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Executive Summary Forrester Total Economic Impact of IntelliJ IDEA

Forrester Consulting conducted a Total Economic Impact™ (TEI) study to provide readers with a framework to evaluate the potential financial impact of IntelliJ IDEA on their organizations. To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed several customers with experience using IntelliJ IDEA. This summary is based on a full TEI study titled 'The Total Economic Impact™ Of JetBrains IntelliJ IDEA'.

To derive the TEI value and impact for this study, we interviewed the following four customers:

- Development lead from a US headquartered hi-tech company
- CTO of a UK-based retail and logistics company
- Software development lead from a Poland-based hi-tech company
- CTO of a US-headquartered financial services firm

Through four customer interviews and data aggregation, Forrester concluded that IntelliJ IDEA has the following three-year financial impact: $5,610,206 over three years versus costs of $770,318, adding up to a net present value (NPV) of $4,839,888 and an ROI of 628%.

Return on Investment
628%

Average hours saved from code development, refactoring and code maintenance
144 hours per user per year

Average net annual benefit per user:
$2,027 per user per year

KEY CHALLENGES

- Before the investment in IntelliJ IDEA, interviewees described inefficiencies resulting in reduced developer productivity. Customers noted that text editors and open-source IDEs resulted in significant inefficiencies that impacted developer productivity. A technical lead for a development platform stated simply, "I would forbid developers from using text editors at our organization if I could."
- Inability to reduce the number of bugs led to negative customer outcomes. One of the interviewed organizations told Forrester: "We had an issue where it took us two weeks to get most of the bugs ironed out after a release. This led to a significant increase in customer churn; it was painful. Months later our customers were still mentioning the slowdowns — it feels like it takes them years to forget that kind of stuff. And so bugs have that serious, serious impact to the customer that they really don't seem to forget."

READ THE FULL STUDY HERE

INVESTMENT DRIVERS

Interviewed organizations decided to invest in IntelliJ IDEA for a number of reasons:

- **Ease of use.** A software developer for a media company told Forrester: "It's much easier for developers to become familiar with IntelliJ IDEA than the other alternatives out there."
- **Number of effective features.** Customers listed IntelliJ IDEA's features as a key differentiator, which include: multi-language support, contextual data, code completion, refactoring, debugger, and the ability to enforce a style guide. An interviewed customer told Forrester: "It's the best IDE on the market right now."

COMPOSITE ORGANIZATION

Based on the four customer interviews a composite organization was created to build a representative TEI model for this study with the following characteristics:

- **Description of composite.** This composite organization is a hi-tech software and AI provider, specializing in the retail and financial services verticals. It has an annual revenue of $3 billion with global offices across the five regions.
- **Deployment characteristics.** The composite organization has 1,000 developers with up to 400 developers using the IntelliJ IDEA solution. They migrated to this solution from a previous IDE, three years ago and are seeing a gradual growth of IntelliJ IDEA adoption within their company.

COST SAVINGS FROM EFFICIENCY GAINS IN CODE DEVELOPMENT

- IntelliJ IDEA enabled developers to work more efficiently. Through better focus, live analysis, and real-time recommendations, developers were able to complete their work 20% faster and with less disruption. Further, IntelliJ IDEA enabled developers to write better code — with consistent style, fewer bugs or exceptions, better referencing of existing code base, better structure, and beyond.
- Considering some assumptions on a 50% productivity conversion, as well as a gradual attribution of further productivity due to IntelliJ IDEA, Forrester adjusted this benefit downward by 15%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of $4,038,481.

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> **"I can do my tasks twice as fast, compared to my previous IDE. After learning the shortcuts and discovering the new features, IntelliJ IDEA is far more intuitive and easy for me to use."**
>
> *Software development lead for a global hi-tech company*

COST SAVINGS FROM IMPROVED CODE QUALITY

- Interviewed organizations noted benefits in their testing and QA process, with the improved code quality from IntelliJ IDEA's auto-completion and code review tools. Tester productivity improved due to the IntelliJ IDEA debugger, improved testing plans, and reduced defect density from developers. Further, developers themselves reduced the time they spent debugging and working with code during testing steps.
- Developers were able to review code easily, and saved atleast 1% of their total time in review compared to their previous IDE.
- The collaborative ability of the solution didn't require reviews to happen one at a time, but rather help developers become more agile in their code reviews. This saved time spent on code review cycles by a further 12.5%.

- Considering modeling assumptions and risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV of $1,066,120.

COST SAVINGS FROM INCREASED PRODUCTIVITY IN CODE MAINTENANCE

- Interviewed organizations noted benefits related to code maintenance due to reduced defect density, a byproduct of better code quality with IntelliJ IDEA. With developers writing better quality code, there were fewer bugs that risked slipping through QA and reduced technical debt that could lead to future issues — ultimately reducing the number of bugs that reached the production environment. With reduced bugs comes reduced need to maintain the code and fix issues when they occur.
- Developers using IntelliJ IDEA reduced defect density by 8%. This saw an average 8,424 hours saved in code maintenance across the three-year horizon.
- Considering modeling assumptions and risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV $355,373.

NET PRODUCTIVITY GAINED FROM ONBOARDING EFFICIENCY

- Interviewed organizations noted a decrease in overall onboarding time for new employees with IntelliJ IDEA due to the reduced technical debt, better user interface, shared configuration files, and implementation of styles guides and templates.
- Onboarding time for new employees reduces from 20 days to 18 days as a result of reduced technical debt and style guides that ease the developer on-boarding process.
- Considering modeling assumptions and risks, Forrester adjusted this benefit downward by 15%, yielding a three-year risk adjusted total PV of $161,730.

UNQUANTIFIED BENEFITS

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

- **Trust and confidence with IntelliJ IDEA solution.** Developers using the solution are more confident in the code they are submitting with all the automated quality controls, recommendations that the solution provides. This makes their code simplified and clearer for review and release.
- **Enhanced collaboration.** Developers can more easily share and understand each others' code thanks to the improved code quality and consistency resulting from live analysis and code completion.
- **Elevated peer reviews.** Peer reviews can focus on bigger picture items like problem solving method, style, and streamlining code. With the previous solution, peer reviews would get bogged down by basic errors and trivial issues.

FLEXIBILITY

- The value of flexibility is unique to each customer. There are multiple scenarios in which a customer might implement IntelliJ IDEA and later realize additional uses and business opportunities, including:
- Availability of plug-ins from the marketplace and language support beyond Java (e.g., Scala).
- Ability to develop in-house plug-ins.
- Reduced support cost for bugs — fewer bugs also reduce the likelihood of support calls from customers.

TOTAL ECONOMIC IMPACT ANALYSIS

For more information, download the full study: "The Total Economic Impact™ Of IntelliJ IDEA," a commissioned study conducted by Forrester Consulting on behalf of JetBrains IntelliJ IDEA, July 2021.

STUDY FINDINGS

Forrester interviewed four organizations with experience using the IntelliJ IDEA and combined the results into a three-year composite organization financial analysis. Risk-adjusted present value (PV) quantified benefits include:

- Efficiency gains in code development tasks saw a cost saving of $4,038,481.
- Improved code quality saw review times decrease by 12.5%.
- Cost saving from productivity in code maintenance saw a benefit of $355,373.
- Onboarding efficiency saw a cost saving of $150,232 with the reduced technical debt and enhanced UI that IntelliJ IDEA was able to provide.

Return on investment (ROI)

628%

Net present value (NPV)

$4,839,888

DISCLOSURES

The reader should be aware of the following:

- The study is commissioned by JetBrains and delivered by Forrester Consulting. It is not meant to be 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 JetBrains IntelliJ IDEA.
- JetBrains reviewed and provided feedback to Forrester. 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.
- JetBrains provided the customer names for the interview(s) but did not participate in the interviews.

ABOUT TEI

Total Economic Impact™ (TEI) 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. The TEI methodology consists of four components to evaluate investment value: benefits, costs, risks, and flexibility.


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