

FORRESTER®

The Total Economic Impact™ Of Torch.AI's Nexus Platform

Cost Savings And Business Benefits
Enabled By Nexus

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Executive Summary

Data is only valuable if an organization can process the relevant information and gather usable intelligence quickly and effectively. In today's data-driven world, information flows are constantly expanding in volume and complexity, which means that human beings alone cannot accomplish this goal. Organizations need technology that can both scale to their needs and process their data with high speed and efficiency.

Torch.AI's Nexus data intelligence platform allows organizations to deconstruct and analyze data at scale and in real time, while simultaneously minimizing data movement and replication. Nexus is an artificial intelligence (AI)-based solution that makes data instantly accessible and usable, while requiring no changes to IT architecture and minimizing data movement and replication. This data processing approach keeps organizations' technical footprint light and their data maintenance costs low. Regardless of the source, type, or amount of data being utilized, Nexus can seamlessly connect disparate data sources within an existing IT infrastructure to process, transform, and publish that information for machine or human consumption.

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

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed two senior decision-makers from a large organization with experience using the Nexus platform. Forrester used this experience to project a three-year financial analysis.

Prior to using Nexus, the interviewees noted that their organization's data was siloed, without the means to

KEY STATISTICS



Return on investment (ROI)

381%



Net present value (NPV)

\$35.33M

easily share or augment their data across departments. The interviewees sought to change that paradigm, implementing a solution to bridge the gaps between disparate data sources within their organization. The protocols they previously had in place to process and analyze data were outdated, manual, and made it impossible to keep up with the amount of data they had. These limitations meant that the organization had an extensive backlog of analytic work — increasing their overall risk exposure and forcing employees to spend excess time manually reading through and tagging data to prepare it for analysis.

After the investment in the Nexus platform, the decision-makers' organization underwent a true "paradigm shift," as they called it. With Torch.AI, they could process their data almost instantly, a task that used to take more than 20 hours per week when performed manually. With Nexus, they could decompose and distill large data sources into

taggable data objects, increasing shareability across different parts of the organization and reducing duplicate data purchases.

“Before, it was like our data came in different languages. Torch.AI has given us the ability to translate those ‘languages’ and provide a shared platform.”

Chief, AI and data science

“The best way I can describe it is that we’re undergoing a real paradigm shift with Torch.AI. Instead of conducting these investigations every few years, now we’re working to run them continuously and constantly improve.”

Technical director

KEY FINDINGS

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

- **Improved data availability and usability resulted in cost savings of \$37.1 million.** Before Nexus, many employees at the interviewees’ organization spent most of their time collecting and manually prioritizing data sources to prepare them for analysis. This approach took enormous amounts of time away from their primary responsibility, analyzing and drawing conclusions from this data. The Nexus platform was able to perform these data processing tasks instead, reducing the manual data preparation time by 40%.
- **Reduced cost of redundant data purchases totaling \$7.5 million.** Prior to the purchase of Nexus, one of the organization’s big pain points was that it had to buy the same data source multiple times to use it within different areas. The Nexus platform’s capability to curate and contextualize data in real time without altering the authoritative source allowed the organization to seamlessly share data sources across multiple departments and negated the need for redundant data purchases.

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

- **Shifted to a data-centric paradigm.** This benefit represents one of the most impactful outcomes of the organization’s partnership with Torch.AI. Both decision-makers noted their current analytic capabilities with Nexus far exceed their prior system, where hundreds of additional full-time employees did analysis with a paper-based approach. Employing Nexus, an AI-based, machine learning solution, has enabled the organization to process all of its data and run millions of correlations on it daily.
- **Reduced risk exposure.** For the interviewees’ organization, the large case backlog represented a critical organizational risk before it implemented Torch.AI’s Nexus solution. With Nexus, the organization reduced its case backlog and can now take the transformed data and use this new information to continuously monitor and identify risks. Additionally, Nexus enabled the organization to streamline its data architecture by eliminating the need for data replication. These benefits allowed the organization to further reduce risk exposure, decreasing vulnerabilities to hacks and data breaches.

- **Decreased data silos across the enterprise.**

While Forrester was able to quantify the reduction in external data purchases, Nexus also enables information sharing for the numerous internal data sources the agency collects during its normal course of business. This ability to access and manage these data sources across multiple departments — without duplication or migration — helped to decrease organizational silos, improve shareability, and increase overall transparency.

Costs. Risk-adjusted PV costs include:

- **License costs totaling \$7.5 million.** Annual license fees for the organization were spread across four enterprise licenses over a three-year term, averaging \$1.36 million per network deployment per year. The areas where an install is needed within the environment include development, testing, production, and preproduction, across two different networks.
- **Engineering and services fees totaling \$1.8 million.** These engineering and service fees cover three primary categories: implementation, maintenance, and engineering. While implementation is only utilized in the beginning of the customer relationship, the composite pays maintenance fees on an annual basis as part of the service contract.

The interview and financial analysis found the decision-makers' organization realized financial benefits of \$44.61 million over three years versus costs of \$9.28 million, adding up to a net present value (NPV) of \$35.33 million and an ROI of 381%.



ROI
381%

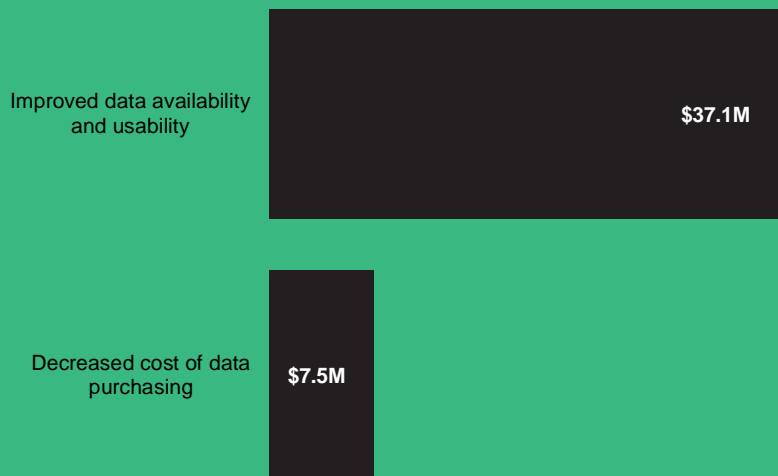


BENEFITS PV
\$44.61M



NPV
\$35.33M

Benefits (Three-Year)



While these two financial benefits were quantified for the ROI model, the interviewees' organization also experienced unquantified but material and meaningful benefits from using Nexus, including data analysis modernization, reduced security risk, and decreased information silos.

TEI FRAMEWORK AND METHODOLOGY

From the information provided in the interviews, Forrester constructed a Total Economic Impact™ framework for those organizations considering a purchase of Torch.AI's Nexus platform.

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

DISCLOSURES

Readers should be aware of the following:

This study is commissioned by Torch.AI 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 Nexus.

Torch.AI 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.

Torch.AI provided the customer name for the interview but did not participate in the interview.



DUE DILIGENCE

Interviewed Torch.AI stakeholders and Forrester analysts to gather data relative to Nexus.



DECISION-MAKER INTERVIEWS

Interviewed two decision-makers from an organization using the Nexus platform to obtain data with respect to costs, benefits, and risks.



FINANCIAL MODEL FRAMEWORK

Constructed a financial model representative of the interview using the TEI methodology and risk-adjusted the financial model based on issues and concerns of the decision-makers.



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 Torch.AI Nexus Customer Journey

■ Drivers leading to the Nexus investment

INTERVIEWEES' ORGANIZATION

Forrester interviewed two decision-makers using Torch.AI's Nexus platform. This organization has the following characteristics:

- It is a large government agency, with thousands of employees operating globally.
- The agency deals with data on a massive scale from many sources, akin to what many large global corporations deal with.
- In addition to the large volumes of data the agency manages, there is a high degree of sensitivity to much of this data, including PII compliance and strict governance controls.
- There is a wide breadth of analytic work to be accomplished within the organization, often drawing from similar data sources that need to be shared across many different departments.

KEY CHALLENGES

The interviewees' organization needed the ability to use all of its data effectively and efficiently. The previous paper-based approach to data processing was costly, time-consuming, error-prone, and untenable in the long term. With large amounts of analytic work sitting in its backlogs, the resources necessary to complete those projects was far beyond what the organization would be able to reasonably hire or afford.

The agency struggled with challenges that are common among similarly large and complex organizations, including:

- **Overly complex data infrastructure.** The amount of data the organization had to manage and analyze was beyond human capabilities. Plus, the siloed nature of their organization meant if data was updated or prepared within one

group, another part of the organization would often not have access to the updated data. The technical director at the organization also highlighted the fact that often a team would do lots of work to prepare a data source for analysis, only to find out that it wasn't even the "right" data. This led to an overly complicated environment with too much backlog for a human workforce to manage. One of the interviewees tried to do the math on how many people they would've needed to hire to do what Torch.AI does. He ultimately said, "We just wouldn't have been able to hire enough people. Hiring and managing all those people would have cost too much anyway."

- **Need for strong data security.** Before implementing Nexus, the organization didn't have strong governance processes in place when it came to managing data. For example, if certain information needed to change a data classification, it would need to undergo a "reliable human review" process that detracted from time available for analytic work.

"Lots of AI systems can do a task, but can they work at our large scale? Can they scan across many data sets or just social media? Once you start asking yourself these types of questions, you quickly understand the challenges we were facing."

Chief, AI and data science

USE CASE DESCRIPTION

The interviewees' organization was seeking to accomplish goals by leveraging the Nexus platform, including:

- Unite the disparate areas of the organization under a common data infrastructure, instead of operating like separate entities without much collaboration.
- Utilize a modern commercial software offering like Nexus that leverages the latest technologies to decrease costs, speed time to knowledge, streamline data architecture, improve analytic quality, and increase overall efficiency.
- Improve the processes and activities the interviewees' organization conducts on a daily basis, including entity resolution, personnel vetting, background investigations, and following up on leads, alerts, and reports.

“We were seeking a lawful, ethical, responsible, appropriate sharing of data across these various agencies with different missions. We needed to be able to see many things at the same time and get a bigger picture sense of what we were dealing with.”

Chief, AI and data science

For this use case, Forrester has modeled benefits and costs over three years.

Analysis Of Benefits

■ Quantified benefit data

| Total Benefits | | | | | | |
|----------------|--|--------------|--------------|--------------|--------------|---------------|
| Ref. | Benefit | Year 1 | Year 2 | Year 3 | Total | Present Value |
| Atr | Improved data availability and usability | \$10,800,000 | \$17,280,000 | \$17,280,000 | \$45,360,000 | \$37,081,893 |
| Btr | Decreased cost of data purchasing | \$1,800,000 | \$3,037,500 | \$4,500,000 | \$9,337,500 | \$7,527,611 |
| | Total benefits (risk-adjusted) | \$12,600,000 | \$20,317,500 | \$21,780,000 | \$54,697,500 | \$44,609,504 |

IMPROVED DATA AVAILABILITY AND USABILITY

Evidence and data. The interviewees’ organization was able to streamline its data processing by using the Nexus platform. This ultimately saved time, so analysts, data scientists, and other employees did not spend as much time manually reading through long PDF documents, often more than 100 pages, and creating Excel macros to help parse the data.

- Interviewees estimated that Nexus helped them cut the amount of time spent on data processing by 40%. This was expected to increase as the organization broadens usage of Nexus to other parts of the organization.
- The interviewees discussed how they relate to the “machine as a teammate” approach that many large organizations are adopting when it comes to AI tools. The technical director explained how implementing Nexus allowed this concept to come to fruition: “Nexus is constantly rebuilding its data models. I don’t know any human being who’d be able to do that kind of thing with that level of granularity and accuracy. Now, we can spend more time doing actual analysis instead of typing in data.”
- The time teams spent on processing prevented them from performing work where they could add value. Now, the Nexus platform can organize information and leverage machine learning

models to establish correlations and relationships within the data.

Modeling and assumptions. For the analysis, Forrester assumes the following:

- The FTEs represent a combination of different job roles — including analysts, agents, data scientists, investigators, and adjudicators.
- The total time saved starts in Year 1 at 25% to account for the organization’s ramp-up time and implementation activities during the first year. The organization begins to reap this full benefit with 40% time savings in Year 2.
- The FTEs’ varying levels of experience is incorporated as a weighted-average fully burdened annual salary of \$150,000.
- The percentage of time savings reinvested in an employee’s job tends to vary by role and seniority. This 50% could be more or less, depending on what the makeup of these job positions is.

“Before Nexus, we essentially had two different systems that were out of sync with one another. Torch.AI solves that problem for us, using data brokerage to ingest the information, decompose it into data objects, tag it, and govern the distribution of it.”

Technical director

Risks. Other organizations may experience a different value for this benefit based on the following factors:

- The weighted average that represents the FTE salary could be different (e.g., higher if the pool of workers is more experienced).
- The organization and its individual employees could spend more or less time on collecting and preparing data.

Results. To account for these risks, Forrester adjusted this benefit downward by 20%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of \$37.1 million.

| Improved Data Availability And Usability | | | | | |
|--|---|--|---|--------------|--------------|
| Ref. | Metric | Source | Year 1 | Year 2 | Year 3 |
| A1 | Number of FTEs | Interviews | 1,200 | 1,200 | 1,200 |
| A2 | FTE fully burdened annual salary | TEI standard | \$150,000 | \$150,000 | \$150,000 |
| A3 | Percentage of time spent on data processing | Interviews | 60% | 60% | 60% |
| A4 | Percentage of total time saved using Torch.AI | Interviews | 25% | 40% | 40% |
| A5 | Percentage of time saved that is reinvested in data processing and analysis tasks | TEI standard | 50% | 50% | 50% |
| At | Improved data availability and usability | $A1 \times A2 \times A3 \times A4 \times A5$ | \$13,500,000 | \$21,600,000 | \$21,600,000 |
| | Risk adjustment | ↓20% | | | |
| Atr | Improved data availability and usability (risk-adjusted) | | \$10,800,000 | \$17,280,000 | \$17,280,000 |
| Three-year total: \$45,360,000 | | | Three-year present value: \$37,081,893 | | |

DECREASED COST OF DATA PURCHASING

Evidence and data. The interviewees lamented how they previously had to purchase data multiple times to utilize it within different departments. Nexus allowed them to break down their data into shareable components that could be easily used by different groups — negating the need for redundant purchasing.

- The technical director described this benefit as follows: “As long as the data was licensed to allow sharing, we now only needed to buy a given data set once. We could then run it through Nexus to break the data down into objects and instantly make it usable for other projects.”
- Since the organization needs to access extremely large data sets and external data budgets are considerable within each distinct area of the organization, the ability to share data among different groups had a significant bottom-line impact.

Modeling and assumptions. For the analysis, Forrester assumes the following:

- The average budgets reflected here are within the range of what the interviewees’ organization

typically allocates for these external data purchases.

- The amount of shareable data increases year over year in the financial model, starting at 30% in Year 1 and growing to double that amount — 60% — in Year 3.

Risks. Other organizations may experience a different value for this benefit, based on the following factors:

- The data budget could vary depending on the type of company and the type of data being purchased.
- The number of departments or business areas in need of the same data could be more or less than that of the interviewees’ organization.
- The percentage of data consolidated by Nexus could also vary, depending on what data sources the organization prioritizes when using the Nexus platform.

Results. To account for these risks, Forrester adjusted this benefit downward by 50%, yielding a three-year, risk-adjusted total PV of \$7.53 million.

| Decreased Cost Of Data Purchasing | | | | | |
|--------------------------------------|--|--------------|--|--------------|--------------|
| Ref. | Metric | Source | Year 1 | Year 2 | Year 3 |
| B1 | Externally sourced data budget per department (pre-Nexus) | Interviews | \$4,000,000 | \$4,500,000 | \$5,000,000 |
| B2 | Total number of departments | Interviews | 4 | 4 | 4 |
| B3 | Externally sourced data budget across departments (pre-Nexus) | B1*B2 | \$16,000,000 | \$18,000,000 | \$20,000,000 |
| B4 | Percentage of redundant external data consolidated by Nexus | Interviews | 30% | 45% | 60% |
| B5 | New data budget for three departments now sharing the fourth department's single data purchase (after Nexus) | B1*(100%-B4) | 2,800,000 | 2,475,000 | 2,000,000 |
| B6 | New externally sourced data budget across all four departments (after Nexus) | B1+(3*B5) | \$12,400,000 | \$11,925,000 | \$11,000,000 |
| Bt | Decreased cost of data purchasing | B3-B6 | \$3,600,000 | \$6,075,000 | \$9,000,000 |
| | Risk adjustment | ↓50% | | | |
| Btr | Decreased cost of data purchasing (risk-adjusted) | | \$1,800,000 | \$3,037,500 | \$4,500,000 |
| Three-year total: \$9,337,500 | | | Three-year present value: \$7,527,611 | | |

UNQUANTIFIED BENEFITS

Additional benefits the customer experienced but was not able to quantify include:

- **A shift to a data-centric paradigm.** Before implementing Nexus, the organization had many data feeds for analysts and investigators to review. But there was no connectivity between these sources, so any conclusions drawn from the data were done through manual, individual human review.
 - **Proactive alerts.** With Nexus in place, analysts could be alerted to data anomalies and correlations automatically, which, from a time and accuracy standpoint, represented a huge shift from their previous approach. The chief of AI and data science gave this hypothetical example to illustrate this point: “Say there was a person’s name on a report. In the old days, we’d have to have someone read through the report to recognize, ‘Hey, this person only appeared on this

report because he is a law enforcement officer.” With Nexus, they can now catalog these data objects from a variety of sources, including public information, and then have Nexus continuously process the data, alerting analysts to a potential issue in a timely manner.

- **Human-driven to data-driven.** With Nexus, the organization is moving toward a completely different and much-improved analytic structure. Instead of starting and ending data reviews on a periodic basis, they are now able to continuously process hundreds of data feeds in the background and keep adding new information to the analysis. It’s a monumental shift from the previous paradigm, where people would determine the prioritization of certain projects based on the chronological order of when the last data review took place. The organization now leverages data to automate and guide case focus,

increasing speed-to-knowledge and analytic quality and efficiency.

- **Reduced risk exposure.** The interviewees discussed two key ways in which Nexus helped to increase and improve the agency's overall security posture:
 - **Decreased backlog.** For any type of organization, a heavy backlog of analytic work could represent an inherent security risk. Information that isn't reviewed and acted upon in a timely manner can lead to missed opportunities, decisions made on stale data, poor outcomes, or even a security breach. For the interviewees' organization, particularly with some of their more sensitive and classified analytic work, missed opportunities could translate to people's lives being at risk. By connecting all of their data where it resides, automating their data processing, and improving analytic capabilities, the organization can get ahead of security risks in a way they weren't able to do previously.
 - **Tightened-up infrastructure.** Before implementing Nexus, the interviewees and their teams couldn't share and manage data across their organization. The data framework had redundancies and they often had to make copies of data sources, which not only increased storage costs but also moved the data further away from its authoritative source, creating stale data. With Nexus, they have a more streamlined and securely managed data infrastructure, and they can trace the data's origin. Because Nexus never makes customer data proprietary information, the organization maintains total control over its information.

- **Decreased data silos to improve shareability and enhance analytic outcomes.** The Nexus platform's ability to connect and share external, purchased data was written about in the Decreased Cost Of Data Purchases benefit; however, this benefit also has a similar application to the agency's many internal data sources. While the cost savings can't be directly tied to budgets, there are significant advantages to the data-sharing enabled by Torch.AI:
 - **Shareability and consumption.** Just as it does with external data, Nexus can also decompose and intelligently tag internal data sources, making them shareable across different groups within the organization while enhancing security.
 - **Connectivity between data sources.** The chief of AI and data science spoke about this benefit: "It takes a major effort to connect two internal data sources without a software platform like Nexus in place. It could honestly take a year or more to make a connection like that."

FLEXIBILITY

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

- **Continuing adjustment to the new, data-centric paradigm.** The interviewees discussed the new paradigm for how employees do their jobs. While Nexus has spawned this paradigm shift, the interviewees acknowledged that there is still work to be done to fully align the organization to the technology. The technical director said: "Due to what we've experienced with Nexus, we want to continue to reinvest and improve in how we conduct analyses, structure our departments, and define people's job roles. It's a big change, and I know we've already said it, but it truly is a paradigm shift. So we've still got adjustments to

make in order to reap the full benefits of this technology.”

- **Broadening to other parts of the enterprise.**
The interviewees began their relationship with Torch.AI with a goal of unifying four key areas of the organization and moving away from their siloed data approach. Down the road, their hope is to expand use of Nexus beyond just their organization. There is a need for connectivity and seamless, secure data sharing across other entities, and Nexus is one of the few platforms with the speed, accuracy, and scalability to facilitate those connections.

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

| Total Costs | | | | | | | |
|-------------|------------------------------|----------|-------------|-------------|-------------|--------------|---------------|
| Ref. | Cost | Initial | Year 1 | Year 2 | Year 3 | Total | Present Value |
| Ctr | License costs | \$0 | \$2,995,344 | \$2,995,344 | \$2,995,344 | \$8,986,032 | \$7,448,977 |
| Dtr | Engineering and service fees | \$32,912 | \$750,640 | \$719,840 | \$689,040 | \$2,192,432 | \$1,827,907 |
| | Total costs (risk-adjusted) | \$32,912 | \$3,745,984 | \$3,715,184 | \$3,684,384 | \$11,178,464 | \$9,276,884 |

LICENSE COSTS

Evidence and data. Licenses represent the majority of the cost of Nexus.

- Four enterprise licenses were needed for each network, with one license across each of the following areas: development, testing, production, and preproduction.
- The organization required two different networks for its data operations.

Modeling and assumptions. Forrester assumes the following for the composite organization:

- The table uses the published GSA pricing for Nexus without any discounts. Torch.AI does provide discounts against its published pricing.
- The TEI assessment is performed over a three-year term across two distinct networks for this

organization. The annual cost of a single network deployment equates to \$1.36 million.

- The number of enterprise licenses does not increase during the three-year period assessed.

Risks. Other organizations may experience a different value for this cost category based on the following factors:

- Different pricing structures for nongovernment entities.
- The number of environments needing an enterprise license.

Results. To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of \$7.45 million.

| License Costs | | | | | | |
|--------------------------------------|--|------------|---------|--|-------------|-------------|
| Ref. | Metric | Source | Initial | Year 1 | Year 2 | Year 3 |
| C1 | Annual per-license cost | Interviews | | \$340,380 | \$340,380 | \$340,380 |
| C2 | Number of licenses needed per network deployment | Interviews | | 4 | 4 | 4 |
| C3 | Annual license costs per single network deployment | C1*C2 | | \$1,361,520 | \$1,361,520 | \$1,361,520 |
| C4 | Number of networks needed | Interviews | | 2 | 2 | 2 |
| Ct | License costs | C3*C4 | | \$2,723,040 | \$2,723,040 | \$2,723,040 |
| | Risk adjustment | ↑10% | | | | |
| Ctr | License costs (risk-adjusted) | | | \$2,995,344 | \$2,995,344 | \$2,995,344 |
| Three-year total: \$8,986,032 | | | | Three-year present value: \$7,448,977 | | |

ENGINEERING AND SERVICE FEES

Evidence and data. Engineering and service fees reflect the number of hours and resources needed from Torch.AI to set up and maintain the Nexus platform.

- Interviewees spoke about how their large enterprise implementation took about eight weeks and was a good experience.
- Torch.AI employees helped with engineering, maintenance, and implementation tasks for Nexus software.

Modeling and assumptions. Forrester assumes the following for the composite organization:

- There are two separate engineering roles performing the service. For simplicity, Forrester uses a blended hourly rate.

- Two members of Torch.AI’s implementation staff spend 10 hours per week over an eight-week period on Nexus implementation.

Risks. Other organizations may experience a different value for this cost category based on the following factors:

- Differing needs for implementation, engineering, and ongoing services.
- Lack of a need to combine the two engineering roles into a single hourly cost.

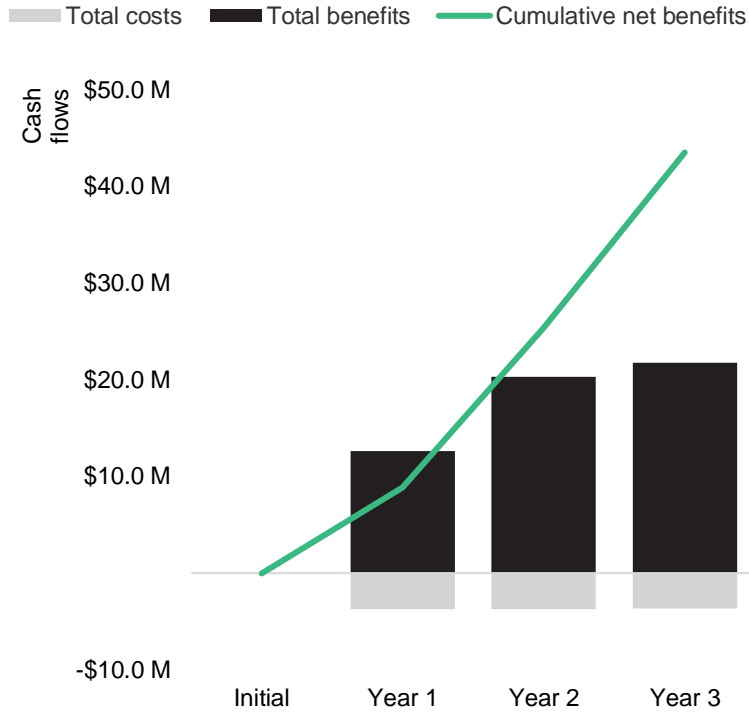
Results. To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year, risk-adjusted total PV of \$1.83 million.

| Engineering And Service Fees | | | | | | |
|--------------------------------------|--|------------|--|-----------|-----------|-----------|
| Ref. | Metric | Source | Initial | Year 1 | Year 2 | Year 3 |
| D1 | Implementation services cost per hour | Interviews | \$187 | | | |
| D2 | Total implementation hours needed | Interviews | 160 | | | |
| D3 | Subtotal: total implementation costs | D1*D2 | \$29,920 | | | |
| D4 | Engineering services cost per hour | Interviews | | \$560 | \$560 | |
| D5 | Total engineering hours needed | Interviews | | 100 | 50 | |
| D6 | Subtotal: total engineering costs | D4*D5 | | \$56,000 | \$28,000 | |
| D7 | Annual per-license maintenance fee | Interviews | | \$78,300 | \$78,300 | \$78,300 |
| D8 | Number of licenses needed | Interviews | | 8 | 8 | 8 |
| D9 | Subtotal: total maintenance fees | D7*D8 | | \$626,400 | \$626,400 | \$626,400 |
| Dt | Engineering and service fees | D3+D6+D9 | \$29,920 | \$682,400 | \$654,400 | \$626,400 |
| | Risk adjustment | ↑10% | | | | |
| Dtr | Engineering and service fees (risk-adjusted) | | \$32,912 | \$750,640 | \$719,840 | \$689,040 |
| Three-year total: \$2,192,432 | | | Three-year present value: \$1,827,907 | | | |

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 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 | (\$32,912) | (\$3,745,984) | (\$3,715,184) | (\$3,684,384) | (\$11,178,464) | (\$9,276,884) |
| Total benefits | \$0 | \$12,600,000 | \$20,317,500 | \$21,780,000 | \$54,697,500 | \$44,609,504 |
| Net benefits | (\$32,912) | \$8,854,016 | \$16,602,316 | \$18,095,616 | \$43,519,036 | \$35,332,620 |
| ROI | | | | | | 381% |
| Payback (months) | | | | | | <6 |

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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