

A Forrester Total Economic Impact™
Study Commissioned By Xray
August 2020

The Total Economic Impact™ Of Xray

Faster Time-To-Market And Reduced
Testing Costs For DevOps Teams

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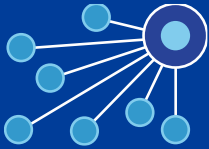
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Executive Summary

Key Benefits And Costs



Avoided licensing and maintenance cost:

50% to 90%



Test management productivity improvement:

20% to 30%



Total cost:

\$472,907

“The top three benefits of using Xray are better collaboration, higher transparency, and lower licensing cost.”

Head, test services, financial services

Xray is a test management tool that helps software development and testing teams improve application quality through efficient test management. The test management tool is fully integrated with Jira and helps users improve every aspect of the testing lifecycle from planning and design to execution and reporting.

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

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed several customers with a combined 12 years of experience using Xray.

Prior to using Xray, the customers managed tests using disparate tools, either supplied by third-party providers or developed in-house — or they merely used spreadsheets. The lack of centralized test management hindered communication and created silos between testers and developers, which in turn impacted testing efficiency and the quality of software developed. Some test management tools the customers used before Xray were also expensive and not flexible enough to support their increasing adoption of agile processes, which required shorter and more effective test cycles.

Key Findings

Quantified benefits. The following risk-adjusted present value (PV) quantified benefits are representative of those experienced by the companies interviewed:

- › **Reduced software licensing and maintenance cost of existing test management solution saves \$420,459.** Migrating to Xray allowed the companies to gradually reduce the licensing costs of their existing test management solutions by 90%.
- › **Improved test management productivity represents a benefit of \$1,072,257.** Because Xray fully integrates with Jira and offers better test traceability, organizations experienced improvements in test management of 15% to 30%.

Unquantified benefits. The interviewed organizations experienced the following benefits, which are not quantified for this study:

- › **Support for transition to a culture of testing.** Employees involved in software development are more receptive to conducting tests, resulting in better product quality.
- › **Faster mean-time-to-repair.** Clients claim Xray provides improved test transparency and traceability, enabling developers, testers, and product teams to trace test progress more easily since Xray offers users links and traceability across requirements, tests, defects, and test executions. This allows users to act on any defect or production issue identified sooner.



ROI
216%



Benefits PV
\$1.5 million



NPV
\$1.0 million



Payback
16 months

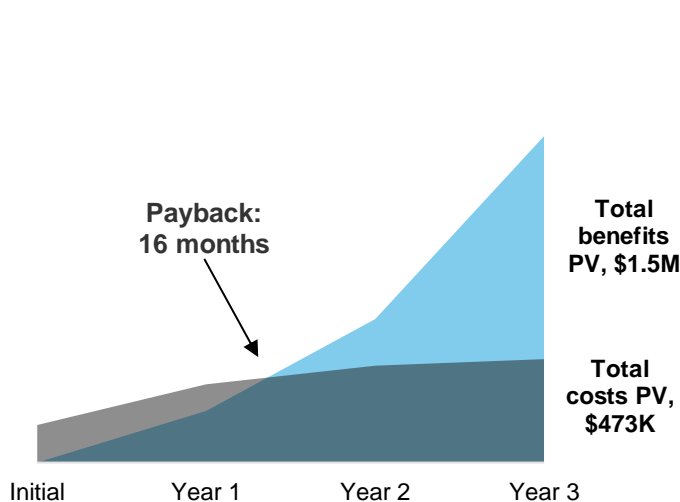
- > **Faster product development cycles.** Customers report better collaboration across teams; instead of producing interim deliverables just to support handovers, they now have shared views and data that improve closer collaboration. This in turn leads to faster product development cycles.

Costs. The following risk-adjusted present value (PV) costs are representative of those experienced by the companies interviewed:

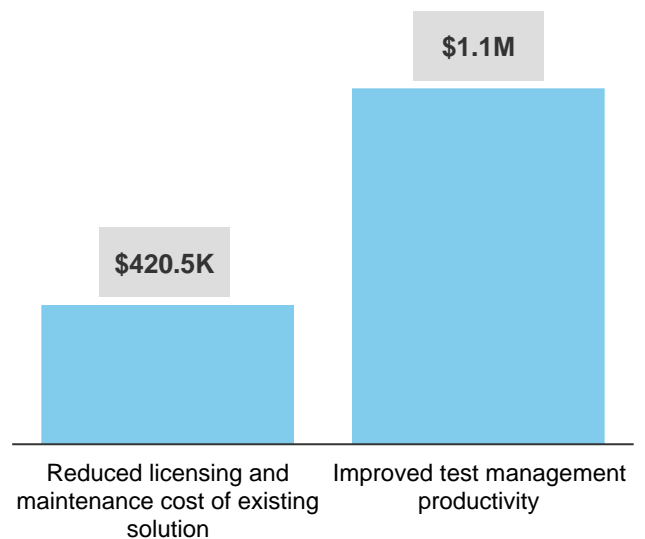
- > **Xray solution cost of \$39,223.** This includes licensing and maintenance fees for three years.
- > **Implementation and migration cost of \$144,572.** The initial installation and configuration, as well as gradual migration of test cases and test assets from older tools, resulted in additional costs for organizations.
- > **Ongoing resource cost of \$289,112.** This comprises training for 1,500 users over the three years (0.4 days per user) and ongoing maintenance effort equivalent to 0.3 FTEs.

Forrester's interviews with four existing customers and subsequent financial analysis found that an organization based on these interviewed organizations experiences **benefits of \$1.5 million over three years versus costs of \$473K, adding up to a net present value (NPV) of \$1.0 million and an ROI of 216%.**

Financial Summary



(Three-Year)



The TEI methodology helps companies demonstrate, justify, and realize the tangible value of IT initiatives to both senior management and other key business stakeholders.

TEI Framework And Methodology

From the information provided in the interviews, Forrester has constructed a Total Economic Impact™ (TEI) framework for those organizations considering implementing Xray.

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 Xray can have on an organization:



DUE DILIGENCE

Interviewed Xray stakeholders and Forrester analysts to gather data relative to Xray.



CUSTOMER INTERVIEWS

Interviewed four organizations using Xray to obtain data with respect to costs, benefits, and risks.



COMPOSITE ORGANIZATION

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



FINANCIAL MODEL FRAMEWORK

Constructed a financial model representative of the interviews using the TEI methodology and risk-adjusted the financial model based on issues and concerns of the interviewed organizations.



CASE STUDY

Employed four fundamental elements of TEI in modeling Xray's impact: benefits, costs, flexibility, and risks. Given the increasing sophistication that enterprises have regarding ROI analyses related to IT investments, Forrester's TEI methodology serves to provide a complete picture of the total economic impact of purchase decisions. Please see Appendix A for additional information on the TEI methodology.

DISCLOSURES

Readers should be aware of the following:

This study is commissioned by Xray and delivered by Forrester Consulting. It is not meant to be used as a competitive analysis.

Forrester makes no assumptions as to the potential ROI that other organizations will receive. Forrester strongly advises that readers use their own estimates within the framework provided in the report to determine the appropriateness of an investment in Xray.

Xray 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.

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

The Xray Customer Journey

BEFORE AND AFTER THE XRAY INVESTMENT

Interviewed Organizations

For this study, Forrester conducted four interviews with Xray customers. Interviewed customers include the following:

INDUSTRY	REGION	INTERVIEWEE	NUMBER OF EMPLOYEES
Technology	Europe	Agile coach and senior software engineering consultant	13,000
Transportation	Europe	Software test engineering team leader	33,000
Technology	North America	Principal consultant — ALM and PLM	23,000
Financial services	Europe	Head, test services	5,000

Key Challenges

The main challenges faced by interviewees prior to implementation of Xray revolved around cost, communication, and collaboration:

- › **Existing test management tools were costly and did not integrate well with Jira.** Previous tools cost as much as 10 times that of Xray and were often not used to their full potential. Integration issues with Jira affected collaboration.
- › **Poor communication between teams.** Developers and testers worked on different tools and platforms; there was no storage for test data, and test results were not transparent. These all hindered collaboration and efficiency.
- › **Supporting transition to Agile.** Some of the interviewed companies were transitioning to Agile software development and needed a platform to simplify the testing user experience and decentralize test management.

“[Our existing test management tool] is very, very expensive compared to other tools, and we were only using 20% of the functionality of it. And it introduced a glossary of terms, which is not common in the tester communities worldwide.”

Software test engineering team leader, transportation



Key Results

The interviews revealed that key results from the Xray investment include:

- › **Reduced licensing and maintenance cost of existing test management solution.** As the interviewed organizations migrated test cases to Xray, they significantly reduced license costs by 90% and reduced maintenance effort by 80% over three years.
- › **Improved test management productivity.** Test transparency improved as users could better keep track of tests with Xray. Having test progress on a centralized platform has fostered communication and collaboration. Test management efficiency has improved by 15% to 30% over the years.

“After three years of using Xray, we really can say that is a tool that users love to work with and ask us if they can use this tool. . . . It’s really easy to manage and work with.”

Principal consultant — ALM and PLM, technology



- › **Ability to support more projects.** Using Xray helped teams to transition to a culture of testing. Users find it easier to carry out and manage tests and, as a result, are more willing to participate in testing-related activities. This has freed up time for testers and enabled them to support more projects.
- › **Faster mean-time-to-repair and faster product development cycles.** Clients have benefited from improved test transparency and traceability, which has enabled them to trace test progress more easily and act on any defects or product issues identified sooner. Collaboration has also improved, leading to faster product development cycles.

Composite Organization

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

Description of composite. The composite organization is a company developing and maintaining proprietary software. It has a total of 10,000 employees, 1,500 of whom are Xray users. Before using Xray, the company used a test management solution from another provider.

Deployment characteristics. The composite organization installs the server version of Xray and opts for an unlimited number of licenses to match its Jira license. It trains 700 users as part of Xray go-live, trains a further 500 users in Year 1, and trains 300 more in Year 2. The organization uses Xray to support manual testing in Years 1 and 2, expanding support to automated tests in Year 3.



Key assumptions

- › Unlimited Xray license
- › Server version
- › 1,500 users
- › Manual testing in Years 1 and 2, expanding support to automated tests in Year 3

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	Reduced licensing and maintenance cost of existing solution	\$118,125	\$189,000	\$208,800	\$515,925	\$420,459
Btr	Improved test management productivity	\$140,569	\$321,300	\$903,656	\$1,365,525	\$1,072,257
	Total benefits (risk-adjusted)	\$258,694	\$510,300	\$1,112,456	\$1,881,450	\$1,492,716

Reduced Licensing And Maintenance Cost Of Existing Solution

As companies migrated test cases to Xray, they could reduce the number of licenses of their existing test management solutions. The resources required to support decreased.

- › Quite consistently, interviewees estimated the license costs for their existing test management solutions were 10 times that of an unlimited Xray license.
- › One interviewee expects to completely move away from the existing solution in about two years. Another organization has less than 5% still using the existing solution three years into using Xray.
- › As a result of reduced usage of their old solutions, the interviewed organizations have been able to reduce system maintenance and support effort.

Forrester assumes that the composite organization benefits from a lower licensing and maintenance cost over three years, as it gradually migrates existing test cases and sets up new projects in Xray.

- › In Year 1, the composite organization cuts the number of licenses of its existing test management solution by half. In the subsequent years, it further reduces the number of licenses to 20% and 10% that of pre-Xray usage.
- › The maintenance effort required drops roughly in line with the number of licenses: 50% reduction in Year 1 and 80% reduction in Years 2 and 3.
- › The composite organization migrates 40% of the test cases from the existing solution to Xray as part of Xray setup, then migrates 50% of test cases over the course of Year 1, with the remaining 10% migrated in the beginning of Year 2.

Forrester adjusted this benefit downward by 10% to account for risks such as variance in the number and complexity of test cases across organizations, as well as employee readiness to adopt Xray and, in a wider sense, use Jira and practice Agile.

The resulting three-year risk-adjusted total benefit PV is \$420,459.

The table above shows the total of all benefits across the areas listed below, as well as present values (PVs) discounted at 10%. Over three years, the composite organization expects risk-adjusted total benefits to be a PV of nearly \$1.5 million.

“We’ve already reduced half of the license costs, and we will set [old solution] on read-only in 2021 so that we can use the data for next few years, and there will be no license costs anymore.”

Head, test services, financial services



Impact risk is the risk that the business or technology needs of the organization may not be met by the investment, resulting in lower overall total benefits. The greater the uncertainty, the wider the potential range of outcomes for benefit estimates.

Reduced Licensing And Maintenance Cost Of Existing Solution: Calculation Table

REF.	METRIC	CALCULATION	YEAR 1	YEAR 2	YEAR 3
A1	Licensing cost of test management solution, pre-Xray	Interviews	\$220,000	\$220,000	\$220,000
A2	Reduction in licensing cost of existing solution	Interviews	50%	80%	90%
A3	Effort in maintaining old solution (FTE)	Interviews	0.50	0.50	0.50
A4	Reduction in effort maintaining old solution	Assumption	50%	80%	80%
A5	Average employee fully loaded salary		\$85,000	\$85,000	\$85,000
At	Reduced licensing and maintenance cost of existing solution	$A1 * A2 + A3 * A4 * A5$	\$131,250	\$210,000	\$232,000
	Risk adjustment	↓10%			
Atr	Reduced licensing and maintenance cost of existing solution (risk-adjusted)		\$118,125	\$189,000	\$208,800

Improved Test Management Productivity

Interviewees said that Xray enabled better collaboration and improved test traceability and visibility. Previously, project teams used different systems that didn't integrate well together. With Xray, the project team would refer to the same dashboard to keep track of test progress. As a result, test management productivity improved.

- One interviewee estimated an overall 30% improvement in test management efficiency. A key area of improvement is much shorter and fewer test review meetings, as business analysts could see test cases developed for their requirements on Xray, removing the need to review face-to-face in most cases.
- Another interviewee told Forrester that administrative tasks have decreased by 50% as teams moved to Xray, removing the need to manage disparate tools in the same project.
- The increase in productivity is partly directly attributable to Xray's functionality, but also because it supports a culture shift in testing mindset. Developers and business teams find it easier to carry out tests and are more willing to execute tests with support from testers. Testers can now support more projects at any given time, as they are involved in setting up a project as it begins and required mainly for methodology support afterwards.

For the composite organization, Forrester assumes that there are 700 Xray users in Year 1, increasing to 1,200 in Year 2 and 1,500 in Year 3. Each user spends 70% of their time on software development-related activities, about 25% of which is testing-related.

- Test management efficiency improves with the use of Xray. This starts with a 15% improvement in Year 1, increasing to 20% in Year 2 as users grow accustomed to the new way of working. In Year 3, Xray is integrated with the composite organization's test automation tool, which improves the overall test management efficiency by 30%.
- Forrester applies a productivity capture ratio of 50% in the calculation of this benefit, with the assumption that only 50% of the time saved is actually converted into productive output.
- In Years 1 and 2, 20% of the productivity improvement is attributed to Xray. The attribution increases to 30% in Year 3 as the composite organization starts using Xray to manage automated tests.

"Now everybody can see if there are errors and they have to act on it. The quality of the complete process, and the traceability, and the ability to manage is much better."

Principal consultant — ALM and PLM, technology



"We have better collaboration because there's no media disruption anymore. . . . We have better transparency how everything works together."

Head, test services, financial services



"At some point of a project, there's an immediate need for many testers, and you wouldn't get any in the organization as quickly as you needed them. This problem vanished because everyone in the team knew when to test what."

Software test engineering team leader, transportation



Forrester adjusted this benefit downward by 10%, to account for the variations in organizational culture and the sophistication of pre-Xray test management practices.

The resulting three-year risk-adjusted total PV is \$1.1 million.

Improved Test Management Productivity: Calculation Table					
REF.	METRIC	CALCULATION	YEAR 1	YEAR 2	YEAR 3
B1	Number of Xray users		700	1,200	1,500
B2	Percent of time spent on software development projects	Assumption	70%	70%	70%
B3	Testing effort per project		25%	25%	25%
B4	Test management efficiency improvement	Interviews	15%	20%	30%
B5	Productivity capture		50%	50%	50%
B6	Percent attributed to Xray		20%	20%	30%
B7	Average employee fully loaded salary		\$85,000	\$85,000	\$85,000
Bt	Improved test management productivity	$B1*B2*B3*B4*B5*B6*B7$	\$156,188	\$357,000	\$1,004,063
	Risk adjustment	↓10%			
Btr	Improved test management productivity (risk-adjusted)		\$140,569	\$321,300	\$903,656

Unquantified Benefits

The additional benefits can be seen to be part of those that have been quantified above, but are still worth calling out separately:

- › **Support for a transition to a culture of testing.** The use of Xray has resulted in a shift in the behavioral mindset of both testers and developers. Because of the ease of testing and better product experience, willingness to test has increased, which has led to enhancements in overall employee experience.
- › **Faster mean-time-to-repair.** The app creates a transparent bridge between developers, testers, and product teams and results in better traceability between requirements, stories, and test cases. All the interviewed customers reported better visibility of test cases, which has given test managers the capability to act sooner to address any lags, delays, or testing issues. Based on reporting, a project manager can act to rectify potential cost or time overruns on their Agile project and can curb inefficiency on their testing processes as well as wider software development lifecycle (SDLC). With fewer bugs reaching production, there is less business disruption, which is beneficial for an organization.
- › **Faster product development cycles.** While improved test management is the goal, interviewees also highlighted that the collaboration between teams has improved, in turn saving them time and facilitating their testing tasks. Teams spend less time finding and fixing bugs, which leads to a faster go-to-market (GTM) for products and services and, therefore, more and faster business value in terms of increased sales, increased profits, and, most importantly, a better customer experience.

“Xray enables better agility for the firm as it removes the need to move between Jama and Jira.”

Agile coach and senior software engineering consultant, technology



“Xray helps us to do the translation from waterfall to Agile. . . . It supported and accelerated the change to testing.”

Head, test services, financial services



Flexibility

The value of flexibility is clearly unique to each customer, and the measure of its value varies from organization to organization. There are multiple scenarios in which a customer might choose to implement Xray and later realize additional uses and business opportunities, including:

- › **Faster time-to-market.** Multiple customers explained that they believed there were additional future benefits from having the whole IT team aligned with developers and testers using the same tool, which in turn will improve time-to-market.
- › **Rapid scaling with minimal effort.** As Xray flawlessly integrates with Jira, flexible scaling and rapid deployment are important benefits to be able to quickly address new and/or changing customer needs around test management. Strong growth in a customer's business is supported by minimal training because of the ease of use of the Xray tool, meaning new users can directly use it.

Flexibility, as defined by TEI, represents an investment in additional capacity or capability that could be turned into business benefit for a future additional investment. This provides an organization with the "right" or the ability to engage in future initiatives but not the obligation to do so.

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
Ctr	Xray solution cost	\$0	\$23,100	\$11,550	\$11,550	\$46,200	\$39,223
Dtr	Implementation and migration cost	\$61,094	\$73,313	\$20,365	\$0	\$154,771	\$144,572
Etr	Ongoing resource cost	\$111,067	\$106,108	\$74,375	\$26,775	\$318,325	\$289,112
	Total costs (risk-adjusted)	\$172,160	\$202,521	\$106,290	\$38,325	\$519,296	\$472,907

Xray Solution Cost

Two key components contribute to the Xray solution cost: the licensing cost and maintenance cost.

For the composite organization, Forrester assumes the licensing cost in Year 1 covers an unlimited enterprise license for 10,000+ users; the maintenance cost for subsequent years is 50% of the licensing cost.

- › The licensing cost for Year 1 includes the fee for 12 months of maintenance.
- › For Years 2 and 3, the composite pays for maintenance at 50% of the current licensing cost. This cost is termed as maintenance costs.

To compensate for the uncertainty of these estimations, Forrester risk-adjusted this cost upward by 5%. For the composite organization, the risk-adjusted licensing and maintenance costs over the three years have a present value of \$39,223.

The table above shows the total of all costs across the areas listed below, as well as present values (PVs) discounted at 10%. Over three years, the composite organization expects risk-adjusted total costs to be a PV of nearly \$473,000.

Implementation risk is the risk that a proposed investment may deviate from the original or expected requirements, resulting in higher costs than anticipated. The greater the uncertainty, the wider the potential range of outcomes for cost estimates.

Xray Solution Cost: Calculation Table

REF.	METRIC	CALCULATION	INITIAL	YEAR 1	YEAR 2	YEAR 3
C1	Xray licensing cost	Interviews		\$22,000	\$0	\$0
C2	Xray maintenance cost	Interviews		\$0	\$11,000	\$11,000
Ct	Xray solution cost	C1+C2	\$0	\$22,000	\$11,000	\$11,000
	Risk adjustment	↑5%				
Ctr	Xray solution cost (risk-adjusted)		\$0	\$23,100	\$11,550	\$11,550

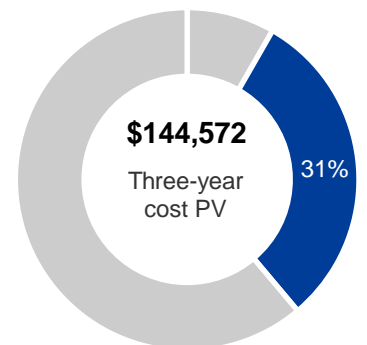
Implementation And Migration Cost

One of the important cost components for a customer is the implementation and migration cost, which makes up nearly 31% of the overall costs for the composite organization.

The costs described in this section consider the efforts related to the initial setup and implementation, as well as the incremental effort for migration of test cases from existing tool to Xray.

This analysis starts from when the customer chooses Xray among other solutions, so there is implementation time required for the deployment of the tool, plus the migration of existing test cases to Xray.

Based on client interviews, Forrester assumes:



Implementation and migration cost:
31% of total costs

- › Before migrating to Xray, the composite organization had a more complicated and costly testing tool deployed.
- › Five full-time employees dedicate 50% of their time during the initial implementation and migration. For Years 1 and 2, they dedicate 15% of their time.
- › Their fully loaded salary rate is \$85,000.

For the migration, Forrester assumes:

- › Migrating the initial 40% of test cases to Xray takes three months. **The effort for implementation and migration of initial test cases by the five employees results in a cost of \$53,125.**
- › In Year 1, the organization migrates 50% of its remaining test cases over a period of 12 months. During this time, the five FTEs spend nearly 15% of their time on the migration activities, which results in a cost of \$63,750.
- › In the following year, the five FTEs migrate the remaining 10% of test cases, requiring nearly 15% of their time. The organization also performs the integration with the test automation tool over a period of five days.

Forrester applies a moderate risk adjustment of 15%, given uncertainties in the implementation and migration process. In other organizations, there may be additional migration requirements because of complexities in previous testing tools. For the analysis, Forrester assumes these FTEs' skill sets are in house; hence, there is no need for any additional recruitment or outside help.

"The cost of Xray is definitely around 10 times lower as compared to our old test management software. It also comes with much lower maintenance cost and effort."

Head, test services, financial services



Ongoing Resource Cost: Calculation Table

REF.	METRIC	CALCULATION	INITIAL	YEAR 1	YEAR 2	YEAR 3
D1	Initial implementation and ongoing test case migration (months)	Interviews	3	12	3	
D2	Number of employees involved	Interviews	5	5	5	
D3	% time spent on Xray implementation and test case migration	Interviews	50%	15%	15%	
D4	Test automation integration (months)	Interviews			0.25	
D5	Number of employees involved in integration with test automation tool				2	
D6	% time spent on integration with test automation tool				50%	
D7	Average employee fully-loaded salary		\$85,000	\$85,000	\$85,000	
Dt	Implementation cost	$(D1/12 * D2 * D3 + D4/12 * D5 * D6) * D7$	\$53,125	\$63,750	\$17,708	\$0
	Risk adjustment	↑15%				
Dtr	Implementation cost (risk-adjusted)		\$61,094	\$73,313	\$20,365	\$0

Ongoing Resource Cost

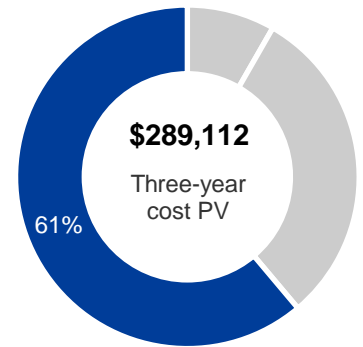
The biggest cost component is the ongoing resources cost, contributing nearly 61% to the total costs. Forrester identified two ongoing resource cost components: training for Xray users and ongoing maintenance effort.

The interviewed organizations said that new users require an average of 3 hours of training before starting to use Xray. This time also includes training on how to make the most of the tool and how to use all the latest features and functionalities.

Based on client interviews, Forrester assumes for the composite organization:

- › In total, 1,500 users require training, and their training happens over a period of two years.
- › Their fully loaded salary rate is \$85,000.
- › Moreover, the organization utilizes three FTEs to support maintenance activities over a period of three years. These FTEs spend on an average 10% of their time in maintaining the Xray tool.

The ongoing resource cost varies by company. To consider the uncertainty of the assumptions made, Forrester risk-adjusted this cost upward by 5%. For the composite organization, the risk-adjusted change management costs over the three years have a present value of approximately \$289,112.



Ongoing resource cost:
61% of total costs

“The learning curve for our users is very fast, because Xray is very easy to work with Jira.”

Software test engineering team leader, transportation



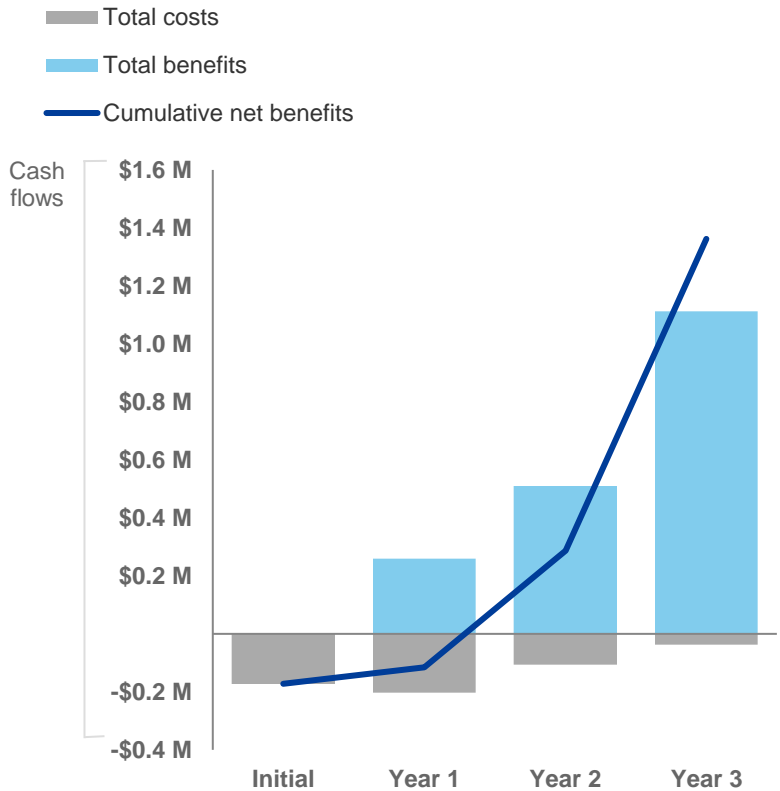
Ongoing Resource Cost: Calculation Table

REF.	METRIC	CALCULATION	INITIAL	YEAR 1	YEAR 2	YEAR 3
E1	Number of Xray users to be trained		700	500	300	
E2	Time spent on training per person (days)		0.40	0.40	0.40	
E3	Total training time (days)	E1*E2	280	200	120	
E4	Number of employees involved in support			3	3	3
E5	Percent of time spent maintaining Xray			10%	10%	10%
E6	Maintenance effort (days)	E4*E5*45*5		67.5	67.5	67.5
E7	Average employee fully loaded salary		\$85,000	\$85,000	\$85,000	\$85,000
Et	Ongoing resource cost	(E3+E6)*E7/45/5	\$105,778	\$101,056	\$70,833	\$25,500
	Risk adjustment	↑5%				
Etr	Ongoing resource cost (risk-adjusted)		\$111,067	\$106,108	\$74,375	\$26,775

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.



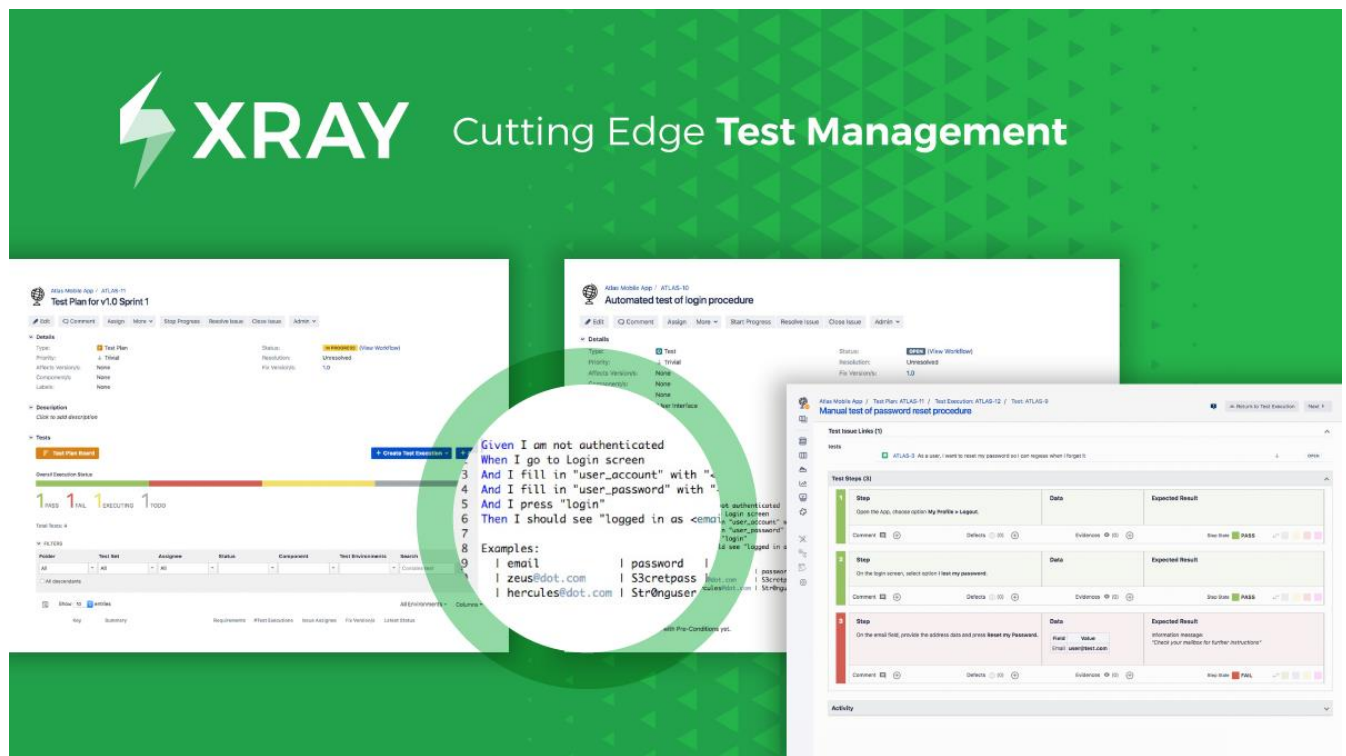
These risk-adjusted ROI, NPV, and payback period values are determined by applying risk-adjustment factors to the unadjusted results in each Benefit and Cost section.

Cash Flow Analysis (risk-adjusted estimates)

	INITIAL	YEAR 1	YEAR 2	YEAR 3	TOTAL	PRESENT VALUE
Total costs	(\$172,160)	(\$202,521)	(\$106,290)	(\$38,325)	(\$519,296)	(\$472,907)
Total benefits	\$0	\$258,694	\$510,300	\$1,112,456	\$1,881,450	\$1,492,716
Net benefits	(\$172,160)	\$56,173	\$404,010	\$1,074,131	\$1,362,154	\$1,019,809
ROI						216%
Payback period (months)						16

Xray: Overview

The following information is provided by Xray. Forrester has not validated any claims and does not endorse Xray or its offerings.



Xray is the No. 1 manual and automated test management app for quality assurance in Jira. Xray is a mission-critical tool at over 5,000 companies in 70 countries, including 137 of the Global 500. The app is built for every member of your software team to plan, track, and release great software:

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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: Supplemental Material

Related Forrester Research

“Adopt Agile And DevOps To Drive Digital Business Success,” Forrester Research, Inc., January 7, 2020