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The Total Economic Impact™ Of The Contentstack Headless CMS Platform

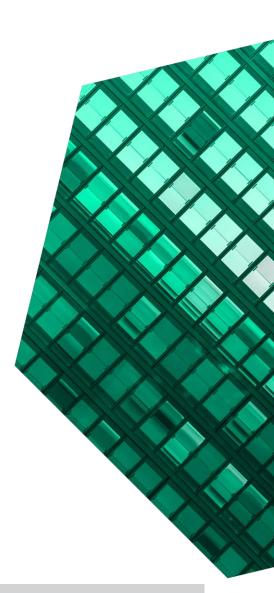
Cost Savings And Business Benefits Enabled By The Contentstack Headless CMS Platform

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Executive Summary

Organizations are increasingly looking for a future-proof content management system (CMS) that is flexible, intuitive, and easy to use by teams of developers and marketers. An effective modern solution that has emerged in the marketplace comes from Contentstack. The Contentstack Headless CMS platform is based on a flexible composable architecture, provides operational efficiencies, allows for near-real-time content updates, and receives effective support from the Contentstack team.

Enterprises have relied on CMSes since the beginning of online presence. With the growing complexity of multiple channels and the need for realtime content updates, the CMS platforms are evolving to provide an agile content-driven digital experience. <u>The Contentstack Headless CMS</u> is a back-end-only CMS that allows its customers to create, update, and deploy their content to any frontend quickly and efficiently.

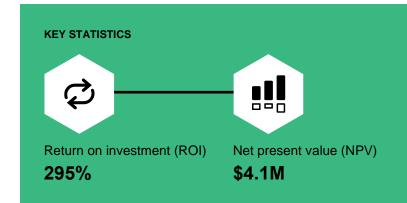
Contentstack commissioned Forrester Consulting to conduct a Total Economic Impact[™] (TEI) study and examine the potential return on investment (ROI) enterprises may realize by deploying the Contentstack Headless CMS platform.¹ The purpose of this study is to provide readers with a framework to evaluate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

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed

Reduction in time to publish

90%





four representatives with experience using the Contentstack Headless CMS platform. For the purposes of this study, Forrester aggregated the interviewees' experiences and combined the results into a single <u>composite organization</u>.

Prior to using the Contentstack Headless CMS platform, these interviewees noted how their organizations used to publish their content through a patchwork of tools, updating content slowly and requiring significant development time. These limitations led to the content publishing workflow being inefficient and lacking flexibility.

After the investment in the Contentstack Headless CMS platform, the interviewees' organizations had access to a central integrated platform that required significantly less development time and that empowered marketing users (content creators, marketers) to publish content considerably faster. Key results from the investment include revenue uplift, significant operational efficiencies in terms of time spent by developers and marketing users, as well as improved workflow.

KEY FINDINGS

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

- Increase in profit. The composite generates additional revenue due to the increase in online traffic and increase in site conversions. The new content experience attracts more customers and generates additional sales. This benefit accounts for \$3 million over three years.
- Eighty percent reduction in content-related development time. The Contentstack Headless CMS platform empowers the marketing users to work with the platform themselves with less assistance from the engineers. This saves the composite organization \$507,000 over three years.
- Ninety percent reduction in time to publish. The Contentstack Headless CMS platform is easy to use and allows marketing users to reduce the amount of manual work and repetitive tasks. This saves the composite organization \$2 million over three years.

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

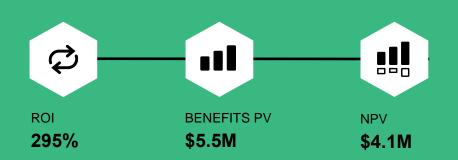
- Ease of integration. The Contentstack Headless CMS platform is easy to integrate with other tools, which allows the organization to be more flexible in terms of its architectural design.
- Position as a future technology leader.
 Contentstack's strategic vision is valuable to customers, and they consider Contentstack to be one of the technology leaders in the field.
- Role as a strategic partner. The organization considers Contentstack to be a strategic partner, helping it make better decisions.

 Customer support. Contentstack provides responsive customer support including an in-app chat option. This level of support speeds up the organization's implementation process and improves marketing users' learning curve.

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

- Software licensing fees. The composite organization pays \$24,000 in initial fees for the implementation and onboarding services. The composite organization pays \$298,500 in annual software license fees.
- Implementation cost. A team of developers deploys the platform with support from Contentstack solution architects. This costs the composite \$501,000.

The representative interviews and financial analysis found that a composite organization experiences benefits of \$5.5 million over three years versus costs of \$1.4 million, adding up to a net present value (NPV) of \$4.1 million and an ROI of 295%.



Benefits (Three-Year)



"With the headless CMS from Contentstack, the content publishing process is simple, easy, and intuitive. It's a differentiator between headless CMSes and nonheadless or monolith CMSes."

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 the Contentstack Headless CMS platform.

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 the Contentstack Headless CMS platform can have on an organization.

DISCLOSURES

Readers should be aware of the following:

This study is commissioned by Contentstack 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 the Contentstack Headless CMS Platform.

Contentstack 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.

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



DUE DILIGENCE

Interviewed Contentstack stakeholders and Forrester analysts to gather data relative to the Contentstack Headless CMS platform.

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INTERVIEWS

Interviewed four representatives at organizations using the Contentstack Headless CMS platform 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 Contentstack Headless CMS Platform Customer Journey

Drivers leading to the Contentstack Headless CMS platform investment

Interviews	Interviews							
Role	Industry	Region	Estimated Revenue					
Head of digital	Travel	Global	\$84 million					
СТО	Fitness	North America	\$25 million					
Chief digital officer	Clothing	North America	\$2.1 billion					
VP of digital	Food	Global	\$1.3 billion					

KEY CHALLENGES

Prior to investment in the Contentstack Headless CMS platform, interviewees' organizations were using a mix of traditional CMS tools, and the overall timeline to publish new content took multiple weeks. There was a challenge of updating the same content across multiple channels, preferably at the same time. Given the demand from their customers of nearreal-time communication, the current process seemed inefficient and prone to error.

The interviewees noted how their organizations struggled with common challenges, including:

- Lengthy development processes. The process
 of updating or publishing new content required
 heavy involvement from the developers' team,
 and it took a long time to complete. A CTO of a
 fitness organization noted: "There are also limited
 design capabilities and a strong dependency on
 the engineering team to get things into
 production. So that lack of end-user or contentcreator self-service, whether that's on the
 operating or the marketing side, was the key
 problem for us. We wanted to make sure to
 empower our business users with the ability to
 update information in near real time."
- Slow publishing. Interviewees stated that the publishing process was quite manual and

required replication of efforts when publishing across channels. A head of digital at a travel organization mentioned, "So the content that was in the system would go on the website, but then if we wanted something ... kind of, say ... email or app, we had to manage that in a different system."

"Speed to market, so to speak, from an information perspective was very, very slow. I would call it weeks to months before we could get new content up on our website."

CTO, fitness industry

Inefficient workflow across teams. Interviewees mentioned that the marketing team was highly dependent on the developers to make the necessary changes before marketers could publish content, and there was a separate workflow for content changes approval. A CTO at a fitness organization stated, "It was very clear that we had a lot of friction between our marketing and content creators and our engineering team."

INVESTMENT OBJECTIVES

The interviewees' organizations searched for a solution that could:

- Provide an easier, better workflow.
- Consolidate into a central system.
- Improve ease of use and flexibility.
- Empower marketers/content creators.
- Produce new content experiences for customers.

"It's become central to what we do. We haven't had a moment's hesitation that we made the right choice. I think the way that we work with Contentstack ... we see them as central to our future growth, and the relationship is they're a partner in our success. They're not just a platform. They want us to be successful, and they will go out of their way to make sure that we are successful as much as they can. So as you can tell, I'm a big fan."

Head of digital, travel industry

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 four interviewees, and it is used to present the aggregate financial analysis in the next section. The

composite organization has the following characteristics.

Description of composite. A global B2C and B2B industry-agnostic organization with \$1 billion in annual revenue. The composite organization uses a mix of traditional CMS tools in its prior state and is looking to transform its content publishing process into a modern, easy-to-use, and flexible approach.

Deployment characteristics. The composite organization decides to implement the Contentstack Headless CMS platform as a central system to support its content publishing process across all channels and to become more responsive in its communications with customers.

Key Assumptions

- \$1 billion annual revenue
- B2B and B2C
- Global organization
- Industry-agnostic
- 10 developers
- 35 marketing users

Analysis Of Benefits

Quantified benefit data as applied to the composite

Tota	Total Benefits									
Ref.	Benefit	Year 1	Year 2	Year 3	Total	Present Value				
Atr	Increase in profit	\$1,200,000	\$1,200,000	\$1,200,000	\$3,600,000	\$2,984,222				
Btr	Productivity savings due to reduction in development time	\$204,000	\$204,000	\$204,000	\$612,000	\$507,318				
Ctr	Savings due to reduction in time to publish	\$792,540	\$792,540	\$792,540	\$2,377,620	\$1,970,930				
	Total benefits (risk-adjusted)	\$2,196,540	\$2,196,540	\$2,196,540	\$6,589,620	\$5,462,470				

INCREASE IN PROFIT

Evidence and data. Interviewees' organizations experienced an increase in profit after implementing the Contentstack Headless CMS platform. They attributed the increase in profit to the increase in online site traffic and increase in site conversions. Their customers seemed to engage with the new content experience, especially given the more frequent updates of the content.

"I think speed to market from a content perspective ... just from ideation to production ... we can stand things up as quick as our control processes will allow, which I think is great."

CTO, fitness industry

 The head of digital at a travel organization mentioned: "We've certainly seen an increase in site conversion since the new platform is in place, and we've had a 35% increase in conversion on the new site since it went live. I think that has to do with redesigns of experience, but fundamental to that was the ease with which we could use Contentstack to create those experiences."

- The CTO at a fitness organization stated: "Our CVR or our conversion rate probably went from 0.3 or 0.4 to 0.7, which is strong in our industry. And so I would say the conversion has increased overall by 40% since we adopted Contentstack."
- The head of digital in travel noted, "We were better able to implement some of the technical SEO, which led to a 67% increase in organic traffic from the old site to the new site."

Modeling and assumptions. For the composite organization, Forrester assumes:

- Percentage of revenue generated online is 40%.
- Of revenue generated online, 4% is attributed to the Contentstack Headless CMS platform.
- Forrester assumes a 10% operating margin.

Risks. Increase in profit may vary depending on the following:

- Percentage of revenue generated online.
- Annual revenue growth.

Results. To account for these risks, Forrester adjusted this benefit downward by 25%, yielding a three-year risk-adjusted total PV (discounted at 10%) of \$3 million.

Increase In Profit									
Ref.	Metric	Source	Year 1	Year 2	Year 3				
A1	Annual revenue	Composite	\$1,000,000,000	\$1,000,000,000	\$1,000,000,000				
A2	Percentage of revenue generated online	Composite	40%	40%	40%				
A3	Revenue increase attributed to Contentstack	Composite	4%	4%	4%				
A4	Operating margin	TEI standard	10%	10%	10%				
At	Increase in profit	A1*A2*A3*A4	\$1,600,000	\$1,600,000	\$1,600,000				
	Risk adjustment	↓ 25%							
Atr	Increase in profit (risk-adjusted)		\$1,200,000	\$1,200,000	\$1,200,000				
	Three-year total: \$3,600,000		Three-year presen	t value: \$2,984,222					

PRODUCTIVITY SAVINGS DUE TO REDUCTION IN DEVELOPMENT TIME

Evidence and data. Interviewees' organizations discussed a reduction in development time associated with the content production and publishing process. All interviewees pointed to the significant developers' time savings and marketing users' ability to make content changes that they had to ask engineering to do previously.

- The head of digital noted, "We think that we reduced that development time by about 80% because previously, even creating the data scheme, it all went to the developers who are now the product owners who are creating those structures and then handing them over to the marketers to build on."
- The CTO noted, "So that's probably 60% to 70% of our content management now done by the end users, meaning the operating and the marketing teams, as opposed to the need to go to the engineering queue, which saves a significant

amount of time when you think about engineering labor hours and the costs associated with that."

Modeling and assumptions. For the composite organization, Forrester assumes:

- It employs 10 developers.
- The average fully burdened salary of a developer is \$120,000.
- The percentage of time spent on development of prior tools is 50%.
- The reduction in development time is 80%.
- Fifty percent of the total time saved is applied directly back to value-generating tasks.

Risks. Productivity savings due to reduction in development time may vary depending on the following:

- Number of developers involved.
- Salaries of developers.

 Recapture of a higher/lower percentage of productivity savings.

Results. To account for these risks, Forrester adjusted this benefit downward by 15%, yielding a three-year risk-adjusted total PV of \$507,000.

Prod	Productivity Savings Due To Reduction In Development Time							
Ref.	Metric	Source	Year 1	Year 2	Year 3			
B1	Number of developers	Composite	10	10	10			
B2	Average annual fully burdened developer salary	TEI standard	\$120,000	\$120,000	\$120,000			
B3	Percentage of time spent on development of prior tools	Composite	50%	50%	50%			
B4	Reduction in development time	Composite	80%	80%	80%			
B5	Savings	B1*B2*B3*B4	\$480,000	\$480,000	\$480,000			
B6	Percentage of productivity savings captured by organization	TEI standard	50%	50%	50%			
Bt	Productivity savings due to reduction in development time	B4*B5	\$240,000	\$240,000	\$240,000			
	Risk adjustment	↓15%						
Btr	Productivity savings due to reduction in development time (risk-adjusted)		\$204,000	\$204,000	\$204,000			
	Three-year total: \$612,000	Three-y	vear present	value: \$507,	318			

SAVINGS DUE TO REDUCTION IN TIME TO PUBLISH

Evidence and data. Interviewees said their organizations experienced a reduction in time spent by marketing users on content publishing. They noted that the Contentstack Headless CMS platform is easy to use and allows marketing users to reduce the amount of manual work and repetitive tasks.

 The head of digital noted: "In terms of publishing content, we think that's about 90% quicker, because we had teams in different areas around the world. We can really democratize that content and facilitate that global enablement of teams to go in and localize that content. So that really improves the efficiency between the teams, and it helped us keep the content consistent, current, and up-to-date."

"I think it's a very intuitive platform. It's one of those that can look quite daunting to begin with, but when you start to use it, it's very simple, and it makes a lot of sense."

- The CTO of a fitness organization said that the process improved dramatically, "I can tell you that we went from a minimum of five business days to change our information in our prior system to being able to cut that down to 30 minutes."
- The VP of digital stated, "We published the stats saying, 'Content publishing process is faster by more than 80% on Contentstack,' but even that is a very conservative estimate to make."

Modeling and assumptions. For the composite organization, Forrester assumes:

- The number of marketing users is 35 and can be content creators or marketers.
- The average fully burdened annual salary of a marketing user is \$74,000.
- Percentage of time spent on prior tools is 80%.
- Reduction in time to publish is 90%.

• Fifty percent of the total time saved is applied directly back to value-generating tasks.

Risks. Productivity savings due to reduction in time to publish may vary depending on the following:

- Number of marketing users involved.
- The salaries of the marketing users.
- Recapture of a higher/lower percentage of productivity savings.

Results. To account for these risks, Forrester adjusted this benefit downward by 15%, yielding a three-year risk-adjusted total PV of \$2 million.

Ref.	Metric	Source	Year 1	Year 2	Year 3
C1	Number of marketing users	Composite	35	35	35
C2	Average annual fully burdened marketing user salary	TEI standard	\$74,000	\$74,000	\$74,000
C3	Percentage of time spent on using prior tools	Composite	80%	80%	80%
C4	Reduction in time to publish	Composite	90%	90%	90%
C5	Savings	C1*C2*C3	\$1,864,800	\$1,864,800	\$1,864,800
C6	Percentage of productivity savings captured by organization	TEI standard	50%	50%	50%
Ct	Savings due to reduction in time to publish		\$932,400	\$932,400	\$932,400
	Risk adjustment	↓15%			
Ctr	Savings due to reduction in time to publish (risk-adjusted)		\$792,540	\$792,540	\$792,540
	Three-year total: \$2,377,620	Thre	e-year present	value: \$1,970,9	30

Savings Due To Reduction In Time To Publish

UNQUANTIFIED BENEFITS

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

Customer support. Interviewees acknowledged the support that they received from the Contentstack team and how that sped up their implementation process and learning.

- Documentation and in-chat support. The head of digital said: "The actual documentation on a Contentstack site is very good as well. So if they need any support, they've got that platform, and the actual in-chat support within the platform itself is really good. It is the best that I've ever experienced."
- Response time. The head of digital said: "They respond very quickly. It seems at any time of the day or night, there's someone looking at those messages, resolving most issues very, very quickly ... very strong customer support, yeah."

Ease of integration. Interviewees noted that the Contentstack Headless CMS platform is easy to integrate with other tools. The head of digital mentioned, "It was one of the reasons we chose headless and particularly Contentstack, because it's agnostic ... that's one of the things that attracted us. The Contentstack back end is open. It can work with anything. Because of the APIs, we can plug it into pretty much any platform."

FLEXIBILITY

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

 Strategic partner. Interviewees stated that they think of Contentstack as their strategic partner, helping them make the right decisions. The head of digital mentioned: "I think the way that we work with Contentstack ... we see them as really central to our future growth, and the relationship is they're a partner in our success. They're not just a platform. They want us to be successful, and they will go out of their way to make sure that we are successful as much as they can."

• Future technology leader. Interviewees mentioned that they valued Contentstack's strategic vision and considered it to be one of the technology leaders in the field. The CTO of a fitness organization noted: "In terms of future technology and Contentstack positioning, I think they're fantastic top leaders. I think they listened to their clients, and they have an ecosystem surrounding them that improves my business. So they take a lot of work off me in terms of diligence and best practices and bringing top leaders together in a way that I find highly valuable."

Flexibility would also be quantified when evaluated as part of a specific project (described in more detail in <u>Appendix A</u>).

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	
Dtr	Software license fees (annual)	\$27,600	\$343,275	\$343,275	\$343,275	\$1,057,425	\$881,274	
Etr	Implementation cost	\$501,120	\$0	\$0	\$0	\$501,120	\$501,120	
	Total costs (risk- adjusted)	\$528,720	\$343,275	\$343,275	\$343,275	\$1,558,545	\$1,382,394	

SOFTWARE LICENSE FEES (ANNUAL)

Evidence and data. The interviewees said that their organizations incurred an annual software license fee for the Contentstack Headless CMS platform usage. Organizations also paid an initial fee to assist with the implementation process.

- The VP of digital at a food industry organization said, "It's definitely worthwhile to engage a solution architect and make sure that you can get the best implementation, because again all of this is built not for day one; this is built for providing for multiple years. So you want to build it in a way that you're reducing your operational effort. Not having a lot of day-to-day operational maintenance is the approach we have taken, and we've made a whole lot of platform tweaks here and there, as the solution architect recommended to us, and we have been better off for it."
- Software license fees include a dedicated customer success team and 24/7 customer support.

Modeling and assumptions. For the composite organization, Forrester assumes:

• The composite organization pays \$24,000 in initial fees for the implementation and onboarding services.

 The composite organization pays almost \$299,000 in annual software license fees.

Risks. Pricing may vary depending on the following:

• The number of users.

"They respond very quickly. It seems at any time of the day or night, there's someone there looking at those messages, resolving most issues very, very quickly."

Head of digital, travel industry

- The number of stacks to be included.
- The bandwidth required.

Results. To account for these risks, Forrester adjusted this cost upward by 15%, yielding a three-year risk-adjusted total PV (discounted at 10%) of \$881,000.

Softv	Software License Fees (Annual)								
Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3			
Dt	Software license fees (annual)		\$24,000	\$298,500	\$298,500	\$298,500			
	Risk adjustment	15%							
Dtr	Software license fees (annual) (risk- adjusted)		\$27,600	\$343,275	\$343,275	\$343,275			
	Three-year total: \$1,057,425	Three	e-year present v	alue: \$881,274					

IMPLEMENTATION COST

Evidence and data. Interviewees described the implementation process as relatively straightforward.

- Implementation periods varied across interviewees due to the complexity of their previous content management tools.
- Developers saved 15% of their time due to strong Contentstack customer guidance and support.
- A CTO at a fitness organization stated, "So a big part of our decision to move forward with Contentstack was the amount of documentation and the ability to integrate, and they've ... in two and a half years that we've been working with them ... evolved that significantly."

Modeling and assumptions. For the composite organization, Forrester assumes:

- Ten developers work on implementation.
- The initial implementation process takes 18 weeks (720 hours).
- The average annual fully burdened salary of a developer is \$120,000 (\$58 per hour).

Risks. The implementation cost may vary due to the following:

• The complexity of the previous systems and the overall architecture.

- The available capacity and skill set of developers.
- The salaries of the developers.

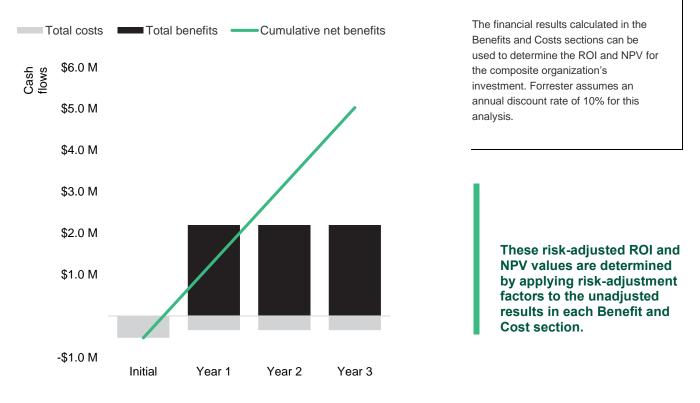
Results. To account for these risks, Forrester adjusted this cost upward by 20%, yielding a risk-adjusted total PV of \$501,000.

Imple	Implementation Cost								
Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3			
E1	Number of developers	Composite	10						
E2	Average fully burdened hourly rate per developer	TEI standard	\$58						
E3	Hours	Composite	720						
Et	Implementation cost	E1*E2*E3	\$417,600	\$0	\$0	\$0			
	Risk adjustment	↑20%							
Etr	Implementation cost (risk-adjusted)		\$501,120	\$0	\$0	\$0			
	Total: \$501,120	Pr	esent value: \$5	01,120					

Financial Summary

CONSOLIDATED THREE-YEAR RISK-ADJUSTED METRICS

Cash Flow Chart (Risk-Adjusted)



Cash Flow Analysis (Risk-Adjusted Estimates)

			,			
	Initial	Year 1	Year 2	Year 3	Total	Present Value
Total costs	(\$528,720)	(\$343,275)	(\$343,275)	(\$343,275)	(\$1,558,545)	(\$1,382,394)
Total benefits	\$0	\$2,196,540	\$2,196,540	\$2,196,540	\$6,589,620	\$5,462,470
Net benefits	(\$528,720)	\$1,853,265	\$1,853,265	\$1,853,265	\$5,031,075	\$4,080,076
ROI						295%

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%.

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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