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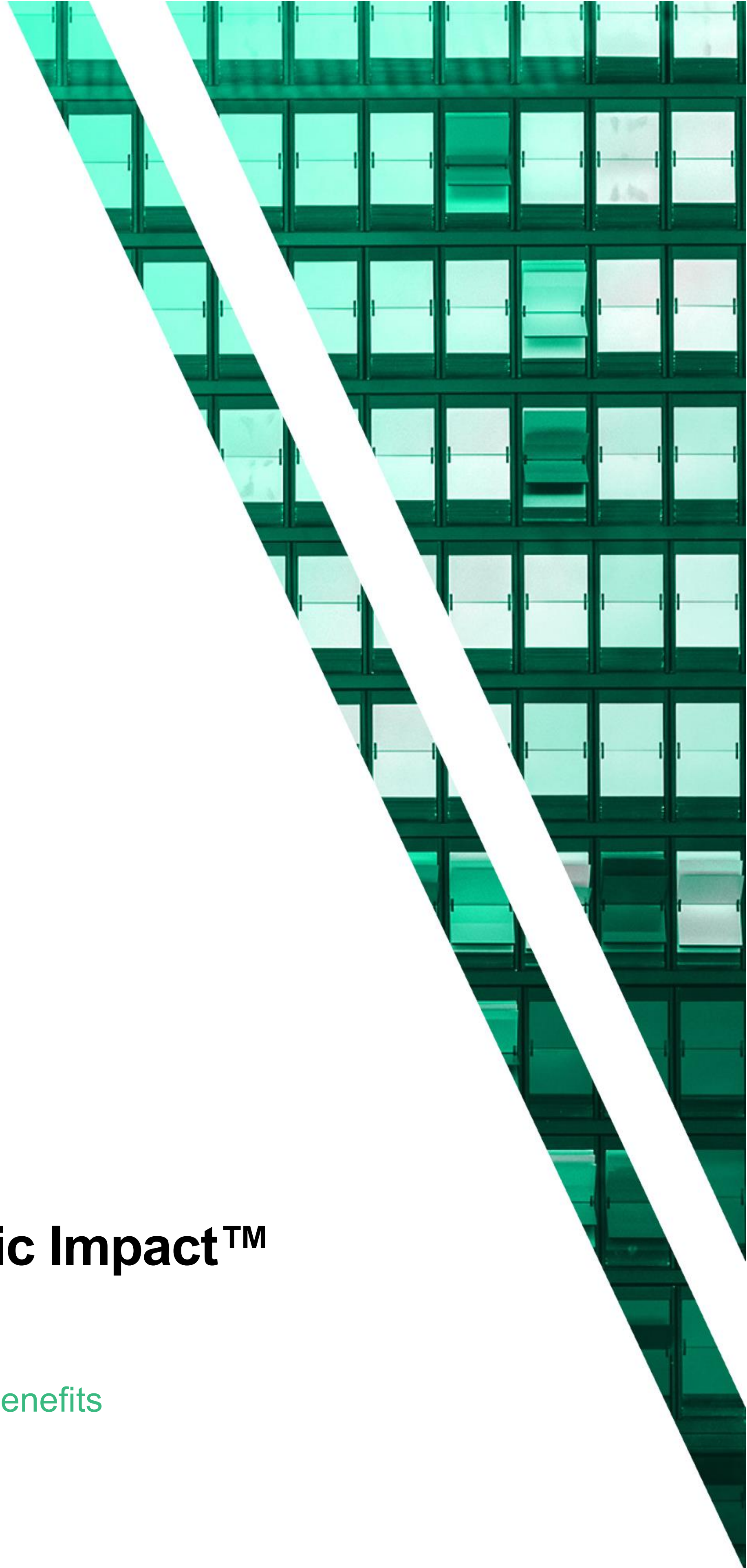

The Total Economic Impact™ Of Conviva

Cost Savings And Business Benefits Enabled By Conviva

January 2021

A FORRESTER TOTAL ECONOMIC IMPACT™ STUDY COMMISSIONED BY CONVIVA

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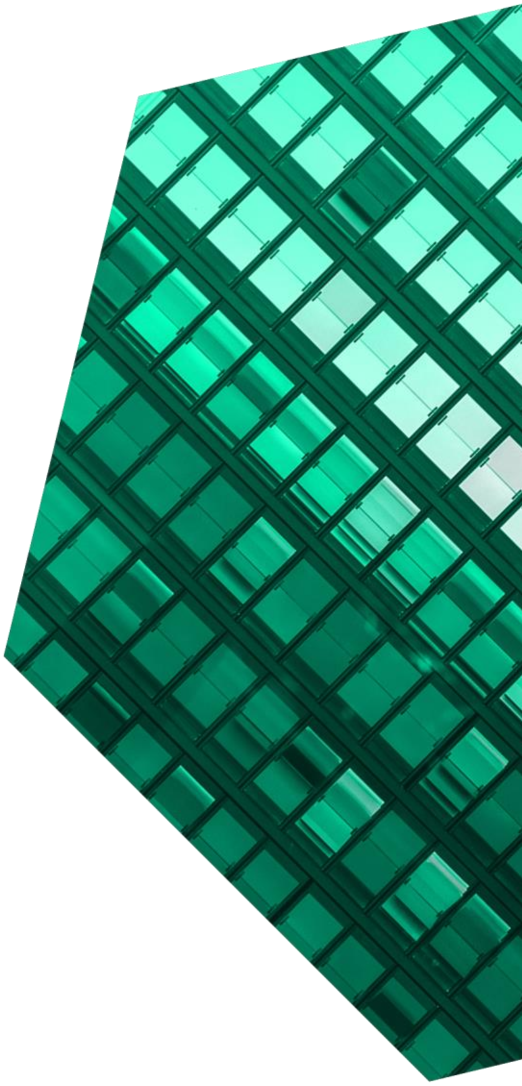


ABOUT FORRESTER CONSULTING

Forrester Consulting provides independent and objective research-based consulting to help leaders succeed in their organizations. For more information, visit forrester.com/consulting.

Executive Summary

> The past decade has been particularly volatile for the video business as devices and services have continued to morph, changing how video is created, consumed, and paid for. In a digital world where viewers are accustomed to services that make it easy to view what they want, when they want, video streaming providers must increasingly improve the experience — or risk being left behind.

Conviva provides measurement and analytics software to streaming media providers, allowing them to continuously monitor streaming performance in real time. Conviva's Experience Insights provides monitoring and diagnosis at the device level for individual sessions to identify performance issues with streaming content quickly and accurately. Conviva also provides similar monitoring for streaming advertising, providing analytics to support monetization of content. Precision is an added feature that automates content delivery network (CDN) optimization. Social Insights is an optional add-on that centralizes cross-platform social audience consumption data.

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

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed four customers with experience using Conviva. For the purposes of this study, Forrester aggregated the experiences of the interviewed customers and combined the results into a single composite organization.

Prior to using Conviva, customers heavily relied on CDN providers to report service quality metrics. However, those metrics were limited, and analysts found it difficult or impossible to clearly define service problems. The interviewed customers used surveys, focus groups, and call center interactions and, in some cases, monitored social media to assess users' experiences.

KEY STATISTICS

Return on investment (ROI)
340%

Net present value (NPV)
$2.8 million

Upon investing in Conviva, analysts and managers receive real-time service information for each viewer. Key results from the investment include reduced costs across an organization, from analysts and developers to customer care. Customers' quality of experience (QoE) also improves while customer churn decreases.

Improved productivity of operations team

$1,063,129

> **“The level of detail that we had from the way Conviva frames information to show what’s happening with every single consumer on our platform — it was a complete revelation for me.”**
>
> — Head, content delivery platform, entertainment

KEY FINDINGS

Quantified benefits. Risk-adjusted present value (PV) quantified benefits include:

- **Improved productivity of operations team worth $1.1M.** Improved analytics allow operations teams to diagnose issues in about half the time they spent prior to adopting Conviva.
- **Reduced capital expense of nearly $224K.** Improved understanding of problem sources allows managers to avoid costly misdirected investments.
- **Decreased CDN costs by more than $671K.** Interviewed managers reported that Conviva QoE statistics allow their organizations to source CDN services based on quality and price. On average, organizations can leverage those metrics to negotiate a 50% reduction in cost.
- **Reduced costs of operating call center by $564K.** Conviva reduces both the number and duration of customer care calls.
- **Reduced customer churn worth more than $543K.** Improved problem resolution through real-time monitoring leads to a decrease in buffering (modeled at 4.6% in the composite analysis), which managers link directly to reduced customer churn.
- **Reduced cost of reporting across multiple business units valued at nearly $532K.** Conviva’s dashboard reporting of statistics relieves analysts of the burdensome and time-consuming effort to create reports across subsidiaries and lines of business.

Unquantified benefits. Benefits that are not quantified for this study include:

- **Better, more reliable development.** The head of the content delivery platform for an entertainment company told Forrester, “Conviva is a crucial tool of nonfunctional testing to make sure as we build our products, we’re ensuring that they’re able to perform at their best depending on what they’re connected to.”

Costs. Risk-adjusted PV costs include:

- **Cost of Conviva license totaling approximately $717K.** Convivia licensing costs vary based on many factors, including total viewing hours, product configuration, and contract term.
- **Cost of training totaling more than $100K.** Customers reported that the learning curve to gain proficiency is one to two weeks.

The customer interviews and financial analysis found that a composite organization experiences benefits of nearly $3.6M over three years versus costs of approximately $817K adding up to a net present value of more than $2.8M and an ROI of 340%.

Reduced cost of reporting across business units

$531,565

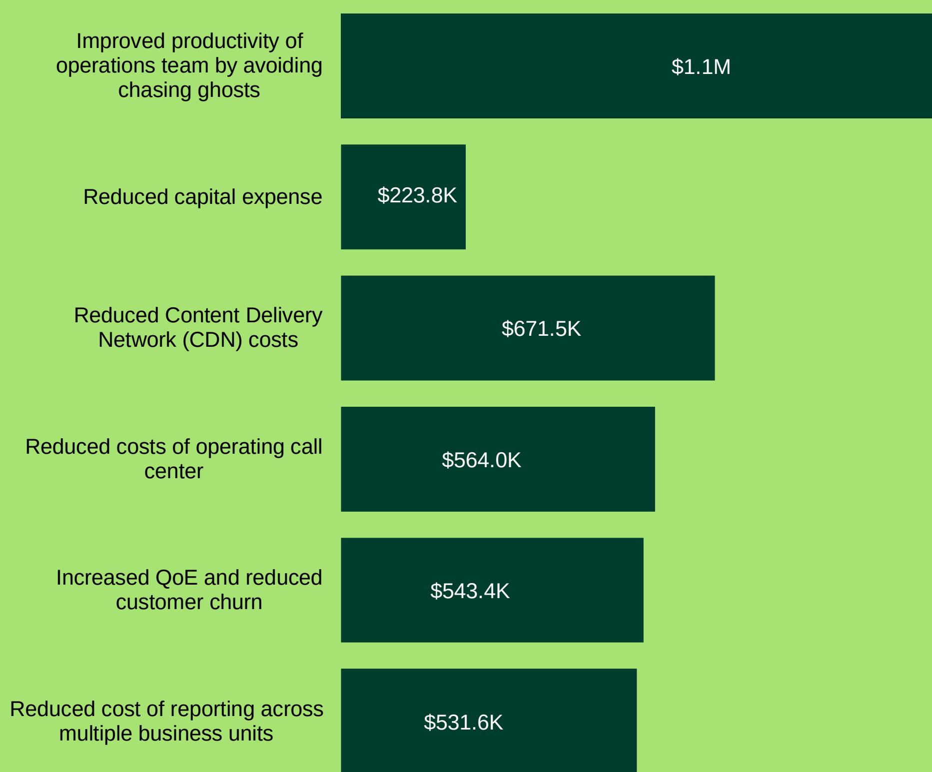
ROI
340%

BENEFITS PV
$3,597,356

NPV
$2,780,171

PAYBACK
<3 months

Benefits (Three-Year)



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 Conviva.

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 Conviva can have on an organization.

DUE DILIGENCE

Interviewed Conviva stakeholders and Forrester analysts to gather data relative to the implementation.

CUSTOMER INTERVIEWS

Interviewed four decision-makers at organizations using Conviva to obtain data with respect to costs, benefits, and risks.

COMPOSITE ORGANIZATION

Designed a composite organization based on characteristics of the interviewed 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 interviewed organizations.

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.

DISCLOSURES

Readers should be aware of the following:

This study is commissioned by Conviva 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 report to determine the appropriateness of an investment in Conviva.

Conviva 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.

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

The Conviva Customer Journey

Drivers leading to the Conviva investment

Interviewed Organizations		
Industry	**Region**	**Interviewee**
Entertainment	North America	VP, engineering
Entertainment	Europe	Head, content delivery platform
Entertainment	North America	SVP, product
Entertainment	Latin America	Director, technology roadmaps

KEY CHALLENGES

All interviewees reported that a lack of real-time performance metrics limited their ability to identify, diagnose, and resolve streaming issues.

The interviewed organizations struggled with common challenges, including:

- **Limited insight into user experience.** Decision-makers used feedback from focus groups, customer support calls, customer surveys, and minimal telemetry from broadband and network delivery to understand their customers' viewing experiences.

  Moreover, engineers had only networkwide telemetry readings, such as packet loss or bandwidth measurements. Conviva provided insight and diagnostic data specific to each individual viewer. The head of the content delivery platform explained, "Customers were complaining, but we didn't have the kind of visibility that we needed to provide assurance that we were going to solve the problem."

- **Dependence on CDN providers to self-report on delivery quality.** Organizations wanted to separate QoE reporting from CDNs, allowing them to compare across providers based on cost and quality. The VP of engineering reported, "Some CDN partners work better in some regions and countries than others."

- **Difficulty in accurately diagnosing service issues.** Limited visibility into service issues made it difficult or impossible to verify the source of problems. The director of technology roadmaps remarked: "We observed that rebuffering increased when we had a sporting event. We thought we had a CDN problem, but it turned out that for a sporting event, more people were pulling out their cell phones to watch."

"The ability to see every single customer and then to see when there are problems enables us to do troubleshooting on problems we would not have otherwise discovered."

Director, technology roadmaps

SOLUTION REQUIREMENTS/INVESTMENT OBJECTIVES

The interviewed organizations searched for a solution that could provide:

- Reliable, comprehensive, third-party performance metrics.
- Customer-level QoE metrics.
- Real-time end-to-end delivery analytics.

COMPOSITE ORGANIZATION

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

Description of composite. This global video-on-demand (VoD) streaming service provides media content to 1 million subscribers. Each subscriber streams an average of 100 hours of media content per year and generates an annual revenue of approximately $100. The organization provides a high-quality ad-supported streaming experience, strong rapid-response customer support, and centralized reporting and delivery analytics across lines of business and subsidiaries.

Deployment characteristics. The organization has global operations, with multiple CDN providers, and has deployed Conviva Experience Insights with Social Insights.

Key assumptions

- **$100M revenue**
- **1 million subscribers**
- **100 hours streamed per subscriber per year**
- **Operates globally**

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 productivity of operations team by avoiding chasing ghosts	$427,500	$427,500	$427,500	$1,282,500	$1,063,129
Btr	Reduced capital expense	$90,000	$90,000	$90,000	$270,000	$223,817
Ctr	Reduced content delivery network costs	$270,000	$270,000	$270,000	$810,000	$671,450
Dtr	Reduced costs of operating call center	$226,800	$226,800	$226,800	$680,400	$564,018
Etr	Increased QoE and reduced customer churn	$218,500	$218,500	$218,500	$655,500	$543,377
Ftr	Reduced cost of reporting across multiple business units	$213,750	$213,750	$213,750	$641,250	$531,565
	Total benefits (risk-adjusted)	$1,446,550	$1,446,550	$1,446,550	$4,339,650	$3,597,356

IMPROVED PRODUCTIVITY OF OPERATIONS TEAM BY AVOIDING CHASING GHOSTS

Evidence and data. Providers of VoD services operate on complex networks with multiple points of failure. Conviva provides managers with a full set of diagnostics from origination to the individual device on which content is viewed. With complete real-time information, managers and analysts at interviewed companies could diagnose problems in far less time, even if the issue originated with the device itself.

- The director of the technology platform explained that a particular brand of television had a memory allocation issue: “When it runs out of memory space, it reloads the TV, so every 13 hours and 22 minutes, we would have playback errors. Anyone who was watching our content would have to go back into the application and restart what they were watching. There is not a reality where I would have seen that without the Conviva data.”
- The head of the content delivery platform reported: “We are now accustomed to a constellation of real-time device data that appears effortlessly and reliably. There is performance monitoring, and there are diagnostics, and we use Conviva for diagnostics to work out what’s going wrong, where, with what client, from what situation, etc.”
- Finally, Conviva’s improved QoE metrics allow managers to rapidly respond to vendors that fail to deliver quality services.

> **“The majority of triaging an incident is the identification of the problem, and then usually fixing the problem is the quickest part. So, by leveraging these QoE tools, you are cutting all that time by at least half.”**
>
> *VP, engineering*

Modeling and assumptions. Based on the customer interviews, Forrester estimates for the composite organization:

- The operations team consists of 15 analysts.
- Each operations team member achieves increased diagnostics productivity of 50%.
- Each operations team member spends approximately 50% of their time on problem diagnostics.
- Each operations team member has a fully burdened annual salary of $120,000.

Risks. The actual improvement in diagnostics cost may vary due to:

- The number of operations team members.
- The frequency of issue resolution.
- The fully burdened annual salary of operations team members.

To account for these risks, Forrester adjusted this benefit downward by 5%, yielding a three-year, risk-adjusted total PV of $1.1M.

Improved Productivity Of Operations Team By Avoiding Chasing Ghosts: Calculation Table

REF.	METRIC	CALCULATION	YEAR 1	YEAR 2	YEAR 3
A1	Analysts on operations team	Composite	15	15	15
A2	Percent of job diagnosing issues	Interviews	50%	50%	50%
A3	Improved productivity	Interviews	50%	50%	50%
A4	Average burdened salary of diagnostics team	Interviews	$120,000	$120,000	$120,000
At	Improved productivity of operations team by avoiding chasing ghosts	A1*A2*A3*A4	$450,000	$450,000	$450,000
	Risk adjustment	↓5%			
Atr	Improved productivity of operations team by avoiding chasing ghosts (risk-adjusted)		$427,500	$427,500	$427,500

REDUCED CAPITAL EXPENSE

Evidence and data. After implementing Conviva, managers reported that, in addition to the reduced time-to-diagnostics, the ability to correctly and specifically identify the cause of the issue meant that they did not make investments in "solutions" that did not address the problem.

Modeling and assumptions. Based on the customer interviews, Forrester estimates for the composite organization:

- The organization avoids capital investment misdirection once a year.
- The organization spends $2 million annually on CDN services.
- Increased CDN bandwidth represents a typical example of the type and magnitude of an avoidable investment.

Risks. The amount of capital investment avoided may vary due to:

- The incremental cost.
- The frequency of incidents avoided.

To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV of $223,817.

> **"We observed that rebuffering increased when we had a sporting event. We thought we had a CDN problem, but it turned out that for a sporting event, more people were pulling out their cell phones to watch."**
>
> *Director, technology roadmaps*

Reduced Capital Expense: Calculation Table

REF.	METRIC	CALCULATION	YEAR 1	YEAR 2	YEAR 3
B1	CDN bandwidth cost	Composite	$2,000,000	$2,000,000	$2,000,000
B2	Percent increase avoided	Interviews	5%	5%	5%
Bt	Reduced capital expense	B1*B2	$100,000	$100,000	$100,000
	Risk adjustment	↓10%			
Btr	Reduced capital expense (risk-adjusted)		$90,000	$90,000	$90,000

REDUCED CONTENT DELIVERY NETWORK COSTS

Evidence and data. Operations teams further benefited from Conviva because of the ability to work with multiple CDNs. Operations team members can monitor in real time, and Precision can optimize CDN selection without the need for operations team members to intervene.

Prior to the investment in Conviva:

- Managers were locked into single vendor contracts with CDNs.
- Managers relied on their CDN partners to report QoE metrics.
- Managers considered the cost of CDN contracts to be too high.

The product development leader stated, “We were able to justify implementing a project like going from a single CDN to multiple CDNs based on data that we get through using Conviva.”

The head of the content delivery platform added, “We can use Conviva to share data with our CDN providers to explain to them where they are failing and where they consistently fail at times.”

> **“Implementing the third-party QoE was the first step to be able to say to our CDN providers, ‘If you are able to deliver that quality, and you are competitive on price, we will give you more traffic.’”**
>
> *VP, engineering*

Modeling and assumptions. Based on the customer interviews, Forrester estimates for the composite organization:

- The composite organization had an annual CDN cost of $2 million prior to adopting Conviva.
- With Conviva metrics in hand, managers negotiate a 50% reduction in annual CDN fees, on average.
- Thirty percent of the savings are attributable to the adoption of Conviva, accounting for efforts managers undertook to achieve this cost reduction.

Forrester applies a risk adjustment to this benefit because:

- Smaller organizations may not achieve the same leverage to negotiate with providers.
- Some organizations may not have multiple quality options for CDN providers.

To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of $671,450.

Reduced Content Delivery Network Costs: Calculation Table					
REF.	METRIC	CALCULATION	YEAR 1	YEAR 2	YEAR 3
C1	CDN costs prior to Conviva	Composite	$2,000,000	$2,000,000	$2,000,000
C2	Precent reduction after implementing Conviva	Interviews	50%	50%	50%
C3	CDN costs after Conviva	C1*C2	$1,000,000	$1,000,000	$1,000,000
C4	Percent attributable to Conviva	Interviews	30%	30%	30%
Ct	Reduced content delivery network costs	C3*C4	$300,000	$300,000	$300,000
	Risk adjustment	↓10%			
Ctr	Reduced content delivery network costs (risk-adjusted)		$270,000	$270,000	$270,000

REDUCED COSTS OF OPERATING CALL CENTER

Evidence and data. Managers reported customer service call center cost savings as an additional benefit of the investment in Conviva.

Modeling and assumptions. Based on the customer interviews, Forrester estimates for the composite organization:

- The call center has a staff of 50 operators, each with a fully burdened hourly rate of $35.
- On average, each operator's time spent answering customer calls decreases by 144 hours annually.

Risks. The amount of capital investment avoided may vary due to:

- The number of call center operators.
- The hourly rate of call center operators.
- The improvement achieved in customer experience.

To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of $564,018.

Reduced Costs Of Operating Call Center: Calculation Table					
REF.	METRIC	CALCULATION	YEAR 1	YEAR 2	YEAR 3
D1	Number of call center operators	Composite	50	50	50
D2	Hourly rate per person	Interviews	$35	$35	$35
D3	Number of hours saved per operator per year	3 hours per week*48 weeks	144	144	144
Dt	Reduced costs of operating call center	D1*D2*D3	$252,000	$252,000	$252,000
	Risk adjustment	↓10%			
Dtr	Reduced costs of operating call center (risk-adjusted)		$226,800	$226,800	$226,800

IMPROVED QOE AND REDUCED CUSTOMER CHURN

Evidence and data. Managers were frustrated by a lack of clarity into quality of experience at the customer level.

- Managers attempted to understand user QoE through channels such as focus groups, social media feeds, and customer surveys.
- Minimal telemetry returned systemwide metrics that couldn't be directly tied to any individual user.
- Customer service agents could not quickly resolve calls, if at all, due to complex delivery systems with multiple points of failure.

The head of the content delivery platform confirmed, "We have done a lot of analysis using Conviva data and found there's a clear correlation between a very small increase in buffering and customer churn."

Modeling and assumptions. Based on the customer interviews, Forrester estimates for the composite organization:

- After implementing Conviva, managers reduce buffering rates substantially, from 5% to 0.4%.
- Before implementing Conviva, customer churn was at 5%.

Risks. Individual organizations may experience a greater or lesser problem with churn than the composite organization modeled. Failure to achieve as great a reduction in buffering would result in less of a benefit.

To account for these risks, Forrester adjusted this benefit downward by 5%, yielding a three-year, risk-adjusted total PV of $543,377.

Increased QoE And Reduced Customer Churn: Calculation Table

REF.	METRIC	CALCULATION	YEAR 1	YEAR 2	YEAR 3
E1	Streaming revenue	Composite	$100,000,000	$100,000,000	$100,000,000
E2	Buffering before Conviva	Interviews	5.0%	5.0%	5.0%
E3	Buffering with Conviva	Interviews	0.4%	0.4%	0.4%
E4	Churn from buffering complaints	Interviews	5.0%	5.0%	5.0%
Et	Increased QoE and reduced customer churn	E1*(E2-E3)*E4	$230,000	230,000	230,000
	Risk adjustment	↓5%			
Etr	Increased QoE and reduced customer churn (risk-adjusted)		$218,500	$218,500	$218,500

REDUCED COST OF REPORTING ACROSS MULTIPLE BUSINESS UNITS

Evidence and data. Managers across each organization wanted to know what content was being viewed, by whom, and through which channel. The managers interviewed for this study reported that different internal stakeholders had reason to monitor content viewership and dissemination across social media.

- Managers faced a burdensome task of gathering data from multiple sources across social media platforms and other sources to report on content views.
- The VP of engineering reported, "As much as we are distributing video on owned and operated, you can imagine that the distribution of clips on … the growing number of social platforms … has been significant, and the consumption on those platforms has been significant as well."

Modeling and assumptions. Based on the customer interviews, Forrester estimates for the composite organization:

- The organization previously relied on 10 analysts, with a fully burdened annual salary of $75,000 each, to provide reporting across business units and subsidiaries.
- Conviva reporting capabilities reduce the amount of time that each analyst spends on reporting by 30%.

> **"The ability to pull down the consumption for streaming content across the growing number of social platforms and consolidate it into a dashboard for all of our affiliates was somewhat labor-intensive. Pulling that down on a weekly or monthly basis, formatting it, is often painful."**
>
> *VP, engineering*

Risks. The actual improvement in reporting time may vary based on:

- The number of analysts preforming this function.
- The number and nature of reporting in an organization.
- The fully burdened salary of the analysts performing this function.

To account for these risks, Forrester adjusted this benefit downward by 5%, yielding a three-year, risk-adjusted total PV of $531,565.

Reduced Cost Of Reporting Across Multiple Business Units: Calculation Table

REF.	METRIC	CALCULATION	YEAR 1	YEAR 2	YEAR 3
F1	Number of analysts required	Composite	10	10	10
F2	Percent of time no longer required to gather data and report	Interviews	30%	30%	30%
F3	Average burdened salary for data analysts	Interviews	$75,000	$75,000	$75,000
Ft	Reduced cost of reporting across multiple business units	F1*F2*F3	$225,000	$225,000	$225,000
	Risk adjustment	↓5%			
Ftr	Reduced cost of reporting across multiple business units (risk-adjusted)		$213,750	$213,750	$213,750

UNQUANTIFIED BENEFITS

Additional benefits that customers experienced but were not able to quantify include:

Better, more reliable development. Development engineers use Conviva to test new products and features before deployment. Conviva provides engineers with clarity of performance at the device level so that developers can resolve issues before users experience them.

The content delivery manager explained: “For instance, we are releasing a new feature. Conviva data shows it will work on X, Y, and Z platform really well, but on platform A, it’s exhibiting much higher rebuffering.”

In discussing this capability, the SVP of product stated: “We’ve been doing it so long that it is really core to our process. It’s been years since we brought something out without it.”

FLEXIBILITY

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

Live event delivery. Conviva increased the confidence of executives to deliver live events. The VP of engineering explained, “We feel confident that we can insert and leverage other partners for our major tentpole events... Conviva has played a role in our ability to have that confidence and to be reactive to any incidents that do come up.”

The SVP of product expanded on that: “There is no tolerance for technical issues when it’s a large-scale live — really any live — event … things where it needs to work and if something goes wrong, having that information in seconds as opposed to minutes is really critical.”

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
Gtr	Cost of Conviva	$120,000	$240,000	$240,000	$240,000	$840,000	$716,844
Htr	Training	$73,080	$10,962	$10,962	$10, 962	$105,966	$100,341
	Total costs (risk-adjusted)	$193,080	$250,962	$250,962	$250,962	$945,966	$817,185

COST OF CONVIVA

Evidence and data. The largest cost is the licensing of Conviva. Conviva licensing costs can vary widely based on many factors such as the configuration of features, contract term, viewing hours volume, and support.

Modeling and assumptions. Forrester assumes that the composite company has:

- A three-year contract including Experience Insights for content and ads, Social Insights, and Precision.
- A subscriber base of 1 million, each of whom views, on average, 100 hours of content per year.

Risks. The actual cost of Conviva may vary due to:

- Product configuration.
- Contract term.
- The amount of support required.
- The viewing hours of subscribers.

To account for these risks, Forrester adjusted this cost upward by 20%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of $716,844.

Cost Of Conviva: Calculation Table						
REF.	METRIC	CALCULATION	INITIAL	YEAR 1	YEAR 2	YEAR 3
G1	Initial integration		$100,000			
G2	Number of subscribers			1,000,000	1,000,000	1,000,000
G3	Viewing hours per person, per year			100	100	100
G4	Cost per million viewing hours (MVH)			$2,000	$2,000	$2,000
Gt	Cost of Conviva	G1+G3*G4	$100,000	$200,000	$200,000	$200,000
	Risk adjustment	↑20%				
Gtr	Cost of Conviva (risk-adjusted)		$120,000	$240,000	$240,000	$240,000

TRAINING

Evidence and data. Conviva interviewees reported that it took some time for analysts to become truly proficient with the breadth of Conviva data.

Modeling and assumptions. Forrester assumes for the composite organization:

- The composite has a team of 20 data analysts.

- The organization achieves a training time of 60 hours on the job, which reflects the learning curve of Conviva.
- The composite organization adds (or replaces) three data analysts yearly.

Risks. The actual cost of training may vary due to:

- The experience level of the analysts.
- The attrition level of analysts.
- The average hourly rate of analysts.

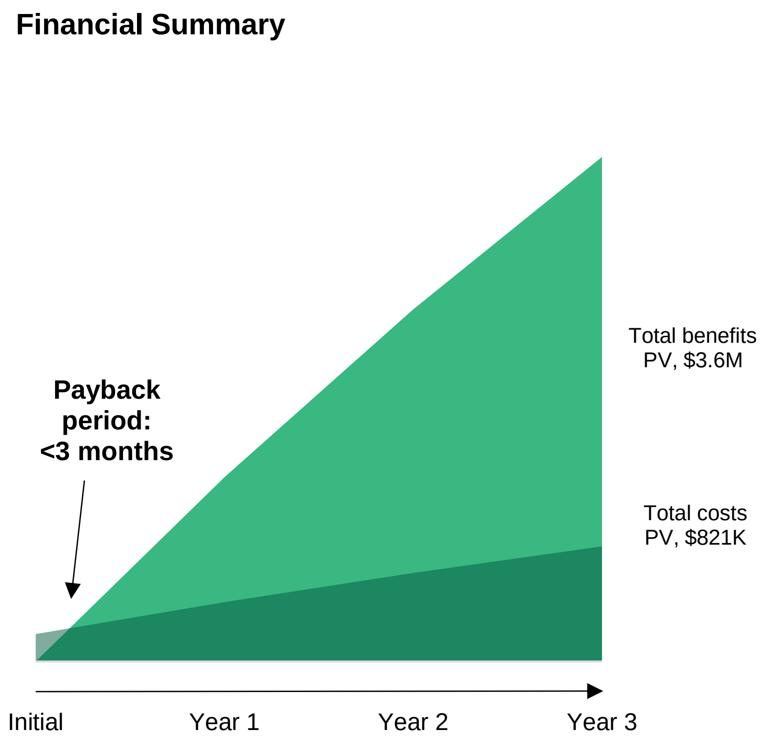
To account for these risks, Forrester adjusted this cost upward by 5%, yielding a three-year, risk-adjusted total PV of $100,341.

Training: Calculation Table

REF.	METRIC	CALCULATION	INITIAL	YEAR 1	YEAR 2	YEAR 3
H1	Data analysts		20	3	3	3
H2	Time to proficiency (hours)		60	60	60	60
H3	Average burdened salary (hourly)	$120,000/2,080	$58	$58	$58	$58
Ht	Training	H1*H2*H3	$69,600	$10,440	$10,440	$10,440
	Risk adjustment	↑5%				
Htr	Training (risk-adjusted)		$73,080	$10,962	$10,962	$10,962

Financial Summary

CONSOLIDATED THREE-YEAR RISK-ADJUSTED METRICS



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	($193,080)	($250,962)	($250,962)	($250,962)	($945,966)	($817,185)
Total benefits	$0	$1,446,550	$1,446,550	$1,446,550	$4,339,650	$3,597,356
Net benefits	($195,721)	$1,195,192	$1,195,192	$1,195,192	$3,389,854	$2,780,171
ROI						340%
Payback period						<3 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.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