



EBOOK

Buyer's Guide: Selecting a Requirements Management and Traceability Solution for Software Development

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EXECUTIVE SUMMARY

1

Adopt Traceable Agile™ to Accelerate Time to Market and Ensure Quality for Software Development

Engineering teams developing software and integrated systems are under pressure to accelerate development cycles and meet evolving demands from customers and the market. Speeding development with agile processes without compromising software quality requires product, testing, and dev teams working together effectively.

The inability to effectively manage these shifting complexities can create delayed releases and decrease your chances of meeting regulatory compliance and critical timelines. As a result, your software development teams could find themselves:

- Frustrated with legacy tools
- Mired in rework
- Stuck in unproductive meeting

Today's consumers have high expectations and won't have the patience to wait for your solution. Leaders seek to spend less time on paperwork and more on innovation as part of an effort to streamline their development cycles to accelerate time to market while meeting industry regulations.

Bottom Line

The increasing pressure to meet customer demand and critical timelines coupled with the need to ensure system quality creates competing challenges, and makes it difficult for teams to focus.

What if you didn't have to compromise?

This Buyer's Guide incorporates insights from Jama Software's more than 15 years of experience partnering with forward-thinking software. We've designed a platform to help all teams involved in software development produce higher quality systems and improve collaboration. Jama Connect enables **Traceable Agile™**, an innovative process for managing the flow of software development tasks in your DevOps tool of choice while maintaining the current and historical state of your development effort in Jama Connect. This allows them to:



**Accelerate time
to market
through agile
activities**



**Improve software
quality by auto
detecting gaps in
traceability**



**Simplify audits
and compliance**

Use these insights to better understand the challenges you're up against and thoughtfully consider potential solutions. Plus, learn how to get the buy-in you need to undertake the kind of transformation necessary to succeed with complex software development.

Making the Case for Change

When the software development processes are streamlined in a modern solution, it enables visibility across the entire value chain, minimizes overall project risk, and accelerates time to market, making the value of the platform clear across the organization. That makes executive buy-in easier.

If your company is not considering the importance of transitioning to a more streamlined development process, time is not on your side. Failing to act quickly can leave your organization even further behind.

But to see the positive impact improved processes can have on a system, stakeholders in an organization must appreciate the challenges first.

This is where you come in. You can help quantify the problem within your organization and provide data to help make the case for change.

Go through the exercises in the next section using data from your organization to identify your current situation and the size of the potential opportunity.

DIGITAL TRANSFORMATION AND A RAPID PACE IN INNOVATION HAS RESULTED IN A BALANCING ACT OF DELIVERING HIGH VALUE AND QUALITY WHILE BALANCING AN ACCELERATED SOFTWARE DEVELOPMENT CYCLE.

\$2 TRILLION

The cost of poor software quality (CPSQ) in the US in 2020 was approximately \$2.08 trillion. This includes poor software quality resulting from software failures, unsuccessful development projects, and legacy system problems.¹

\$260 BILLION

The cost of unsuccessful development projects resulting from underlying causes that vary, but one consistent theme has been the lack of attention to quality.¹

¹ Poor-quality software costs US trillions, Security Magazine, January 2021



IDENTIFYING THE BUSINESS VALUE

2

Tools to Assess Four Common Software Development Pain Points

- UNPRODUCTIVE WORK TIME
- LENGTHY REVIEW PROCESS
- REWORK
- DEFECTS

Throughout the past decade of working with organizations developing complex systems, four common software and development pain points continuously arise for those who have yet to transform their process.

We'll provide context around the problems and share equations with examples to help you uncover the savings from introducing a modern requirements management platform.. Remember to adjust the variables according to your company's metrics to get a more precise estimate, and rethink how your team functions.

Improving any one of these four aspects of your development process produces real savings. While the calculations on the following pages aren't cumulative, they impact one another and can add up to significant value for your organization.

This is the potential of using a modern software development platform. If realized, it can radically change your business and be the competitive edge you need in today's market.

The Four Common Software Development Pain Points

- Unproductive Work Time
- Lengthy Review Process
- Rework
- Defects

Unproductive Work Time

Are your days spent in inefficient meetings, sifting through emails and document versions for historical information or waiting for reviews and approvals? You're not alone. Many teams suffer the repercussions of archaic, siloed development. A modern process maximizes efficiency by tackling the root causes of momentum-killing delays and holdups.

Calculate how much unproductive work time is costing your business and imagine the possibilities of getting that time back. What could you do with one extra hour each day?

PRO TIP

We've seen long status meetings shrink or vanish when teams have the right solutions in place. Think about your team's schedule and adjust the average time saved per person based on the time spent in meetings each week.

Calculate the ROI for Your Business

	x		x		=	
Creator Users in Jama Connect		Time Reclaimed Per Day (Annual)		Average Salary (Per Person)		Annual Savings

EXAMPLE

25 users x 237 hours x \$100,000/annual = **\$296,250**

Engineering teams report 33% of their time is spend on non-value added work.

Lengthy Review Process

Traditional document review processes are manual and time consuming, resulting in lengthy response times and inefficient meetings. Effective collaboration can impact your development stages and ultimately shorten your time to market. Understanding the impact of change, capturing decisions, centralizing feedback, and reusing existing intellectual property — all aspects that can help speed time-to-market — can be improved with a modern requirements management solution.

PRO TIP

Cost savings can certainly be great and have an impact on your bottom line, but don't forget the qualitative implications. Consider what it would mean for your software line and brand to be first-to-market with game-changing solutions.

Calculate the ROI for Your Business

	x		x		x		x		=	
# Persons In Reviews (Monthly)		Average Review Duration		# Reviews (Monthly)		Average Rate (Per Hour)		Months in a Year		Annual Savings

EXAMPLE

40 people x 2 hours x 1 review x \$50/hr x 12 months = **\$48,000**

Jama Connect reduces the annual cost of reviews by 1-2 hours per day.

Rework

In our experience, approximately 30-50% of a given project is rework. Rework is any time spent on extra work — including mid-development changes, incorrect testing, or fixing defects — and it costs your company big time. Requirements errors cause the majority of rework. Improving the ability to track requirements from definition through testing to catch changes and adjust scope can ensure you're building the right thing and massively reducing overall lifecycle costs.

Complete the equation below to get an understanding of the number of hours your team spends in rework and the value of that in work hours alone.

PRO TIP

If your organization is working on more than one solution at a time, repeat this calculation for each and add up the savings for a holistic view.

Calculate the ROI for Your Business

	x		x		x		=	
Product Development Cost		Percentage of Total Rework		Percentage of Rework Caused by Requirements Errors		Jama Connect Value		Annual Savings

EXAMPLE

\$5,000,000 x 25% x 50% x 50% = **\$312,500**

Jama Connect reduces the annual cost of rework by 1-2 hours per day.

Defects

It's common for requirements to have a defect at some point between definition and delivery. The important thing is to have a system in place that can quickly and accurately identify defects and track their impact up and downstream. This provides visibility into the problem as early as possible when it's less detrimental to fix.

PRO TIP

This calculation factors in personnel hours, but you should also think about the cost of parts, delays, and missed opportunities. Plus, should defects go undetected due to sub-par requirements or testing, releasing lower-quality solutions could have devastating consequences.

Calculate the ROI for Your Business

$$\begin{array}{ccccccccc} \boxed{} & \times & \boxed{} & \times & \boxed{} & \times & \boxed{} & \times & \boxed{} & = & \boxed{} \\ \text{Number of Requirements} & & \text{Hourly} & & \text{\% of} & & \text{Days} & & \text{Hours/Day} & & \text{Annual Savings} \\ \text{Managed Annually} & & \text{Rate} & & \text{Requirements} & & \text{to Fix} & & & & \\ & & & & \text{with Defects} & & & & & & \end{array}$$

EXAMPLE

500 requirements $\times$ \$50/hr $\times$ 63% $\times$ 5 days $\times$ 8.5 hours = **\$669,375**

Jama Connect reduces the annual cost of defects on average 20-30%.

“

Before we used Jama and I rounded up people and collected everything in one place, it felt like everybody was pulling in their own direction, basically holding us in place. After we managed to collect everything in Jama, it felt like everyone is suddenly pulling in the same direction.”

Marko Šustić
Product Manager, Rimac



EVALUATING DEVELOPMENT PLATFORMS

3

Five Key Elements to Help Shape Your Decision

Now that you have a clearer picture of the opportunity a new solution can bring, how should you assess the available options?

There are five key elements you'll need to factor into your decision. There are multiple facets to each component, so we've laid out what to look for as you're evaluating solutions.



1.
**Development
Process**

Minimize interpretation
with a single source
of truth



2.
**Implementation and
Configuration**

Streamline the rollout
process and gain value
quickly



3.
**Customer
Experience**

Get the help you need
from someone who cares



4.
Adoption

Choose a straightforward
solution so people
actually use it

1. Development Process

From defining and prioritizing all the way to verification and validation, software and development is an ongoing, complex process. A single source of truth and visibility helps minimize interpretation — often a top barrier to building successful systems.

Jama Connect allows you to manage and validate complex systems requirements while eliminating risks and inefficiencies associated with documents-based and legacy systems. Paired with Atlassian Jira or Microsoft Azure DevOps, Jama Connect expands the **Live Traceability™** of your development project to include software development tasks to achieve Traceable Agile.

- **Easily Demonstrate Traceability**

Visually track relationships across projects and identify potentially problematic links when changes are made.

- **Test Management**

Seamlessly manage traceability to test cases used for verification and validation to support regulatory needs.

- **Best-in-Class Integrations**

A purpose-built solution to create Live Traceability™ allows data to flow bi-directionally through all best-in-breed tools, including Excel, Jira, Azure DevOps, and more.

- **Maintain Audit Trails and Export Data**

Track all changes to information and export data to support a quality management system in conjunction with a document control system.

- **Cross-functional Collaboration**

Increase early stakeholder visibility and participation in the review process. Exchange requirements data to collaborate with remote engineering teams, customers, and suppliers.

- **Reuse and Baseline Management**

Compare versions of a requirement, generate branches to develop a variant, and create catalogs of reusable requirements.

2. Implementation and Configuration

An efficient rollout increases adoption and shortens your time-to-market. There are many aspects to consider when updating your process. An expert can assist with process alignment and optimization to ensure a smooth launch and operation.

Alignment Phase

The alignment phase aims to determine and implement the best use of Jama Connect for your organization based on an understanding of your software delivery processes, business objectives and desired team workflow. This phase includes:

- Preliminary project planning and discovery sessions to understand your people, process, and data as it pertains to requirements management, and verification and validation for software development teams.
- Onsite workshop or remote working sessions focused on alignment of processes to get your teams up and running quickly.
- Consultants partner with you to setup templates or utilize standard reports to produce the following document exports: checklist baseline, hazard analysis and risk assessment baseline, test results, detailed Review Center stats report, baseline export to Word, and default export to Word.
- Your Jama Software consultant will work with the core implementation team to prepare Jama Connect for use by end users over a small number of remote working sessions if needed.

Launch Phase

Once Jama Connect is ready to use, your Jama Software consultant will lead a remote or onsite training to show your teams how to use Jama Connect. Following the training, your consultant will be available remotely to provide assistance in other activities as needed to support your initial implementation.

A Success Path That's Tailored to Your Needs

Whether you're new to Jama Connect, or you've been a customer for years, we're there for you. Our Success Program catalog is organized by the most common outcomes our customers need. We work with your team to mix and match the trainings, assessments, consulting, and technical expertise you want and need.

I'LL DO IT MYSELF

The Essentials Success Program is our base plan with access to key resources that will set you on the path to success. Tap into self-guided resources such as tutorial videos, monthly live trainings, and subject-matter-expert webinars. You'll also have a limited allowance to Solution Consultants to help with onboarding, optimization, and best practices.

SOUND'S GOOD!

SHOW ME HOW

The Guided Success Program expands the offerings available. With benchmark assessments, you'll be able to measure improvements to your process and utilize technical services for custom exports and extensions. You'll have a greater access to expertise with a named Solution Consultant for the full year.

I'M READY!

DO IT WITH ME

The Strategic Success Program provides access to our most advanced offerings. We embed our top experts with your team including premium level support and a technical account manager. Your Success Team partners with you to measure and drive long-term achievement across multiple projects.

LET'S GO!

3. Customer Experience

Customer experience should be a product's driving force — not an afterthought. A software development solution must have the functionality to get the job done, but added benefits like customer care, collaborative consultants, and online user communities help turn things like a potentially frustrating experience into a delightful exchange. For a top-notch customer experience, look for:

A partner who will have your back.

Whether it's a technical issue, defect, or you just want assistance with process improvement, you need to know the person on the other end of the phone will take the time to troubleshoot and thoughtfully consider your situation.

Industry experts.

Sometimes you need consultants to help with getting started and maximizing value from a new solution. Make sure you're working with experts who understand software development, including process alignment, deployment and adoption, training, and optimization.

Quick and consistent support.

You need a support team that makes you a priority. We offer customer support services around the globe when you need assistance — 24/7 in the US as well as EU customer care teams.

An active, user-led customer community.

The ability to leverage insights from your peers — those solving the same challenges as you — is priceless.

The Jama Software **User Community** connects users with educational resources, support, articles, and product ideas to get the most out of your Jama Connect experience.

Proactive guidance.

It's better to be proactive than reactive. Having someone focused on analyzing your specific usage, ticket reports and trends for potential problem-area indicators can be vital to your success.

4. Adoption

Software on its own won't solve any of your organization's problems. Your team needs to use it as intended to reap the benefits. And for people to willingly adopt it, the introduction of the software must be seamless. A convoluted tool that doesn't match your company's process or work flow will result in teams reverting to rudimentary methods. Look for a solution that:

Works with any development process.

Be it Agile, Waterfall, V-model, or multi-modal, a solution should fit your way of designing automotive solutions, not the other way around.

Leverages a balanced license structure.

Not everyone in your company creates and edits content, but they still need visibility and a voice in the conversation when necessary. Jama Connect offers named licenses for core users and floating licenses for those who access it less frequently. Flexible license types include reviewers, stakeholders, and creators.

Incorporates familiar behaviors.

An intuitive understanding of certain aspects of the software will go a long way in making the solution feel like second nature.

Provides customized training.

Training centered around your people, process, and data can improve deployment for minimal negative impact on your teams.

Offers a trial.

Take advantage of a trial to allow key stakeholders to get their hands dirty interacting with both the functionality and one another to determine how seamless it is to use.



NARROWING DOWN THE OPTIONS

4

Comparison Breakdown of Essential Features and Functionalities

A Time-Saving Checklist

Prepare for the future or you'll be a thing of the past. This list of essential features and functionalities will help you quickly compare solutions and get on the fast-track to modern software development.

ESSENTIAL FEATURES AND FUNCTIONALITY

JAMA SOFTWARE

VENDOR #2

VENDOR #3

Industry-specific Expertise in Software Development

Standard frameworks aligned to key industry methodologies

like Agile, SAFe and traditional Waterfall ☒ ☐ ☐

Export templates and reports ☒ ☐ ☐

Training and consulting designed for success with software teams ☒ ☐ ☐

Review functionality with formal and informal approvals ☒ ☐ ☐

Ease of Use

Simple collaboration for all users through the application and via email ☒ ☐ ☐

Enforceable workflows control viewing and editing of data ☒ ☐ ☐

Intuitive browser-based interface with familiar social context and interactions ☒ ☐ ☐

Design Verification and Validation

Test functionality integrated into the core product ☒ ☐ ☐

Ability to view, manage, and relate test data to requirements and specifications within the system ☒ ☐ ☐

Verification and validation activities automatically create and link defects ☒ ☐ ☐

ESSENTIAL FEATURES AND FUNCTIONALITY

JAMA SOFTWARE

VENDOR #2

VENDOR #3

Integrations Throughout the Development Lifecycle

Bi-directional sync of data	☒	☐	☐
Out-of-the-box integrations with task tracking tools (Jira, Azure DevOps, etc.)	☒	☐	☐
Out-of-the-box integrations with testing tools (TestRail, etc.)	☒	☐	☐

Live Traceability

Real-time visibility into decisions and input — past and present — maintains context throughout the software lifecycle and beyond	☒	☐	☐
Easily produce traceability documentation for missing coverage	☒	☐	☐
Downstream and upstream impact analysis supporting change management	☒	☐	☐
Real-time transparency indicates status across versions of systems and releases	☒	☐	☐
Automatically create traceability while authoring requirements	☒	☐	☐

Reuse

Existing content, system templates, and associated relationships are reusable in subsequent projects	☒	☐	☐
Reused information syncs regardless of location	☒	☐	☐
Manage complex software lifecycles through multiple versions efficiently and accurately	☒	☐	☐

Customer Success

Singular focus on your team, process, and aligning the solution to your software development needs	☒	☐	☐
Professional Services team focuses on adoption, enablement, and time-to-value acceleration	☒	☐	☐
Comprehensive customer care offerings, including an online community, tutorials, and technical support	☒	☐	☐



MAKING AN INFORMED DECISION

5

**You Don't Need to Sacrifice
Quality, Speed, or Safety**

Launch High-Quality Software Faster

Outdated tools and methodologies for developing software are no longer an option. Getting software right — in terms of definition, quality, and timing — is critical. If your company doesn't rise to meet the challenges of today's marketplace with modern development processes, any number of your competitors will.

McKinsey looked at companies in the top quartile for revenue growth, EBITA growth and return on digital investment, and found that 80% invested heavily in digitizing business processes (compared to 21% of others). And the more aggressive a company is in this transformation, the bigger the effect on revenue and profit growth.

A first-rate requirements management solution can streamline your development process so you can move fast without sacrificing quality. If you completed the worksheets on sizing the problem in your organization, the benefits and ROI are clear. A single source of truth for requirements definition and management, an optimized review and approval process, and integrated test management — all while automatically tracking digital relationships — show you're building the right thing.



Quality and speed don't have to be a compromise.

Learn how to launch high-quality software sooner.



Jama Software® is focused on maximizing innovation success in multidisciplinary engineering organizations. Numerous firsts for humanity in fields such as fuel cells, electrification, space, software-defined vehicles, surgical robotics, and more all rely on Jama Connect® requirements management software to minimize the risk of defects, rework, cost overruns, and recalls. Using Jama Connect, engineering organizations can now intelligently manage the development process by leveraging Live Traceability™ across best-of-breed tools to measurably improve outcomes. Our rapidly growing customer base spans the automotive, medical device, life sciences, semiconductor, aerospace & defense, industrial manufacturing, consumer electronics, financial services, and insurance industries. To learn more, visit us at: jamasoftware.com.