

FORRESTER®

The Total Economic Impact™ Of Stack Overflow For Teams

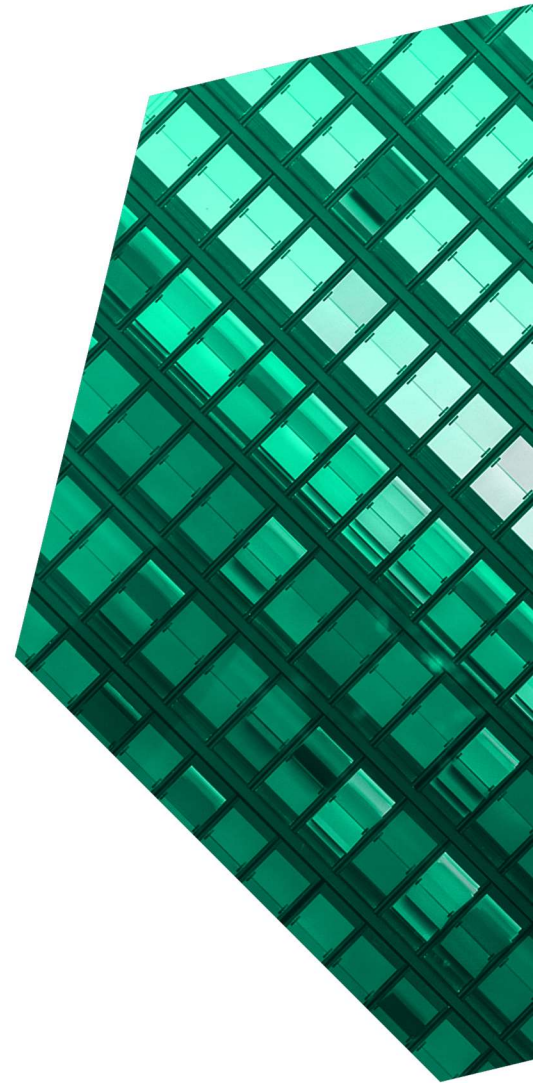
Cost Savings And Business Benefits
Enabled By Stack Overflow For Teams

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ABOUT FORRESTER CONSULTING

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Executive Summary

Stack Overflow for Teams is an internal question-and-answer platform that organizations implement to organically capture their employees' knowledge and insight. The increased information exchange allows developers and technologists to save time from not having to ask and answer repeat questions, enables new hires to become proficient more quickly, and drives innovation. Broad familiarity and satisfaction with the public version of the platform leads to fast adoption and high usage rates of Stack Overflow for Teams.

Across the globe, developers and technologists are already familiar with Stack Overflow. Bringing the solution in-house allows developers and technologists to share internal information, freely collaborate, preserve institutional knowledge, and identify internal experts. [Stack Overflow for Teams](#) is a knowledge base built from questions and answers and topic-specific articles — with everything in one platform and open to the entire developer and technologist workforce. Features like upvoting and the ability of every user to freely contribute ensures content health, while gamification and easy-to-use tagging and search functionalities drive use. The result is an organically built collection of company knowledge that ultimately improves productivity and fosters innovation.

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

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed six representatives of five organizations with experience using Stack Overflow for Teams. For the purposes of this study, Forrester aggregated the interviewees' experiences and combined the results into a single [composite organization](#) that is an

KEY STATISTICS



Return on investment (ROI)

191%



Net present value (NPV)

\$9.46M

organization where 20% of the workforce consists of developers, engineers, or technologists. In this study, employees in these roles are referred to simply as developers.

Prior to using Stack Overflow for Teams, these interviewees noted how their organizations struggled to effectively capture and reuse knowledge. Developer questions were largely asked through private channels like email and messaging apps, which wasted developer time as redundant questions were asked again and again across the organization. Moreover, this valuable insight and institutional memory was not preserved for a larger audience. In general, employees lacked interactive, regularly updated knowledge resources that were easy to navigate.

After investing in Stack Overflow for Teams, the interviewees' organizations saw improved developer productivity and increased innovation. Stack Overflow for Teams led to time saved for employees finding knowledge, time saved for employees providing

knowledge, faster time-to-proficiency for new hires, and an enhanced sense of workplace community.

“Stack Overflow for Teams is pivotal to continued collaboration and breaking down of barriers at our company. This is in direct support of our organizational goals and ultimately helps us deliver value more quickly to our customers.”
Developer advocate, insurance

KEY FINDINGS

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

- **Time saved for employees finding knowledge.** With Stack Overflow for Teams, developers quickly find answers to their questions that have already been asked and answered on the platform. Reusing this existing, high-quality knowledge saves time since developers no longer have to write their own questions and seek out specific subject matter experts. At the composite organization, the number of questions that developers ask colleagues declines by 65% in Year 1 and by 85% in Year 3. These time savings are worth \$2.3 million for the composite organization over three years.
- **Time saved for employees providing knowledge.** With answers to questions preserved and available for reuse on Stack Overflow for Teams, subject matter experts no longer answer so many redundant questions through private channels like email and messaging apps. This saves developers' time

and allows them to remain focused on their core jobs. At the composite organization, the number of questions that developers need to individually answer for colleagues declines by 65% in Year 1 and by 85% in Year 3. These time savings are worth \$9.5 million for the composite organization over three years.

- **Faster time-to-proficiency for new hires.** Stack Overflow for Teams provides a platform for new hires to easily and independently access a wide amount of high-quality knowledge and insight from their colleagues. While utilized by new hires of all types at the composite organization, entry-level or junior developers experience pronounced benefits. For this cohort of new hires, time-to-proficiency improves by 5% in Year 1 and by 9% in Year 3. This translates into \$2.6 million for the composite organization over three years.

“Stack [Overflow for Teams] helps everyone to tap into group company knowledge and connect dots across different teams. That improves things like time-to-market.”

Product owner, software

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

- **Increased innovation.** Stack Overflow for Teams increased collaboration and information exchange among developers at interviewees' organizations. Interviewees said this led to more innovation and improved metrics such as time-to-market.

- **Enhanced workplace community.** Stack Overflow for Teams was a main point of contact and knowledge transfer for colleagues spread across different teams and geographies and who were often working remotely. Interviewees said their employees felt more connected due to Stack Overflow for Teams.
- **Improved employee experience.** Employees at interviewees' organizations had a high degree of satisfaction with Stack Overflow for Teams and readily adopted the solution, which improved their productivity. They found the platform to be easy to use.

The representative interviews and financial analysis found that a composite organization experiences benefits of \$14.42 million over three years versus costs of \$4.95 million, adding up to a net present value (NPV) of \$9.46 million and an ROI of 191%.

“Developers are used to the public version so that made our adoption of Stack Overflow for Teams more seamless. Our employees love it and there is no real reason to choose something else – we know the adoption would never ever be as fast.”

*Director of software development,
AI*

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

- **Internal labor to implement.** A developer at the composite organization dedicates time to the initial implementation of Stack Overflow for Teams. This costs \$28,000 for the composite organization over three years.
- **Licensing costs.** The composite organization pays licensing costs for the use of Stack Overflow for Teams. This totals \$4.9 million for the composite organization over three years.



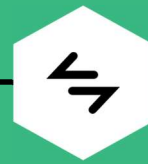
ROI
191%



BENEFITS PV
\$14.42M



NPV
\$9.46M



PAYBACK
**<6
months**

Benefits (Three-Year)



TEI FRAMEWORK AND METHODOLOGY

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

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 Stack Overflow for Teams can have on an organization.

DISCLOSURES

Readers should be aware of the following:

This study is commissioned by Stack Overflow 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 Stack Overflow for Teams.

Stack Overflow 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.

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



DUE DILIGENCE

Interviewed Stack Overflow stakeholders and Forrester analysts to gather data relative to Stack Overflow for Teams.



INTERVIEWS

Interviewed six representatives of five organizations using Stack Overflow for Teams 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 Stack Overflow For Teams Customer Journey

■ Drivers leading to the Stack Overflow for Teams investment

Interviews				
Role	Industry	Revenue	Total Employees	Developers
VP of technology	Financial services	\$15 billion	70,000	10,000
Product owner	Software	\$30 billion	120,000	40,000
Director of software development	AI	\$1 billion	3,000	1,000
Developer advocate	Insurance	\$50 billion	40,000	2,000
Knowledge strategist	Professional services	\$10 billion	18,000	7,000
Instructional engineer	Professional services	\$10 billion	18,000	7,000

KEY CHALLENGES

Before deploying Stack Overflow for Teams, interviewees' organizations had knowledge repositories such as best-practice pages and wikis. Developers often needed to ask their colleagues questions through private channels like email and messaging apps. The interviewees noted how their organizations struggled with common challenges, including:

- **Difficulty finding knowledge.** Interviewees said developers at their organizations faced difficulty locating knowledge and getting answers to their questions. There were disparate repositories and resources to navigate, and it was time-consuming to receive information directly from subject-matter experts.
- **Time wasted answering repetitive questions.** Subject matter experts at interviewees' organizations had to repeatedly answer the same questions from their colleagues. This was a time sink that prevented experts from focusing on their core roles, and the frequent interruptions were simply frustrating. The director of software

development in AI said, "Our employees were frequently interrupted by questions and losing focus."

- **Failure to preserve institutional knowledge.** When developers did share knowledge and insights with colleagues at interviewees' organizations, it was often done through private channels and could not be shared broadly or reused in a meaningful way. The product owner in software explained, "The developer gets an email from a colleague that answers the question, but then the knowledge dies right there."
- **Need to get new hires up to speed more quickly.** Effective resources for new hires to onboard, train, and become proficient were somewhat lacking at interviewees' organizations. Interviewees said their new hires needed access to the best knowledge and more self-service options as they began at the company and had new functions, practices, and jargon to get accustomed to using.

- **Siloed employees lacking collaborative environments.** Interviewees said their developers were too segmented, and they sought ways to foster collaboration and knowledge exchange among them. Interviewees felt that accomplishing this would ultimately allow their organizations to deliver value to their customers more quickly.

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 six interviewees and is used to present the aggregate financial analysis in the next section. The composite organization has the following characteristics:

Description of composite. The composite organization is a large enterprise with an annual revenue of \$20 billion and 50,000 employees, of which 10,000 are developers, engineers, or technologists. Prior to using Stack Overflow for Teams, developers asked an average of one question per month and, across all developer questions, most of them were redundant. It takes 15 minutes for developers to ask a question, and 30 minutes to answer a question. A subset of developers who are subject-matter experts are more often looked to for answers to questions. The composite organization regularly onboards new developers, and every year 400 of them are for entry-level or junior positions.

Deployment characteristics. The composite organization utilizes the cloud version of Stack Overflow for Teams, and implementation, content seeding, and change management efforts require the dedication of one internal FTE over the course of two months. The 10,000 developers, engineers, and technologists at the organization are Stack Overflow for Teams users. Some are active participants who regularly ask and answer questions on the platform, while others use it on occasion, primarily to consume

knowledge. At the composite organization, Stack Overflow for Teams coincides with several knowledge repositories such as best-practice pages, wikis, and shared folders with learning content, as well as private channels for information exchange like email and messaging apps.

Key assumptions

- **\$20 billion in annual revenue**
- **50,000 employees**
- **10,000 developers**

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	Time saved for employees finding knowledge	\$819,000	\$945,000	\$1,071,000	\$2,835,000	\$2,330,195
Btr	Time saved for employees providing knowledge	\$3,334,500	\$3,847,500	\$4,360,500	\$11,542,500	\$9,487,224
Ctr	Faster time-to-proficiency for new hires	\$760,240	\$1,064,336	\$1,368,432	\$3,193,008	\$2,598,867
	Total benefits (risk-adjusted)	\$4,913,740	\$5,856,836	\$6,799,932	\$17,570,508	\$14,416,286

TIME SAVED FOR EMPLOYEES FINDING KNOWLEDGE

Evidence and data. Developers at interviewees' organizations used Stack Overflow for Teams to find the answers to their questions. This made them more productive as they could quickly locate existing and high-quality answers on Stack Overflow for Teams rather than taking the time to draft their own questions and directly reach out to internal experts or other colleagues. In addition to time saved from avoided questions, Stack Overflow for Teams made it easier to access knowledge in general at interviewees' organizations. Information previously limited to a small group was now preserved and available for reuse on the platform.

- Across interviewees' organizations, approximations of the average number of questions their developers asked per month prior to Stack Overflow for Teams ranged from less than one to around five. Interviewees estimated the average time it took for their developers to ask a question varied from about 10 minutes to 40 minutes. Interviewees said that finding an existing question and answer in Stack Overflow for Teams only took a few minutes.
- All interviewees reported that Stack Overflow for Teams reduced the number of questions that

their developers needed to take the time to ask, since those questions were often already asked and answered on the platform. Most interviewees were able to quantify this reduction, and the estimated reduction in developer questions asked because of Stack Overflow for Teams ranged between 65% to 85%.

- Interviewees explained that their developers benefited further from immediately attaining the knowledge they needed. Prior to using Stack Overflow for Teams, they would often need to wait hours and sometimes even days before a subject matter expert provided an answer.

“My favorite benefit of Stack Overflow [for Teams] is that all the questions and answers are in one central location. Everything is very searchable, and the tagging taxonomy works like a charm.”

Knowledge strategist, professional services

- Interviewees said their employees found Stack Overflow for Teams engaging and straightforward. They explained the upvoting feature was heavily used, reinforcing the quality of answers and driving interaction on the platform. Additionally, the search functionality and use of tags made finding relevant content easy.
- The product owner in software stated: “The simplicity and gamification of Stack Overflow [for Teams] keeps our employees’ attention. There are questions. There are answers. You upvote, and the best answers go to the top. And users gain reputation.”
- Interviewees singled out additional Stack Overflow for Teams features that made for a better user experience. For example, users could stay logged in permanently for ease of use and could toggle the search option to include external results from the public version of Stack Overflow.
- In addition to avoided questions, interviewees reported that developers could more easily find information in general due to Stack Overflow for Teams. The platform did not replace existing knowledge repositories like wikis and best-practice pages at interviewees’ organizations, but instead served to connect them as users linked to these repositories as appropriate. Some interviewees reported that internal survey data indicated that employee satisfaction regarding document discoverability improved after implementing Stack Overflow for Teams.
- Relatedly, interviewees said knowledge was simply more accessible at their organizations because of Stack Overflow for Teams. Interviewees said the platform served to democratize knowledge across their organizations and helped to support a culture of acquiring new knowledge or job skills.

- Interviewees said the adoption rate of Stack Overflow for Teams was strong because their employees found it easy to use, experienced benefits, and were already familiar with and liked the public version of Stack Overflow.

“Stack Overflow [for Teams] helps connect our employees to cutting-edge information that they need to best do their jobs. They didn’t have access to this information previously or, at most, had only much slower access to it.”

Developer advocate, insurance

Modeling and assumptions. For the composite analysis, Forrester assumes that:

- 10,000 developers are Stack Overflow for Teams users.
- Prior to using Stack Overflow for Teams, these developers asked an average of one question that required asking a colleague to provide an answer.
- On average, asking a question takes 15 minutes. This does not include the cycle time of waiting for an answer; while that can impact productivity, Forrester assumes developers had enough else to work on while waiting for a response.
- Due to Stack Overflow for Teams, many of these questions no longer need to be asked because the question was already asked and answered in Stack Overflow for Teams and this knowledge can be reused. The percentage decrease in questions needing to be asked is 65% in Year 1, 75% in Year 2, and 85% in Year 3. There is a

continual percentage decrease across these three years as usage as well as the number of existing questions and answers increases.

- On average, finding an existing question and answer in Stack Overflow for Teams takes 5 minutes.
- The average fully burdened salary for these employees is \$70 per hour.

“Stack Overflow [for Teams] is all about discoverability. I can go to one place and ask questions and get answers without having to search 12 different repositories. Before Stack [Overflow for Teams], we had to do that, and it was very frustrating.”

VP of technology, financial services

“All our developers and engineers already knew about Stack Overflow. Adoption was really good. Ramp-up was almost instantaneous. The stampede came in and just kept growing.”

Knowledge strategist, professional services

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 \$2.3 million.

Risks. The benefit of time saved for employees finding knowledge will vary based on:

- The processes in place to ask and receive answers to questions prior to using Stack Overflow for Teams.
- The number of questions asked across developers and the average time it takes to ask them.
- The level of user engagement on Stack Overflow for Teams.
- The amount and quality of the answers and knowledge shared on Stack Overflow for Teams.
- The average fully burdened salary for developers asking questions.

Time Saved For Employees Finding Knowledge

Ref.	Metric	Source	Year 1	Year 2	Year 3
A1	Developers who are Stack Overflow for Teams users	Composite	10,000	10,000	10,000
A2	Average questions asked per month per these developers prior to Stack Overflow for Teams	Interviews	1	1	1
A3	Total questions asked per month prior to Stack Overflow for Teams	A1*A2	10,000	10,000	10,000
A4	Reduction in questions asked because of Stack Overflow for Teams	Interviews	65%	75%	85%
A5	Number of questions no longer asked each month because of Stack Overflow for Teams	A3*A4	6,500	7,500	8,500
A6	Average time it takes to ask a question (minutes)	Interviews	15	15	15
A7	Average time it takes to find a question already in Stack Overflow for Teams (minutes)	Interviews	5	5	5
A8	Time saved per year because of Stack Overflow for Teams (hours)	$A5*(A6-A7)/60*12$	13,000	15,000	17,000
A9	Fully burdened hourly salary of developer asking questions	TEI Standard	\$70	\$70	\$70
At	Time saved for employees finding knowledge	A8*A9	\$910,000	\$1,050,000	\$1,190,000
	Risk adjustment	↓10%			
Atr	Time saved for employees finding knowledge (risk-adjusted)		\$819,000	\$945,000	\$1,071,000
Three-year total: \$2,835,000			Three-year present value: \$2,330,195		

TIME SAVED FOR EMPLOYEES PROVIDING KNOWLEDGE

Evidence and data. With answers to questions preserved and available for reuse, Stack Overflow for Teams prevented repeat questions from being asked at interviewees’ organizations. Developers with subject-matter expertise saved time because they no longer had to answer so many redundant questions through email, messaging apps, and other channels where the knowledge could not effectively be used by others in the future.

- Interviewees reported that the reduction in developer questions because they were already asked and answered in Stack Overflow for Teams — which interviewees who could quantify

this metric estimated to be between 65% and 85% — led to an equivalent reduction in the number of individual answers that needed to be provided. Interviewees’ estimations of the average time it took developers to provide one of these answers varied from 15 minutes to more than an hour.

- In addition to the direct time savings from no longer having to draft answers to so many questions, interviewees said their developers saved additional time from a lack of interruption. Although not quantified for this study, interviewees felt that a lack of context switches

and the ability to stay in flow was a real benefit that further increased developer productivity.

- Interviewees emphasized that just as adoption of Stack Overflow for Teams was high for developers needing to find knowledge, it was also high for those providing it. They said this made the platform an engaging and rich source of knowledge that provided significant value for their organizations.
- The developer advocate in insurance said: “Adoption of Stack Overflow for Teams exceeded our most ambitious estimations. Our employees aren’t feeling ‘yet another tool syndrome’ or any fatigue. No one prefers the way things used to be.”
- Interviewees said that specific gamification features drove the use of Stack Overflow for Teams by developers who answered questions. The VP of technology in financial services elaborated: “Because Stack Overflow [for Teams] is gamified in some respects, it makes people feel like their contributions are being rewarded. There’s reputation, badges, and leaderboards. I think that’s what makes it different. It builds communities, and those communities are helping each other and organically building that frequently-asked-questions database for our organization.”
- Interviewees also explained that their employees had an incentive to engage with and answer questions on Stack Overflow for Teams because it saved them time in the long run. They said subject-matter experts enjoyed providing their expertise once to be used and recognized on Stack Overflow for Teams, but they did not want to provide the same answer again and again on private messaging channels. Developers could also follow tags and receive automatic notifications, making the platform easier to use.

“The biggest benefit from Stack Overflow [for Teams] that we can quantify is productivity gains from knowledge reuse. Our subject-matter experts are willing and happy to answer a question on Stack Overflow [for Teams] because it lets them avoid answering the same thing over and over again.”

Developer advocate, insurance

- Interviewees said Stack Overflow for Teams was used for all types of questions and answers that developers had at their organizations, but they noted that particular teams saw especially strong improvements in efficiency due to a reduction in repeat questions. For instance, some interviewees said their teams involved in access management as well as product installation were frequently overwhelmed by redundant questions, and previous strategies to prevent this largely failed. However, after the organizations implemented Stack Overflow for Teams, the teams told all colleagues with questions for them to first check Stack Overflow for Teams, and if the question was not yet posted, then to ask it there and tag it appropriately.
- The value of Stack Overflow for Teams was not just the sheer volume of answers avoided. Interviewees stressed that the platform preserved knowledge of many experts, including those with very deep and specialized skill sets. More generally, interviewees explained that Stack Overflow for Teams served as a diverse knowledge repository, captured institutional

memory, and identified internal subject-matter experts.

- The knowledge strategist in professional services said: “It’s our only tool that helps us find subject-matter experts in the company. They earn reputation points, and we get to see who actually has answers to questions.” The product owner in software said: “You can identify expertise directly by clicking on a certain tag and seeing who the top contributors are. And it’s not because they say they are, it’s because the community says they are.”
- Some interviewees explained that on occasion, insights into subject-matter expertise were used to nudge employees to the right growth opportunities. Others observed that it addressed a desire for employees to receive recognition for their skills and knowledge.
- Interviewees said that Stack Overflow for Teams also retained the knowledge of subject-matter experts who had left their organizations, allowing their insights to be reused into the future.

- On average, an answer takes one developer 30 minutes to provide.
- The average fully burdened salary for these employees answering questions is \$95 per hour.

Risks. The benefit of time saved for employees providing knowledge will vary based on:

- The processes in place to receive questions and answer them prior to Stack Overflow for Teams.
- The number of answers provided across developers and the average time it takes to provide them.
- The level of user engagement on Stack Overflow for Teams. Interviewees explained that in some cases, it was important for the organization or team to direct colleagues to ask questions in Stack Overflow for Teams as opposed to other channels.
- The amount and quality of the answers and knowledge shared on Stack Overflow for Teams.
- The average fully burdened salary for developers answering questions.

Questions individually asked and answered

65% to 85% reduction

Modeling and assumptions. For the composite analysis, Forrester assumes that:

- The same questions that are not asked due to Stack Overflow for Teams are similarly not answered due to Stack Overflow for Teams. There are 6,500 avoided answers in Year 1, 7,500 in Year 2, and 8,500 in Year 3. Prior to Stack Overflow for Teams, these questions would have required individualized answers.

“Employees are telling me that they answer a question once in Stack Overflow [for Teams] and no one is asking again. So, they’re saving time not having to answer questions, and there are less interruptions and context switches.”

*Director of software development,
AI*

Results. To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV of \$9.5 million.

Time Saved For Employees Providing Knowledge					
Ref.	Metric	Source	Year 1	Year 2	Year 3
B1	Number of questions each month no longer asked and no longer needing an individualized answer because of Stack Overflow for Teams	A5	6,500	7,500	8,500
B2	Average time it takes to answer a question (minutes)	Interviews	30	30	30
B3	Time saved per year because of Stack Overflow for Teams (hours)	$B1*B2/60*12$	39,000	45,000	51,000
B4	Fully burdened hourly salary of developers answering questions	TEI Standard	\$95	\$95	\$95
Bt	Time saved for employees providing knowledge	$B3*B4$	\$3,705,000	\$4,275,000	\$4,845,000
	Risk adjustment	↓10%			
Btr	Time saved for employees providing knowledge (risk-adjusted)		\$3,334,500	\$3,847,500	\$4,360,500
Three-year total: \$11,542,500			Three-year present value: \$9,487,224		

FASTER TIME-TO-PROFICIENCY FOR NEW HIRES

Evidence and data. Interviewees’ organizations used Stack Overflow for Teams as a tool to help new hires onboard and become fully proficient sooner. While a beneficial tool for new hires of all types, time-to-proficiency especially improved among entry-level or junior developers. With Stack Overflow for Teams, interviewees explained that this cohort got up to speed and started providing value more quickly.

- Interviewees said that all new hires could use Stack Overflow for Teams to help become fully proficient, but they felt the benefit was more pronounced and quantifiable among entry-level or junior hires. Among interviewees who could quantify the benefit among this cohort, estimates of the reduction in time-to-proficiency ranged from 3% to 10%. Interviewees said this meant these new hires could, for instance, deliver their first feature more quickly.

“With Stack Overflow [for Teams], entry-level hires are providing value more quickly. Their time-to-first-feature-delivered is sooner. They can self-service answers to their questions and come to resolutions. They don’t have to wait in a centralized queue.”

Developer advocate, insurance

- Stack Overflow for Teams offered new hires high-quality knowledge straight from the subject-matter experts at their new organizations. The knowledge strategist in professional services provided examples of how new hires use the platform to get up to speed: “New hires use Stack Overflow [for Teams] to ramp up on the developer workflow [by] installing packages,

creating containers, troubleshooting, [and] getting started with different systems.”

- Stack Overflow for Teams also enabled new hires to immediately receive answers to many of their questions. This drove productivity because, in some cases, waiting for an answer limited what they could do. More broadly, Stack Overflow for Teams facilitated the long-term goal of more self-service at interviewees’ organizations in contrast to directing all issues to a subject-matter expert through a private channel.
- Interviewees said Stack Overflow for Teams had added value as remote work became a permanent reality at their organizations. New hires often lacked traditional office interactions that were conducive to asking questions of colleagues. However, with Stack Overflow for Teams, there was a venue to engage with the knowledge and insight of experienced colleagues.
- Stack Overflow for Teams also helped new hires understand who to speak with about specific topics and sometimes build more personal and one-on-one relationships over time. The instructional engineer in professional services added that with Stack Overflow for Teams, new hires can “easily locate information they need and have an environment where they can exchange ideas.”

- Interviewees said that new hires at their organizations have a lot to take in, but Stack Overflow was something almost all of them had some familiarity and comfort with. The developer advocate in insurance said: “It is the de facto standard. It’s not something we have to teach new hires. We just say, ‘We have an internal Stack Overflow. You know how to use it, so go and use it.’ It’s that simple.”
- Not only was it relatively easy to get new hires at interviewees’ organizations to use Stack Overflow for Teams to consume knowledge, but because of existing familiarity with the platform, they could also quickly become active contributors.

Modeling and assumptions. For the composite analysis, Forrester assumes that:

- Among developer new hires each year, 400 are for entry-level or junior positions.
- Prior to Stack Overflow for Teams, the time-to-proficiency for these new hires was 1,040 hours, or six months.
- Due to Stack Overflow for Teams, the time-to-proficiency for these new hires decreases by 5% in Year 1, by 7% in Year 2, and by 9% in Year 3.
- The average fully burdened salary for these new hires is \$43 per hour.

Risks. The benefit of faster time-to-proficiency for new hires will vary based on:

- Processes and tools in place for entry-level or junior new hires to become proficient prior to Stack Overflow for Teams.
- The amount and quality of the answers and knowledge shared on Stack Overflow for Teams applicable to entry-level or junior new hires.
- The level of engagement of entry-level or junior new hires on Stack Overflow for Teams.

Time-to-proficiency for entry-level or junior new hires

**5 to 9%
faster**



- The length of time-to-proficiency for entry-level or junior new hires.
- The number of developer new hires that are entry-level or junior new hires.
- The average fully burdened salary for developer new hires that are entry-level or junior new hires.
- The amount of existing familiarity that new hires have with Stack Overflow.

Results. To account for these risks, Forrester adjusted this benefit downward by 15%, yielding a three-year, risk-adjusted total PV of \$2.6 million.

Faster Time-To-Proficiency For New Hires					
Ref.	Metric	Source	Year 1	Year 2	Year 3
C1	Developer new hires that are entry-level hires	Composite	400	400	400
C2	Time-to-proficiency for new hires that are entry-level prior to Stack Overflow for Teams (in hours) (1040 hours is equivalent to six months)	Composite	1,040	1,040	1,040
C3	Reduction in time-to-proficiency due to Stack Overflow for Teams (percentage)	Interviews	5%	7%	9%
C4	Reduction in time-to-proficiency per new hire due to Stack Overflow for Teams (hours)	C2*C3	52.0	72.8	93.6
C5	Reduction in time-to-proficiency across all new hires due to Stack Overflow for Teams (hours)	C1*C4	20,800	29,120	37,440
C6	Fully burdened hourly salary of new hires that are entry-level developers	TEI Standard	\$43	\$43	\$43
Ct	Faster time-to-proficiency for new hires	C5*C6	\$894,400	\$1,252,160	\$1,609,920
	Risk adjustment	↓15%			
Ctr	Faster time-to-proficiency for new hires (risk-adjusted)		\$760,240	\$1,064,336	\$1,368,432
Three-year total: \$3,193,008			Three-year present value: \$2,598,867		

UNQUANTIFIED BENEFITS

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

- **Increased innovation.** Interviewees explained that Stack Overflow for Teams drove collaboration and information exchange among developers across offices and teams. This increased the innovation and, in some cases, improved time-to-market at interviewees’ organizations. Interviewees offered examples of their employees learning information, much of it cutting edge, through Stack Overflow for Teams

“Stack [Overflow for Teams] breaks down silos at our organization. We found that 69% of questions asked on Stack at our organization are answered by someone in a different business domain. That cross-domain collaboration is extremely important to us.”
Developer advocate, insurance

that allowed them to improve productivity in the long term.

For instance, the developer advocate in insurance said: “Upgrading certain applications was a very challenging undertaking because of security and our configuration. It took four to six weeks or two to three sprints of a team’s time to just keep this software current. But before long, someone was able to basically generate a playbook and put it on Stack Overflow [for Teams] on ‘here’s how you repeatedly and simply upgrade these applications.’ In separate business units, they’ve been able to compress the upgrade time from two to three sprints down to less than one. Technical leaders said it was phenomenal.”

- **Enhanced workplace community.** In addition to innovation, interviewees explained that the collaboration and knowledge exchange in Stack Overflow for Teams led to an increased sense of workplace community, especially now that remote work is common at their organizations. Stack Overflow for Teams served as a main point of contact for colleagues spread internationally — in some cases, at more than 100 offices across dozens of countries — and developers reported feeling more connected because of the platform.

The product owner in software said: “Stack [Overflow for Teams] is different than our other systems in that everyone has access without silos and without permission requests. Hundreds of our teams across the globe are on Stack, connecting with colleagues on different topics.”

- **Improved employee experience.** Interviewees said their employees reported a high degree of satisfaction with Stack Overflow for Teams, a solution that improved their productivity and was easy to use. The product owner in software explained that employees ranked Stack Overflow for Teams at the top of their dozens of internal solutions.

The director of software development in AI observed: “Developers love Stack Overflow for Teams. Morale is positively influenced. They don’t have to answer the same questions again and again, which is annoying.”

“We have more than 50 internal solutions, and our employee surveys show that Stack Overflow [for Teams] ranks at the very top. Employees really enjoy using it. It’s very good for employee satisfaction. It helps with retention.”

Product owner, software

FLEXIBILITY

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

- **Expanding user groups.** While most Stack Overflow for Teams users at interviewees’ organizations were developers and engineers, interviewees reported that employees in other roles were also users and experienced similar benefits. At interviewees’ organizations, there were plans to increase the use of Stack Overflow for Teams among data scientists and analysts, digital managers, and technical product managers, as well as those in marketing, finance, and customer-success roles connected to developer work.
- **Major project coordination and efficiency.** Interviewees said now that Stack Overflow for Teams was up and running at their organizations

and widely used to share information and drive efficiency, they were considering using the platform to officially coordinate and streamline major, complex projects such as cloud migrations.

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

“There was a lot of concern when we went remote about what it would do to company culture. Our employees report Stack Overflow [for Teams] helps them feel and stay connected, even if they’re not coming into the office anymore.”

Developer advocate, insurance

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	Internal labor to implement	\$27,600	\$0	\$0	\$0	\$27,600	\$27,600
Etr	Licensing costs	\$0	\$1,980,000	\$1,980,000	\$1,980,000	\$5,940,000	\$4,923,967
	Total costs (risk-adjusted)	\$27,600	\$1,980,000	\$1,980,000	\$1,980,000	\$5,967,600	\$4,951,567

INTERNAL LABOR TO IMPLEMENT

Evidence and data. At interviewees' organizations, some internal employee labor was dedicated to implementing Stack Overflow for Teams.

- Interviewees described relatively straightforward implementation efforts that lasted from one to three months. Most interviewees said implementation, content seeding, and change management required the dedication of one employee, but they noted a successful Stack Overflow for Teams community needs the backing and buy-in of multiple stakeholders.
- Beyond implementation, interviewees described Stack Overflow for Teams as self-managing in that no employee has a job role that entails ongoing management or maintenance of the platform.

Modeling and assumptions. For the composite analysis, Forrester assumes that:

- The implementation of Stack Overflow for Teams takes place over two months.
- One employee is dedicated to implementation during those two months.
- The fully burdened salary for this employee is \$12,000 per month.

Risks. The cost of internal labor to implement will vary based on:

- The scope of the implementation and the change management processes in place.
- The skill set of employees involved in the implementation and their average fully burdened salary.

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 \$28,000.

Internal Labor To Implement

Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
D1	Time to implement (months)	Interviews	2			
D2	Number of FTEs dedicated to implementation	Interviews	1			
D3	Fully burdened monthly salary of employee	TEI Standard	\$12,000			
Dt	Internal labor to implement	D1*D2*D3	\$24,000	\$0	\$0	\$0
	Risk adjustment	↑15%				
Dtr	Internal labor to implement (risk-adjusted)		\$27,600	\$0	\$0	\$0
Three-year total: \$27,600			Three-year present value: \$27,600			

LICENSING COSTS

Evidence and data. Interviewees’ organizations paid licensing costs to use Stack Overflow for Teams. Interviewees explained that the cost was tailored for their organization and depended on factors such as the number of users and the length of the contract.

Modeling and assumptions. For the composite analysis, Forrester assumes that annual licensing costs for Stack Overflow for Teams are \$1,800,000.

Risks. Licensing costs will vary based on:

- Customer-specific pricing.
- The number of users and the length of the contract.

Results. To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year, risk-adjusted total PV of \$4.9 million.

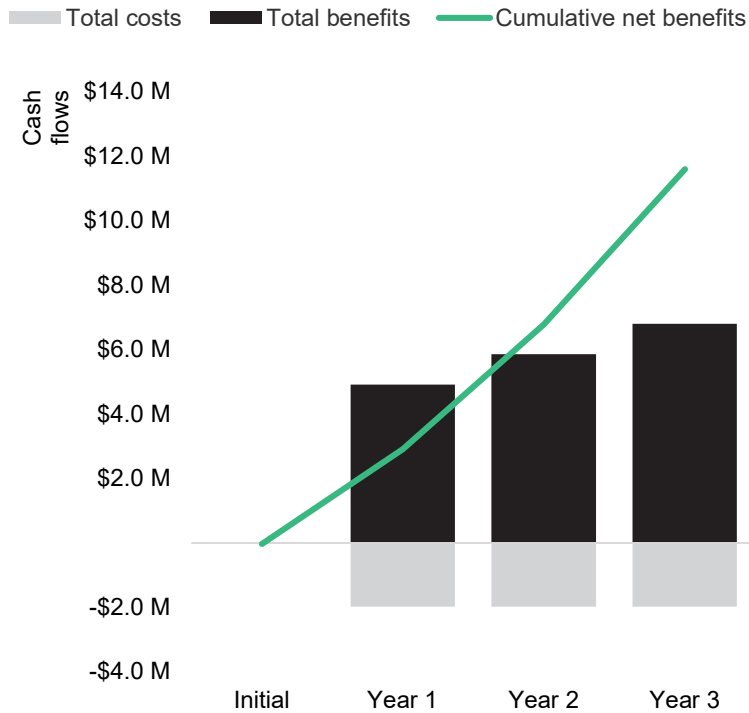
Licensing Costs

Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
E1	Licensing costs	Interviews		\$1,800,000	\$1,800,000	\$1,800,000
Et	Licensing costs	E1	\$0	\$1,800,000	\$1,800,000	\$1,800,000
	Risk adjustment	↑10%				
Etr	Licensing costs (risk-adjusted)		\$0	\$1,980,000	\$1,980,000	\$1,980,000
Three-year total: \$5,940,000			Three-year present value: \$4,923,967			

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	(\$27,600)	(\$1,980,000)	(\$1,980,000)	(\$1,980,000)	(\$5,967,600)	(\$4,951,567)
Total benefits	\$0	\$4,913,740	\$5,856,836	\$6,799,932	\$17,570,508	\$14,416,286
Net benefits	(\$27,600)	\$2,933,740	\$3,876,836	\$4,819,932	\$11,602,908	\$9,464,719
ROI						191%
Payback						<6 months

Appendix A: Total Economic Impact

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

TOTAL ECONOMIC IMPACT APPROACH

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

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

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

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

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



PRESENT VALUE (PV)

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



NET PRESENT VALUE (NPV)

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



RETURN ON INVESTMENT (ROI)

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



DISCOUNT RATE

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



PAYBACK PERIOD

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

Appendix B: Endnotes

¹ Total Economic Impact is a methodology developed by Forrester Research that enhances a company's technology decision-making processes and assists vendors in communicating the value proposition of their products and services to clients. The TEI methodology helps companies demonstrate, justify, and realize the tangible value of IT initiatives to both senior management and other key business stakeholders.

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