# FORRESTER®

# The Total Economic Impact™ Of Sourcegraph Code Intelligence Platform

Cost Savings And Business Benefits Enabled By Sourcegraph

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# Executive Summary

Developer organizations are increasingly focused on improving productivity, due to the high cost and challenges of finding and retaining high-quality talent. Code intelligence platforms such as Sourcegraph aid developers by providing developer-focused, feature-rich, and high-speed code search and intelligence capabilities across an organization's entire codebase.

Sourcegraph's code intelligence platform (CIP) provides a single, easy-to-use portal to search an organization's entire codebase with response times that clock in at under 1 second. Sourcegraph provides a means for developers to search and understand code, maneuver through code repositories, follow code pathways, understand code update history, dependencies, documentation, etc. Developer tasks, such as debugging code, are optimized to lead to significant developer times savings.

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

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed four representatives from developer corporations who have experience using Sourcegraph. For the purposes of this study, Forrester aggregated the interviewees' experiences and combined the results into a single composite organization, which has tens to thousands of repositories, or repos, multiple programming languages, and multiple code hosts and evolves over time to have 1,000 active Sourcegraph users.

**KEY STATISTICS**

Return on investment (ROI)
**251%**

Net present value (NPV)
**$9.37M**

Prior to implementing Sourcegraph CIP, the interviewees spoke of having ineffective homegrown, open-source, or native code host solutions for code search. These tools were unable to load all repositories, had unacceptable response times, and sometimes even presented inaccurate results.

After investing in Sourcegraph, interviewees shared that a typical developer used Sourcegraph daily for their code search and intelligence needs, saving on average 2-3 hours per week. Sourcegraph was able to load the developer organization's entire codebase while providing split-second response times. Interviewees shared that developers found Sourcegraph easy to use, with capabilities aligned to their needs, useful for developing a basic understanding to code, debugging applications, and identifying best practices and code reuse opportunities. Sourcegraph exceeded interviewees' original expectations with its collaboration capabilities and its facilitation of best practice sharing.

**KEY FINDINGS**

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

- **Cost savings associated with eliminating other code search tools and solutions of $55,000.** The composite organization deprecated all existing open source and homegrown code search tools, saving on maintenance and licensing costs.

- **Reduced developer labor cost for typical code search and intelligence activities of $12,975,000.** Interviewees described an average benefit to developer productivity of between 2-3 hours per week per developer. The composite organization's developers were more productive through faster and more tailored code search and intelligence capabilities. Sourcegraph facilitates a deeper understanding of code, code reuse, best practices for code, accelerating debugging code, and developer collaboration.

- **Labor savings for additional use cases of $74,000.** The composite organization has two quantifiable use cases beyond the typical code search activities that developers see on a day-to-day basis. The first is providing real-time code analysis for the entire codebase and the second is providing incident responses to application outages or other issues requiring rapid resolution.

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

- **Engagement by non-developers.** The composite organization's beneficiaries of Sourcegraph include security, customer service, machine learning, and incident audit teams.

- **Onboarding new developers.** New developers are introduced to Sourcegraph in direct onboarding training or as part of targeted training, such as best practices for debugging, gaining a broad environment understanding, and reducing ramp-up time.

- **Developer, departmental, and organizational collaboration due to Sourcegraph.** Sourcegraph effectively supports direct and indirect collaboration within the overall development organization and facilitates code reuse and best practice sharing.

- **Benefits of Sourcegraph use by developer experience, developer leadership, and other central teams.** The developer-experience team and other central teams are providing value-add services that lead to improvements, such as code health improvements, best practice sharing, code library consolidation, and collaboration facilitation. Developer leadership is gaining insights that lead to organizational improvements.

- **Developer satisfaction improvement related to the Sourcegraph implementation.** Software is a core part of developers' portfolio of tools, and having adequate software contributes to job satisfaction. Interviewees' own internal satisfaction surveys have shown that developers consider Sourcegraph to be a necessary tool.

- **Sourcegraph as a business partner.** The Sourcegraph team shows a commitment to the success of the composite organization.

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

- **Implementation and licensing costs of $3,735,219.** Licensing is straightforward and is based on active Sourcegraph user count. The implementation involves integrating with, and syncing repositories, from code hosts.

The representative interviews and financial analysis found that a composite organization experiences benefits of $13.11 million over three years versus costs of $3.74 million, adding up to a net present value (NPV) of $9.37 million and an ROI of 251%.
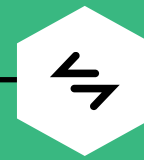
| ROI | BENEFITS PV | NPV | PAYBACK |
|---|---|---|---|
| **251%** | **$13.11M** | **$9.37M** | **<6 months** |

$55,000 – Cost savings associated with eliminating other search tools and solutions

$12,975,000 – Reduced developer cost for typical search and understanding activities

$74,000 – Labor savings for additional use cases

"We have 100+ repos, 5 [integrated development environments], and 7 languages, … in problem tracking, I can trace the code in Sourcegraph through multiple languages, find the issue, and launch the IDE to make the necessary code change."

— Software engineering architect, data science software

## TEI FRAMEWORK AND METHODOLOGY

From the information provided in the interviews, Forrester constructed a Total Economic Impact™ framework for those organizations considering an investment in code intelligence 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 code intelligence platform can have on an organization.

### DISCLOSURES

Readers should be aware of the following:

This study is commissioned by Sourcegraph 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 Code Intelligence Platform.

Sourcegraph 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.

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

**DUE DILIGENCE**
Interviewed Sourcegraph stakeholders and Forrester analysts to gather data relative to code intelligence platform.

**INTERVIEWS**
Interviewed four representatives at organizations using code intelligence 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 Sourcegraph Code Intelligence Platform Customer Journey

Drivers leading to the Code Intelligence Platform investment

| Interviews | | | |
|---|---|---|---|
| **Role** | **Industry** | **Region** | **Number of developers** |
| Developer experience manager | Online travel | Global | 2,500 |
| Software engineering architect | Data science software | Global | 1,000 |
| Senior manager of developer experience | Online software | Global | 2,000 |
| Development tools engineering manager | Online ticketing | Global | 300 |

## KEY CHALLENGES

Prior to implementing Sourcegraph, the interviewees had very similar environments. Interviewees spoke of having typically more than one ineffective homegrown, open-source, or vendor solution for code search. None of these tools had the capacity to load all repositories simultaneously. At the same time, search response times ranged from seconds to minutes. Results were frequently suspect or known to be incorrect or incomplete. Finally, developers found the functionality lacking, i.e., certain query requests were not obtainable, results were in a cumbersome format, and the means to obtain a full understanding was often neither possible nor obvious.

## 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.

**Description of composite.** The composite organization has 1,000 developers using Sourcegraph across multiple organizations that have varying levels of autonomy. There is a central developer experience organization that is empowered to select developer productivity tools. This organization has tens to thousands of repositories and uses multiple programming languages and multiple code hosts.

> **"We had constant complaints about the slowness and the quality of results from our primary prior tool. Developers might wait 20 seconds for a response then have to validate the result set's completeness."**
>
> *Developer experience manager, online travel company*

**Key Assumptions**

- **2 search tools**
- **1,000 developers using Sourcegraph**
- **Tens to hundreds of code repositories**
- **Multiple languages**
- **Multiple IDEs**

# 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 | Cost savings associated with eliminating other search tools and solutions | $22,183 | $22,183 | $22,183 | $66,550 | $55,166 |
| Btr | Reduced developer labor cost for typical search and understanding activities | $3,882,060 | $5,268,510 | $6,778,200 | $15,928,770 | $12,975,848 |
| Ctr | Labor savings for additional use cases | $29,862 | $29,862 | $29,862 | $89,586 | $74,262 |
| | Total benefits (risk-adjusted) | $3,934,105 | $5,320,555 | $6,830,245 | $16,084,906 | $13,105,276 |

## COST SAVINGS ASSOCIATED WITH OTHER SEARCH TOOLS AND SOLUTIONS

**Evidence and data.** Interviewees shared that Sourcegraph either replaced all existing search tools or organizations were in the process of deprecating them. Existing search tools included open-source, homegrown, and legacy vendor tools along with native code host search functionality.

**Modeling and assumptions.** To calculate the value of this benefit, Forrester assumes the following:

- The composite organization has two search tools, which is a combination of an open-source search tool and a homegrown search tool in maintenance mode. Both tools are replaced by Sourcegraph.

- The average maintenance hours per tool is 3 hours per week.

- The average fully burdened hourly rate per end-user employee or developer is $79.

**Risks.** Risks that could impact the realization of this benefit include:

- The amount of search tools that can be eliminated for cost savings.

- The cost of developers and role of IT support staff.

**Results.** To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of $55,166.

> **"Sourcegraph is extremely reliable. Our open-source solution required many more hours to just keep it running, and it was never as fast [as Sourcegraph]."**
>
> *Software engineering architect, data science software*

**Cost Savings Associated With Other Search Tools and Solutions**

| Ref. | Metric | Source | Year 1 | Year 2 | Year 3 |
|------|--------|--------|--------|--------|--------|
| A1 | Number of open-source or homegrown tools | Composite | 2 | 2 | 2 |
| A2 | Maintenance hours that were eliminated per week per tool | Interviews | 3 | 3 | 3 |
| A3 | Average fully burdened developer labor cost per hour | TEI standard | $79 | $79 | $79 |
| At | Cost savings associated with eliminating other search tools and solutions | 52*A1*A2*A3 | $24,648 | $24,648 | $24,648 |
| | Risk adjustment | ↓10% | | | |
| Atr | Cost savings associated with eliminating other search tools and solutions (risk-adjusted) | | $22,183 | $22,183 | $22,183 |
| | **Three-year total: $66,550** | | **Three-year present value: $55,166** | | |

**REDUCED DEVELOPER LABOR COST FOR TYPICAL SEARCH AND INTELLIGENCE ACTIVITIES**

**Evidence and data.** Interviewees shared that Sourcegraph has met, or exceeded, their expectations in helping developers be more productive through faster and more tailored code search and intelligence capabilities. Sourcegraph assists with key components of the developer's activities outside of writing code itself, including understanding, debugging, and identifying and reusing code, learning, and applying best practices, and collaborating with other developers.

- The software engineering architect in data science software shared, "Sourcegraph allows a greater query breadth and is full featured, providing significant productivities and enabling more complete code insights."

- Interviewees described Sourcegraph as a central code intelligence hub that is connected to their code hosts while providing a single view of all relevant repositories of source code, code history, usage by programs, and documentation. They shared that Sourcegraph understands various developer search use cases and effectively facilitates their application, be it

> **"Sourcegraph allows us to explore across our hundreds of repos and our five languages then go into the IDE at the point when you need to do something."**
>
> *Development tools engineering manager, online ticketing*

debugging, seeking broad understanding, code reuse, code health analysis, or quality improvements. The software engineering architect in data science software described a typical scenario: "Sourcegraph connects the different pieces. It allows me to stay in the search flow longer and understand the code more thoroughly."

- Interviewees repeatedly called out how Sourcegraph effectively supports debugging code. Sourcegraph enables precise code navigation to track dependencies and references across repositories.

- Interviewees shared that developers not only are more effective and faster at understanding code, but Sourcegraph also provides a productivity multiplier by enabling direct and indirect collaboration between them.

- The interviewees' development and development supporting organizations are expanding users of Sourcegraph as well as increasing the productivities received from Sourcegraph. Holdouts in the developer community are coming around to using Sourcegraph, and the user base continues to expand to multiple organizations outside of the immediate developer community, such as security or IT operations. Best practices continue to be identified and shared, and collaboration is becoming more widespread. Improvements of code quality and expansion of code reuse also have led to developer productivities increasing over time.

**"Finding the source of the bug takes about half the time as in the past. You're able to track across all these things [repositories, languages, etc.] more easily."**

*Software engineering architect, data science software*

**Modeling and assumptions.** To calculate the value of this benefit, Forrester assumes the following:

- The composite organization has 900 active Sourcegraph users in Year 1, 950 active users in Year 2, and 1,000 active Sourcegraph users in Year 3.

- Labor productivities for the average Sourcegraph user is 1.75 hours per week in Year 1, 2.25 hours

per week in Year 2, and 2.75 hours per week in Year 3.

- The average fully burdened hourly rate per end-user employee or developer is $79.

**Risks.** Risks that could impact the realization of this benefit include:

- The developer organization culture towards corporate tool-sharing and inter-department collaboration.

- The priorities and effectiveness of central developer experience teams.

- The cost of developers.

**Results.** To account for these risks, Forrester adjusted this benefit downward by 20%, yielding a three-year, risk-adjusted total PV of $12,975,848.

**"We had multiple teams starting to use a [a new cloud service] and most were struggling with a very particular use. Someone jumped into Sourcegraph and figured out how someone else had successfully done it, then they shared that with others."**

*Development tools engineering manager, online ticketing*

| Reduced Developer Labor Cost For Typical Search And Understanding Activities | | | | | |
|---|---|---|---|---|---|
| Ref. | Metric | Source | Year 1 | Year 2 | Year 3 |
| B1 | Number of developers using Sourcegraph | Composite | 900 | 950 | 1,000 |
| B2 | Average hours saved per week per developer for typical search and understanding activities | Interviews | 1.75 | 2.25 | 2.75 |
| B3 | Average fully burdened developer labor cost per hour | TEI standard | $79 | $79 | $79 |
| B4 | Productivity recapture rate | Forrester | 75% | 75% | 75% |
| Bt | Reduced developer labor cost for typical search and understanding activities | 52*B1*B2*B3*B4 | $4,852,575 | $6,585,638 | $8,472,750 |
| | Risk adjustment | ↓20% | | | |
| Btr | Reduced developer labor cost for typical search and understanding activities (risk-adjusted) | | $3,882,060 | $5,268,510 | $6,778,200 |
| | **Three-year total: $15,928,770** | | | **Three-year present value: $12,975,848** | |

## LABOR SAVINGS FOR ADDITIONAL USE CASES

**Evidence and data.** Interviewees spoke of additional use case productivities beyond the broader developer productivities that could not be itemized. Other value-add use cases are presented in the unquantified benefits section, such as non-developer benefits and code quality benefits.

- Interviewees described using Sourcegraph in their responses to disruptive application issues that required fast resolution. Teams of developers work on these responses.

- Interviewees spoke of special analysis projects which were due to limitations of other tools, such as slow tool response times or the inability to view the entire codebase. A common use case was to review their entire codebase in one analysis.

**Modeling and assumptions.** To calculate the value of this benefit, Forrester assumes the following:

- The number of incidents requiring a team response is 80 per year.

- The average incident response team size includes 10 developers.

- The average time saved per incident is 30 minutes per team member (.5 hours).

- Quarterly workaround projects are required 4 times per year.

- Workaround projects require one week (40 hours) per project.

- The average fully burdened hourly rate per end-user employee or developer is $79.

> **"During incident responses, a valuable search result can be shared with the entire incident response team. That time has been reduced by 60%."**
>
> *Development tools engineering manager, online ticketing*

**Risks.** Risks that could impact the realization of this benefit include:

- The number and complexity of incidents.

- The required team size per incident.

- The cost of developers.

- The number of workaround projects.

- The average hours required for workaround projects.

**Results.** To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV of $74,262.

| **Labor Savings For Additional Use Cases** | | | | | |
|---|---|---|---|---|---|
| **Ref.** | **Metric** | **Source** | **Year 1** | **Year 2** | **Year 3** |
| C1 | Incident responses count | Composite | 80 | 80 | 80 |
| C2 | Average team size for incident responses | Interviews | 10 | 10 | 10 |
| C3 | Hours saved per incident per team member (hours) | Interviews | 0.5 | 0.5 | 0.5 |
| **C4** | **Incident responses labor savings (hours)** | **C1*C2*C3** | **400.0** | **400.0** | **400.0** |
| C5 | Number of infrequent workaround projects due to slow speed or incomplete repos | Composite | 4 | 4 | 4 |
| C6 | Developer hours per infrequent workaround project | Interviews | 40 | 40 | 40 |
| **C7** | **Hours saved on workaround projects due to slow speed or incomplete repos** | **C4*C5*C6** | **160.0** | **160.0** | **160.0** |
| C8 | Average fully burdened developer labor cost per hour | TEI standard | $79 | $79 | $79 |
| C9 | Productivity recapture rate | Forrester | 75% | 75% | 75% |
| Ct | Labor savings for additional use cases | (C4+C7)*C8*C9 | $33,180 | $33,180 | $33,180 |
| | Risk adjustment | ↓10% | | | |
| Ctr | Labor savings for additional use cases (risk-adjusted) | | $29,862 | $29,862 | $29,862 |
| | **Three-year total: $89,586** | | **Three-year present value: $74,262** | | |

**UNQUANTIFIED BENEFITS**

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

- **Engagement by non-developers.** Interviewees described the usefulness of Sourcegraph by security, customer service, machine learning, and audit teams, among others. Adoption amongst these teams, and across interviewees' organization have varied significantly, with interviewees noting meaningful value when adoption has occurred.

- **Onboarding new developers.** Interviewees shared that new developers are introduced to Sourcegraph in direct onboarding training or as part of targeted training, such as the debugging process. Benefits include a shortened ramp-up time, self-service learning of the codebase, and a more thorough understanding of the development environment.

- **Developer, departmental, and organizational collaboration due to Sourcegraph.** The senior manager of developer experience in the online software company summarized the knowledge sharing and collaboration of Sourcegraph with saying, "Changing [developers'] behavior is the hardest thing to do." Features, such as Sourcegraph's collaboration capabilities are making it more natural for developers to work better together.

- **Benefits of Sourcegraph use by developer experience, developer leadership, and other central teams.** Use of batch changes, code health analysis, best practice sharing, code library consolidations, and other central practices provide benefits that were not quantified by the interviewees' organizations. Developer leadership has gained insights that have led to organizational improvements.

*Voice Of The Customer*

**"New developers reach out less frequently because they can figure out more things themselves. It not only reduces the amount of time one reaches out to others but shortens the communication required when it occurs."**

*Software engineering architect, data science software company*

**"A [new] developer from a major high-tech company told me that he was quickly able to understand the scope of the product code they are responsible for and become highly productive."**

*Developer experience manager, online travel*

**"There are a lot of teams out there, and it is hard for them to consistently collaborate directly. Sourcegraph provides a way to indirectly collaborate that is increasing information sharing."**

*Development tools engineering manager, online ticketing*

**"Sourcegraph is one of the most appreciated things in our portfolio. Sourcegraph has been called out as making developers' lives easier."**

*Senior manager of developer experience, online software company*

**"We have used Sourcegraph's batch changes utility to retire some internal libraries, upgrade library versions, and even changing our URLs that were getting flagged as spam when used in emails. Planning is easier and shorter, communications are improved, and execution is a lot better."**

*Senior manager of developer experience, online software company*

- **Developer satisfaction improvement related to the Sourcegraph implementation.** Interviewees described reviewing developers' employee satisfaction surveys and reading positive things about Sourcegraph. The senior manager of developer experience in the online software company shared that their developer satisfaction numbers are improving, adding that: "Sourcegraph is one of the most appreciated things in our portfolio. [It] has been called out as making developers lives easier." The developer experience manager in the online travel company shared: "In our survey, 87% of developers found Sourcegraph to be very valuable. They have grown accustomed to functionality that would be very hard to reproduce."

- **Sourcegraph as a business partner.** Interviews spoke highly of both the Sourcegraph support organization and their account executive. The senior manager of developer experience in the online software company shared: "They've been really good partners with us. We have shared communication channels with them and sometimes communicate multiple times a day. If

we raise issues, they're quick to respond." The developer experience manager in the online travel company added: "They provide training videos and talks. They have really bent over backwards to drive adoption. That has been an outstanding feature from Sourcegraph."

**"My team is finding patterns across our entire codebase to find best practices to share across the entire developer community. These learnings are being well-received. We have seen instances when code reaches production in days, when it previously would have taken weeks."**

*Development tools engineering manager, online ticketing*

**FLEXIBILITY**

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

- **Effective project transitions and new project onboarding.** Interviewees shared that project reassignments are common for multiple software development roles and that architects and others need to provide context. The development tools engineering manager in online ticketing shared: "Our machine learning engineers get inserted into teams and are often isolated. They use Sourcegraph to get to know what is going on in the team and helps them contribute sooner and better."

**"Sourcegraph helps developers understand things more quickly. They code more effectively and quickly because they understand their surroundings, they understand their requirements, they find code to reuse, etc."**

*Development tools engineering manager, online ticketing*

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

**"My role requires that I work in a bunch of different areas of our code and having a tool like Sourcegraph is super important. I am a power user and an advocate. At this point, I don't know what I would do without it. I personally use it around 50 times a day."**

*Software engineering architect, data science software*

- **Provide developer agility.** With Sourcegraph, developers have access to search across all repositories that they have been given rights to see; this visibility extends to the history of the code, code documentation, and code use.

# 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 | Implementation and licensing cost | $5,500 | $1,425,600 | $1,504,800 | $1,584,000 | $4,519,900 | $3,735,219 |
| | Total costs (risk-adjusted) | $5,500 | $1,425,600 | $1,504,800 | $1,584,000 | $4,519,900 | $3,735,219 |

**IMPLEMENTATION AND LICENSING COST**

**Evidence and data.** Interviewees described implementation as easy and straightforward when connecting to code hosts. Licensing and volume pricing was well understood.

**Modeling and assumptions.** Forrester assumes the following about the composite organization.

- Implementation involves integrating with code hosts.

- Forrester uses standard pricing of 900, 950, and 1,000 active Sourcegraph users over three years.

**Risks.** Forrester identified the following risks associated with the implementation and licensing:

- Implementation effort may vary based on the availability of code hosts.

- Licensing costs may vary based on licensing terms, including volume discounts.

**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 $3,735,219.

## Implementation And Licensing Cost

| Ref. | Metric | Source | Initial | Year 1 | Year 2 | Year 3 |
|------|--------|--------|---------|--------|--------|--------|
| D1 | Implementation cost | Composite | $5,000 | | | |
| D2 | Number of developers using Sourcegraph | Interviews | | 900 | 950 | 1,000 |
| D3 | Annual license cost per developer | Interviews | | $1,440 | $1,440 | $1,440 |
| D4 | Licensing cost | Composite | | $1,296,000 | $1,368,000 | $1,440,000 |
| Dt | Implementation and licensing cost | D1+D4 | $5,000 | $1,296,000 | $1,368,000 | $1,440,000 |
| | Risk adjustment | ↑10% | | | | |
| Dtr | Implementation and licensing cost (risk-adjusted) | | $5,500 | $1,425,600 | $1,504,800 | $1,584,000 |
| | Three-year total: $4,519,900 | | | Three-year present value: $3,735,219 | | |

# Financial Summary

**CONSOLIDATED THREE-YEAR RISK-ADJUSTED METRICS**

## Cash Flow Chart (Risk-Adjusted)
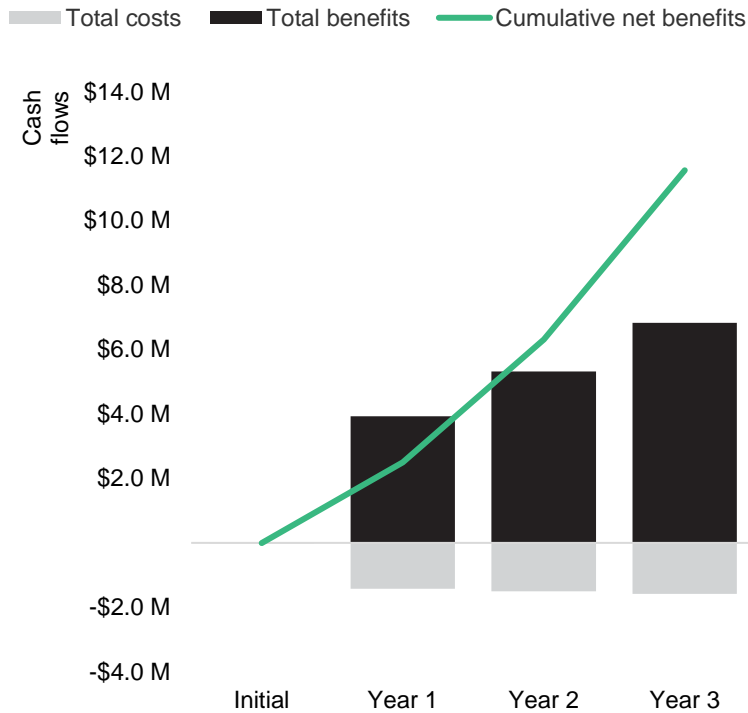


The financial results calculated in the Benefits and Costs sections can be used to determine the ROI, NPV, and payback period for the composite organization's investment. Forrester assumes a yearly discount rate of 10% for this analysis.

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

| Cash Flow Analysis (Risk-Adjusted Estimates) | | | | | | |
|---|---|---|---|---|---|---|
| | **Initial** | **Year 1** | **Year 2** | **Year 3** | **Total** | **Present Value** |
| Total costs | ($5,500) | ($1,425,600) | ($1,504,800) | ($1,584,000) | ($4,519,900) | ($3,735,219) |
| Total benefits | $0 | $3,934,105 | $5,320,555 | $6,830,245 | $16,084,906 | $13,105,276 |
| Net benefits | ($5,500) | $2,508,505 | $3,815,755 | $5,246,245 | $11,565,006 | $9,370,057 |
| ROI | | | | | | 251% |
| Payback period | | | | | | <6 months |

# Appendix A: Total Economic Impact

Total Economic Impact is a methodology developed by Forrester Research that enhances a company's technology decision-making processes and assists vendors in communicating the value proposition of their products and services to clients. The TEI methodology helps companies demonstrate, justify, and realize the tangible value of IT initiatives to both senior management and other key business stakeholders.

## TOTAL ECONOMIC IMPACT APPROACH

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

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

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

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

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

### PRESENT VALUE (PV)

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

### NET PRESENT VALUE (NPV)

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

### RETURN ON INVESTMENT (ROI)

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

### DISCOUNT RATE

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

### PAYBACK PERIOD

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

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