliability					
Ref.	Metric	Source	Year 1	Year 2	Year 3
A1	Volume of critical downtime incidents before Chronosphere annually (sev 1 and sev 0)	Composite	24	24	24
A2	Volume of performance degradation incidents before Chronosphere annually (sev 2 and higher)	Composite	8	8	8
A3	Average number of hours spent remediating incidents	Composite	9	9	9
A4	Total average hours spent remediating downtime and performance degradation events before Chronosphere annually	(A1+A2)*A3	288	288	288
A5	Reduction in incidents experienced with Chronosphere	Composite	75%	75%	75%
A6	Average hourly rate for resource team dedicated to remediation (DevOps, network ops, help desk)	TEI standard	\$9,550	\$9,550	\$9,550
A7	Subtotal: total efficiency cost savings from reduction in incidents	A4*A5*A6	\$2,062,800	\$2,062,800	\$2,062,800
A8	Annual revenue	Composite	\$1,000,000,000	\$1,000,000,000	\$1,000,000,000
A9	Average revenue per hour	A8/365*24	\$114,155	\$114,155	\$114,155
A10	Critical downtime before Chronosphere annually (hours)	A1*A3	216	216	216
A11	Percentage of revenue permanently lost during critical downtime	Assumption	5%	5%	5%
A12	Revenue lost from critical downtime events prior to Chronosphere	A9*A10*A11	\$1,232,877	\$1,232,877	\$1,232,877
A13	Subtotal: total retained profit with Chronosphere	A12* 10% profit margin	\$123,288	\$123,288	\$123,288
At	Improved observability reliability	A7+A13	\$2,186,088	\$2,186,088	\$2,186,088
	Risk adjustment	↓5%			
Atr	Improved observability reliability (risk-adjusted)		\$2,076,783	\$2,076,783	\$2,076,783
Three-year total: \$6,230,350			Three-year present value: \$5,164,653		

OBSERVABILITY RESOURCE TIME REASSIGNED WITHIN ORGANIZATION

Evidence and data. Prior to investing in Chronosphere, the interviewees' organizations spent a lot of time on observability administration and maintenance for either the internally managed solutions or the competitive solutions that were in place. The Chronosphere platform reduced the volume of incidents that required time from the observability administration team during remediation efforts, and the platform itself was intuitive and easy to use during daily operations. As such, the interviewees' organizations reassigned internal resources from observability administration in the first year and avoided adding to resource time in subsequent years as the business scaled.

- The director of engineering at a software development organization explained how Chronosphere capabilities improved governance efforts that previously required internal engineering time: “[With Chronosphere, we avoid a portion of one engineer who takes on the responsibility of maintaining custom standards for governance, product teams who take on more responsibility, and everyone who works a little bit harder. Now we can roll out templates and dashboards a lot easier because we don’t have to have custom standards.”
- The same director of engineering at a software development organization explained how business scale impacted the future resource dedication for observability administration: “It’s nontrivial to host a metrics database that ingests 9 million metrics per second and do it well. We’re talking about three full-time engineers at least. And where’s the growth in their career when they are not working on something that’s really core to the business? We would rather have our engineers work on more creative things, like building new services.”

- A director of infrastructure at a security software organization reiterated the importance of resource cost avoidance in the face of rapid business growth: “[With Chronosphere], I am not having to fund two or three people whose responsibility it is to keep our observability tools up and running. Going forward, it would be at least one additional engineer’s time taken away from building our core product if I consider how we are growing as a business.”
- An engineering manager at a software development organization described the cost impact of having to dedicate engineering time to observability administration, especially in the early years of the business: “Before Chronosphere, we had 10 engineers on the team total, and one partial engineer was dedicated to observability. However, poor observability impacted my engineering time, and Chronosphere proved cheaper than my engineering time.”

Modeling and assumptions. For purposes of the financial model, Forrester makes the following assumptions:

- The composite organization benefits from 65% productivity time savings for observability resources dedicated to observability administration.
- In the first year, there is one FTE dedicated to observability administration. In subsequent years, the organization avoids adding headcount to observability management despite large-scale growth in the business and associated metrics data.
- The average fully burdened salary for resources dedicated (or partially dedicated) to observability management is \$169,000.

Risks. Observability resource time reassigned within the organization may vary depending on the following:

- The number of resources dedicated to observability in the prior state.
- The type of resource and associated average annual salary.
- The scale at which the metrics data volume grows that dictates the time savings in Years 2 and 3.

Results. To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year risk-adjusted total PV of \$798,000.

Observability Resource Time Reassigned Within Organization					
Ref.	Metric	Source	Year 1	Year 2	Year 3
B1	Impacted observability resources	Composite	1	2	4
B2	Average fully burdened salary for dedicated observability resources	TEI standard	\$169,000	\$169,000	\$169,000
B3	Reduction in time spent with Chronosphere	Composite	65%	100%	100%
Bt	Observability resource time reassigned within organization	B1*B2*B3	\$109,850	\$338,000	\$676,000
	Risk adjustment	↓10%			
Btr	Observability resource time reassigned within organization (risk-adjusted)		\$98,865	\$304,200	\$608,400
Three-year total: \$1,011,465			Three-year present value: \$798,382		

METRICS DATA STORAGE COST SAVINGS

Evidence and data. Prior to Chronosphere, the interviewees’ organizations faced high costs for metrics data storage. Chronosphere offered data profiling and roll-up functionality to help manage cardinality and enabled organizations to scale the business without exponentially growing data storage costs.

- A senior manager of observability at a data collection and internet portals organization described how it conducted an internal ROI calculation and found, “With Chronosphere, there was an improvement to the growth and [metrics data] storage costs ratio that was 4x to 5x better than other SaaS vendors and 2x better than other open source vendors.”
- A director of engineering at a software development organization explained the impact of drop rules and other functionality on the total cost of storage: “Chronosphere allows you to see what’s hitting your servers and then what’s persisted. Because Chronosphere has drop rules and recording rules that you can change, you can drop metrics before they get stored. We store somewhere around 8 or 9 million points per second right now, but we have about 13 or 14 million points per second hitting our servers.”
- An engineering manager at a software development organization tied the cost savings from less stored data to both better data quality and added flexibility for future business growth: “We have grown the data that we run through

Chronosphere by 4x in two years. And a lot of that does not count toward our ingest capacity, so that makes things very flexible, as do the rights and duration of storage levers. Additionally, the drop rules aspect of it only really became clear after we started implementing [Chronosphere] because we realized there were cases where we emitted a lot of metrics and a lot of them were garbage.”

Modeling and assumptions. For purposes of the model, Forrester makes the following assumptions:

- The composite organization ingests 500,000 metrics (points per second) in Year 1. The volume grows in each subsequent year of the investment in line with business growth to reach 1 million points per second in Year 2 and 2 million points per second by Year 3.

With Chronosphere, the organization reduces the volume of metrics stored by 40%.

Risks. Metrics data storage cost saving may vary depending on the following:

- The volume of metrics data ingested annually.
- The cost per metrics data for stored metrics with the prior solution.
- The reduction in stored metrics data with Chronosphere.

Results. To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year risk-adjusted total PV of \$1.6 million.

Metrics Data Storage Cost Savings					
Ref.	Metric	Source	Year 1	Year 2	Year 3
C1	Ingested observability metrics (points per second)	Composite	500,000	1,000,000	2,000,000
C2	Total projected cost of ingested observability metrics with legacy tools	Composite	\$800,000	\$1,600,000	\$3,200,000
C3	Reduction in metrics data requiring storage with Chronosphere	Composite	40%	40%	40%
Ct	Metrics data storage cost savings	C2*C3	\$320,000	\$640,000	\$1,280,000
	Risk adjustment	↓10%			
Ctr	Metrics data storage cost savings (risk-adjusted)		\$288,000	\$576,000	\$1,152,000
Three-year total: \$2,016,000			Three-year present value: \$1,603,366		

TECHNOLOGY COST SAVINGS FROM CONSOLIDATING OBSERVABILITY TOOLS

Evidence and data. The organizations with prior SaaS observability platforms in place also experienced cost savings from consolidating the now-redundant tools.

A senior manager of observability at a data collection and internet portals organization indicated that in the first year alone they eliminated 20% of redundant observability tools on Chronosphere in the first year alone, and despite not expecting to consolidate 100% of the prior solutions, the manager planned to continue the effort over the next few years.

Modeling and assumptions. For purposes of the financial model, Forrester makes the following assumptions:

- The composite organization spends \$500,000 a year on observability tools without Chronosphere.
- With Chronosphere, the organization eliminates 20% of the prior tools in Year 1, 35% in Year 2, and 50% by Year 3.

Risks. Technology cost savings from consolidating observability tools may vary depending on the following:

- The organizations’ prior environment and total annual cost of previous observability tools.
- The appetite and cadence for observability tool consolidation efforts.

Results. To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year risk-adjusted total PV of \$381,000.

Technology Cost Savings From Consolidating Observability Tools

Ref	Metric	Source	Year 1	Year 2	Year 3
D1	Annual cost of observability tools	Composite	\$500,000	\$500,000	\$500,000
D2	Percentage of observability tools retired annually due to new solution	Composite	20%	35%	50%
Dt	Technology cost savings from consolidating observability tools	D1*D2	\$100,000	\$175,000	\$250,000
	Risk adjustment	↓10%			
Dtr	Technology cost savings from consolidating observability tools (risk-adjusted)		\$90,000	\$157,500	\$225,000

Three-year total: \$472,500

Three-year present value: \$381,029

UNQUANTIFIED BENEFITS

Interviewees mentioned the following additional benefits that their organizations experienced but were not able to quantify.

Improvements to internal employee satisfaction.

A few factors contributed to internal employee satisfaction, including:

- **Observability reliability improvements.** Interviewees’ organizations shifted away from

firefighting in observability and gave internal employees who were involved in remediation efforts time back to focus on core competencies. The organizations reduced critical downtime for nontechnology resources as well, which improved overall employee satisfaction.

- **Ease of use of the Chronosphere platform and Chronosphere customer support.** The Chronosphere platform was intuitive, easy to use, and responsive. Interviewees’ organizations

mentioned Chronosphere customer support that lent additional expertise and guidance as needed to internal observability teams. A senior manager of observability at a data collection and internet portals org said: “Chronosphere is easy and approachable and provides excellent service. If they spot a problem such as cardinality expanding, they react quickly. Also, if they see a problem with one customer, they will communicate with all customers.”

Positive end customer experiences. Chronosphere eliminated the most severe incidents for the interviewees’ organization. Those incidents often impacted core systems that supported customer-facing workloads. These incidents not only impacted revenue for the organizations but also negatively impacted customer experiences and relationships with the brand.

Benefits of an open source model. While Chronosphere is a SaaS platform, the interviewees’ organizations indicated that they benefitted from open source capabilities that left them feeling more supported and less restricted when it came to choosing other vendor relationships. Specific open source benefits included:

- **Large peer support network.** The interviewees’ organizations used Chronosphere’s expansive peer support network self-service by searching for assistance and answers to questions online. Additionally, the Chronosphere platform was vendor-agnostic, so organizations continued to benefit from open source projects.
- **Facilitated onboarding and training efforts.** Interviewees’ organizations cited less onboarding time for engineers and less work for the observability team to provide onboarding and ongoing learning materials with Chronosphere.
- **Evergreen platform maintenance.** Interviewees’ organizations indicated that the Chronosphere platform will continue to improve over time

without dedicating internal resource time to maintaining version controls and ongoing updates, much like open source solutions.

FLEXIBILITY

The value of flexibility is unique to each customer. There are multiple scenarios in which a customer might implement Chronosphere and later realize additional uses and business opportunities.

Consolidate additional observability functionality on Chronosphere. The interviewees’ indicated that they desire to see Chronosphere take on more of their observability workloads beyond metrics. Interviewees indicated that distributed traces and logging were two key areas of interest. Consolidating more observability on a single platform will further improve visibility into the environment and generate more efficiencies and cost savings.

Flexibility would also be quantified when evaluated as part of a specific project (described in more detail in [Appendix A](#)).

Analysis Of Costs

■ Quantified cost data as applied to the composite

Total Costs							
Ref.	Cost	Initial	Year 1	Year 2	Year 3	Total	Present Value
Etr	Annual licensing costs	\$0	\$415,800	\$831,600	\$1,663,200	\$2,910,600	\$2,314,860
Ftr	Total internal resource time spent on investment activities	\$110,565	\$176,904	\$176,904	\$353,808	\$818,181	\$683,410
	Total costs (risk-adjusted)	\$110,565	\$592,704	\$1,008,504	\$2,017,008	\$3,728,781	\$2,998,270

ANNUAL LICENSING COSTS

Evidence and data. Interviewees' organizations paid annual fees to Chronosphere for licensing. Licensing costs vary depending on volume of stored metrics data, retention timelines, as well as data resolution and active time series.

- An engineering manager at a software development organization indicated that annual fees to Chronosphere considered data ingest volumes, retention timelines, and cardinality, which was the biggest variable proportional to ingest volumes. For example, the larger footprints deployed translated to higher cardinality and more ingested data that must be stored.
- A director of engineering at a software development organization explained that the organization paid Chronosphere for persisted (or stored) data and a much smaller fee for ingested metrics. The annual fees included support.

Modeling and assumptions. For purposes of the financial model, Forrester makes the following assumptions:

- The composite organization ingests 500,000 metrics per second in Year 1, 1 million in Year 2, and 2 million in Year 3.

- On average, 60% of the ingested metrics are stored with Chronosphere.
- The rate per metric for stored data includes data retention of 13 months and support.
- Pricing may vary. Contact the Chronosphere for additional details.

Risks. Annual licensing costs to Chronosphere may vary depending on ingested metrics data, stored metrics data (cardinality), and data retention timelines.

Results. To account for these risks, Forrester adjusted this cost upward by 5%, yielding a three-year risk-adjusted total PV (discounted at 10%) of \$2.3 million.

Annual Licensing Costs						
Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
E1	Ingested observability metrics per second	C1		500,000	1,000,000	2,000,000
E2	Percentage of stored data	1-C3		60%	60%	60%
Et	Annual licensing costs	E1*E2*stored data rate	\$0	\$396,000	\$792,000	\$1,584,000
	Risk adjustment	↑5%				
Etr	Annual licensing costs (risk-adjusted)		\$0	\$415,800	\$831,600	\$1,663,200
Three-year total: \$2,910,600			Three-year present value: \$2,314,860			

TOTAL INTERNAL RESOURCE TIME SPENT ON INVESTMENT ACTIVITIES

Evidence and data. Interviewees’ organizations dedicated time to the Chronosphere investment for implementation as well as ongoing administration and maintenance of the Chronosphere platform.

- An engineering manager at a software development organization stated: “We were able to get started quite quickly. Chronosphere has become turnkey to the point where we do not need to think about it whenever we are scaling our own customer deployments. Overall, Chronosphere requires very little time and effort to maintain, and it scales with us.”
- A director of infrastructure at a security software organization said, “The move over to Chronosphere almost immediately went positive in terms of time for the team.”
- A director of engineering at a software development organization provided context for implementation activities that could extend timelines: “At the same time [as we implemented Chronosphere], we took the opportunity to put in some new standards. Instead of having services add their service name or things about their

infrastructure to the metrics themselves, we do it at the collection layer. It’s a fair amount of work. Depending on the size of the service, the code base, and the scale, it could take a couple of weeks, or it could take a month or so to get it done right.”

Modeling and assumptions. For purposes of the financial model, Forrester makes the following assumptions:

- Ten resources dedicate time to the initial platform implementation.
- The composite organization dedicates one FTE to ongoing platform administration and maintenance in Years 1 and 2. By Year 3, the metrics data volume scales to require an additional FTE for ongoing activities related to the Chronosphere investment.

Risks. Total internal resource time spent on investment activities may vary depending on the organization’s approach to implementation as well as the size and scope of the observed environment.

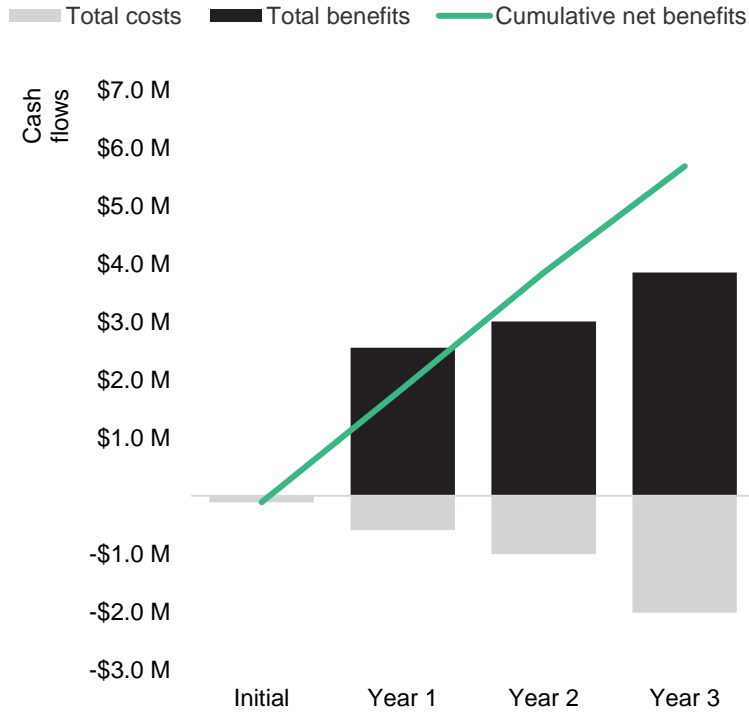
Results. To account for these risks, Forrester adjusted this cost upward by 5%, yielding a three-year risk-adjusted total PV of \$683,000.

Total Internal Resource Time Spent On Investment Activities						
Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
F1	Resources responsible for observability activities	Composite	10	1	1	2
F2	Hours dedicated to Chronosphere investment per resource (initial implementation, ongoing maintenance, and administration)	Composite	130	2,080	2,080	2,080
F3	Fully loaded hourly rate for impacted resources	TEI standard	\$81	\$81	\$81	\$81
Ft	Total internal resource time spent on investment activities	$F1 \cdot F2 \cdot F3$	\$105,300	\$168,480	\$168,480	\$336,960
	Risk adjustment	↑5%				
Ftr	Total internal resource time spent on investment activities (risk-adjusted)		\$110,565	\$176,904	\$176,904	\$353,808
Three-year total: \$818,181			Three-year present value: \$683,410			

Financial Summary

CONSOLIDATED THREE-YEAR RISK-ADJUSTED METRICS

Cash Flow Chart (Risk-Adjusted)



The financial results calculated in the Benefits and Costs sections can be used to determine the ROI, NPV, and payback period for the composite organization's investment. Forrester assumes a yearly discount rate of 10% for this analysis.

These risk-adjusted ROI, NPV, and payback period values are determined by applying risk-adjustment factors to the unadjusted results in each Benefit and Cost section.

Cash Flow Analysis (Risk-Adjusted Estimates)

	Initial	Year 1	Year 2	Year 3	Total	Present Value
Total costs	(\$110,565)	(\$592,704)	(\$1,008,504)	(\$2,017,008)	(\$3,728,781)	(\$2,998,270)
Total benefits	\$0	\$2,553,648	\$3,114,483	\$4,062,183	\$9,730,315	\$7,947,430
Net benefits	(\$110,565)	\$1,960,944	\$2,105,979	\$2,045,175	\$6,001,534	\$4,949,160
ROI						165%
Payback period						<6 months

Appendix A: Total Economic Impact

Total Economic Impact 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 TEI methodology helps companies demonstrate, justify, and realize the tangible value of IT initiatives to both senior management and other key business stakeholders.

TOTAL ECONOMIC IMPACT APPROACH

Benefits represent the value delivered to the business by the product. The TEI methodology places equal weight on the measure of benefits and the measure of costs, allowing for a full examination of the effect of the technology on the entire organization.

Costs consider all expenses necessary to deliver the proposed value, or benefits, of the product. The cost category within TEI captures incremental costs over the existing environment for ongoing costs associated with the solution.

Flexibility represents the strategic value that can be obtained for some future additional investment building on top of the initial investment already made. Having the ability to capture that benefit has a PV that can be estimated.

Risks measure the uncertainty of benefit and cost estimates given: 1) the likelihood that estimates will meet original projections and 2) the likelihood that estimates will be tracked over time. TEI risk factors are based on "triangular distribution."

The initial investment column contains costs incurred at "time 0" or at the beginning of Year 1 that are not discounted. All other cash flows are discounted using the discount rate at the end of the year. PV calculations are calculated for each total cost and benefit estimate. NPV calculations in the summary tables are the sum of the initial investment and the discounted cash flows in each year. Sums and present value calculations of the Total Benefits, Total Costs, and Cash Flow tables may not exactly add up, as some rounding may occur.



PRESENT VALUE (PV)

The present or current value of (discounted) cost and benefit estimates given at an interest rate (the discount rate). The PV of costs and benefits feed into the total NPV of cash flows.



NET PRESENT VALUE (NPV)

The present or current value of (discounted) future net cash flows given an interest rate (the discount rate). A positive project NPV normally indicates that the investment should be made unless other projects have higher NPVs.



RETURN ON INVESTMENT (ROI)

A project's expected return in percentage terms. ROI is calculated by dividing net benefits (benefits less costs) by costs.



DISCOUNT RATE

The interest rate used in cash flow analysis to take into account the time value of money. Organizations typically use discount rates between 8% and 16%.



PAYBACK PERIOD

The breakeven point for an investment. This is the point in time at which net benefits (benefits minus costs) equal initial investment or cost.

Appendix B: Endnotes

¹ Total Economic Impact 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 TEI methodology helps companies demonstrate, justify, and realize the tangible value of IT initiatives to both senior management and other key business stakeholders.

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