



EBOOK

# Selecting the Right Product Development Platform



# Table of Contents

EXECUTIVE SUMMARY .....	3
IDENTIFYING THE BUSINESS VALUE .....	7
EVALUATING DEVELOPMENT PLATFORMS .....	14
NARROWING DOWN THE OPTIONS .....	21
MAKING AN INFORMED DECISION .....	24



# Executive Summary

Manage Complexity to Build  
Better Quality Products Faster

Product complexity is growing at an exponential rate. The number of requirements needed to develop connected products makes documentation overly-burdensome and risky. Changes, rework and troubleshooting slow you down. Plus, the pressure is mounting from competition, customers and management. It's a perfect storm.

Managing this complexity to ensure you're mitigating risk is critical for safety and success. Lacking a good handle on your product development process can cause quality issues resulting in product recalls and sunk costs. For regulated markets it could mean being shut down. If your product teams are:

- Mired in rework
- Making trade offs without market context
- Stuck in unproductive meetings
- You're not moving as fast as you could be

The result is being late to market, which costs you valuable resources and lowers profits for your business. The pressure you feel from developing complex systems is likely reverberating throughout the entire organization. As leaders suddenly realize the cost of status quo, they scramble to restructure priorities and reinvent offerings to better capture market share.

#### BOTTOM LINE

**Better quality products must get out the door faster, but time-to-market and quality feel like competing challenges**

**What if you didn't have to compromise?**

This Buyer's Guide incorporates insights from Jama Software's more than ten years of experience partnering with forward-thinking product development teams. We've seen numerous organizations adopt product development solutions that help manage the complexity that comes with designing complex, connected systems. This allows them to:



Build higher-quality products with fewer defects and rework



Get to market more efficiently with fewer people and spending less money



Capitalize on opportunity faster through earlier launch dates and a prolonged market window

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 product development.

# Making the case for change

Working in a modern product development solution involves many parts of an organization and requires executive buy-in. The result can give your company a competitive advantage over those using antiquated systems. It's vital that this initiative aligns to strategic objectives and all parties involved have visibility into the potential business impact. Without it, your proposed solution is viewed as a cost rather than a value driver.

According to a recent study by Harvard Business Review Analytic Services, the large majority of business and IT leaders

are implementing digital products or planning to, and even more expect increased pressure as a result. If your company is not at least beginning the steps to understand the complexity in developing digital products, time is not on your side. Failing to act quickly will leave your organization even further behind.

Leaders in your organization probably already understand some of the barriers that stand in the way of building complex products. The problem is, they may not have the full picture of how these challenges affect your organization.

**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. Take those worksheets to the leaders and key stakeholders in your business. Let them clearly see the problem and be the champion for change.

## COMPETITION, TIME-TO-MARKET PRESSURE INTENSIFYING

**86%** of business and IT leaders expect somewhat significant increases in time-to-market pressure from implementing technologies

**89%** of business and IT leaders are either developing smart products or are planning on it





# Identifying the Business Value

Tools to Help Size the Situation  
in Your Organization

Throughout the past decade of working with organizations developing complex systems, four common product 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 a modern product development solution. 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 product development platform. If realized, it can radically change your business and be the competitive edge you need in today's market.

#### THE FOUR COMMON PRODUCT DEVELOPMENT PAIN POINTS

- Unproductive Work Time
- Lengthy Time-to-Market
- 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

<input type="text"/>	x	<input type="text"/>	x	<input type="text"/>	=	<input type="text"/>
Number of people reviewing and approving requirements		Average salary of those employees		Average percent of unproductive time		Current cost of unproductive work time or annual savings with an effective solution

### EXAMPLE

(Estimate 1 hour/day)



$$100 \times \$80,000 \times 12.5\% = \$1,000,000$$

# Lengthy Time-to-Market

Time-to-market and quality are usually seen as compounding challenges. Conventional wisdom says the quicker you release a product, the more likely it is to have defects, and vice versa. Understanding the impact of change, capturing decisions, communicating feedback and reusing existing intellectual property — all aspects that can help speed time-to-market — can be improved with a modern product development 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 product line and brand to be first-to-market with game-changing products.

## Calculate the ROI for Your Business

$$\left( \text{Months to deliver product} \times \text{Cycle time improvement} \right) \times \left( \text{Expected year one value of product} / \text{Months in a year} \right) = \text{Cost of doing nothing or revenue realized by launching 2 months faster}$$

### EXAMPLE

$$\left( 24 \times \$5,000,000 \right) \times \left( 10\% / 12 \right) = \$1,000,000$$

# 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 product at a time, repeat this calculation for each and add up the savings for a holistic view.

## Calculate the ROI for Your Business

<input type="text"/>	x	<input type="text"/>	x	<input type="text"/>	=	<input type="text"/>
Cost to bring product to market		Percentage of total rework		Percentage of rework caused by requirements errors		<b>Current cost of rework or annual savings with an effective solution</b>

### EXAMPLE

$$\$5,000,000 \times 30\% \times 50\% = \$750,000$$

# 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 products could have devastating consequences.

## Calculate the ROI for Your Business

	x		x		x		=	
Number of requirements		Percentage of requirements with defects		Number of days to fix a defect		Employee cost per day		Current cost of defects or annual savings with an effective solution

### EXAMPLE

$$2500 \times 50\% \times 2 \times \$320 = \$800,000$$



“

Organizations cannot make the necessary changes by adopting tools alone; they need to change their cultures as well. New tools catalyze the change by removing barriers and making new processes more intuitive.

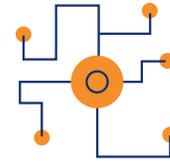
Forrester, *Breakout Vendors: Agile Requirements Management*, 2016



# Evaluating Development Platforms

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. Compliance and Functional Safety

Build what you set out to build and prove it meets regulatory standards



### 3. Implementation and Configuration

Streamline the rollout process and gain value quickly



### 4. Customer Experience

Get the help you need from someone who cares



### 5. Adoption

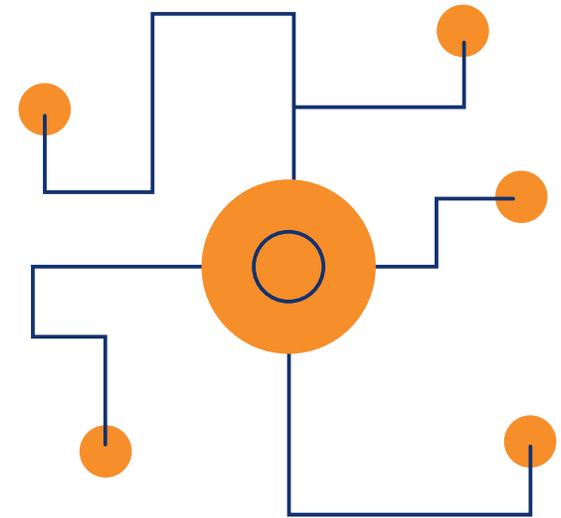
Choose a straightforward solution so people actually use it

# 1. Development Process

From defining and prioritizing, to reviewing, negotiating and approving, to verifying and validating changes of product capabilities and characteristics, product development is an ongoing, complex process. A single source of truth and visibility helps minimize interpretation – often a top barrier to building a successful product.

You'll get the most value from a solution that:

- **Captures requirements in a single location.** One centralized system of action limits surprises by allowing teams to define, review, verify and validate requirements cross-functionally from a project's outset through completion.
- **Facilitates structured collaboration.** Connected teams have clarity on progress and change, as well as key decisions made during the development process.
- **Simplifies change management.** Modern requirements management enables team members to see relationships and understand the impact of change both up and down stream.
- **Reduces the burden of reviews and approvals.** Modern technology focuses resources on relevant information, thereby decreasing demands on schedules and shrinking time-to-market.
- **Incorporates test management.** Advanced solutions provide visual confirmation that every requirement has been verified and validated so you know the product is performing as specified.
- **Leverages reuse of intellectual property (IP).** A secure, centralized, synchronized IP library accelerates new product innovation. It can fast-track development of product line variants and product families that leverage shared IP.



## 2. Compliance and Functional Safety

When regulatory compliance is necessary, you want a solution you can trust. Certifications by respected safety organizations demonstrate that a software is “fit-for-purpose” – meaning, whether or not the solution can be trusted for developing safety-related products according to standards such as ISO 26262 and IEC 61508 – in the design and development of safety-critical products. Likewise, a platform’s features can inherently ease the process of proving compliance.

A respectable solution instills trust through:

- **Credible certifications.** International safety authorities like TÜV SÜD assess the internal processes of organizations creating development solutions to identify if the software being built is fit-for-purpose.
- **Traceability and impact analysis.** A modern solution traces requirements from end-to-end so everyone sees the impact of changes throughout development, ensuring the resulting release fulfilled its requirements.
- **Integrated verification and validation.** To prove compliance, you need evidence that each requirement was tested and your release meets every standard.
- **Documentation.** Compliance audits require you to provide product development documentation. You can allow access to your solution, or you can export the pertinent data — including traceability information — and exclude noise that may cause unnecessary risk.

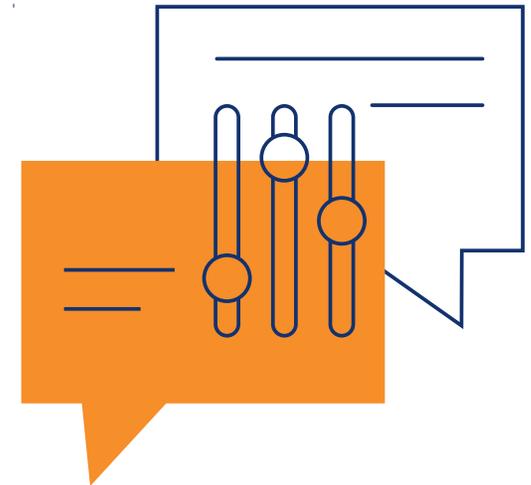


# 3. Implementation and Configuration

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. From a technical perspective, for instance, you might need help facilitating installation, migrating data, developing reports or architecting and building extensions.

You need a solution partner that offers:

- **Either hosted or on-premises solutions.**  
There are benefits to both, but the ultimate decision hinges on what's right based on your organization's needs today and in the future.
- **Advanced privacy and security practices.**  
Vulnerability scanning and penetration tests are some examples of how providers should be protecting your IP. Cloud providers should also provide AWS cloud platform and leading data protection procedures.
- **Expert assistance** to get you started on the right foot. Knowing what questions to ask to align the software to the right processes is invaluable to success.
- **Long-term optimization assistance.**  
As your team undergoes its product development transformation, processes will improve and changes to licenses or platform structures may need to be adjusted.
- **Integration with popular developer tools.**  
Real-time data sync with tools you're already using enhances a solution's functionality for enterprise user management, testing and custom reporting.
- **A "best-in-breed" solution.** Taking a best-in-breed approach ensures you have a partner who's fully vested in product development.



## 4. Customer Experience

Customer experience should be a product's driving force – not an afterthought. A product 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.
- **Quick and consistent support.** You need a support team that makes you a priority. Knowing a specific person is there during hours that fit your business' needs gives you peace of mind that you'll get the assistance you need, when you need it.
- **Product development experts.** Sometimes you need consultants to help with getting started and maximizing value from a new solution. Make sure you're working with experts in process alignment, deployment and adoption, training and optimization.
- **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.
- **An active, user-led customer community.** The ability to leverage insights from your peers – those solving the same challenges as you – is priceless.

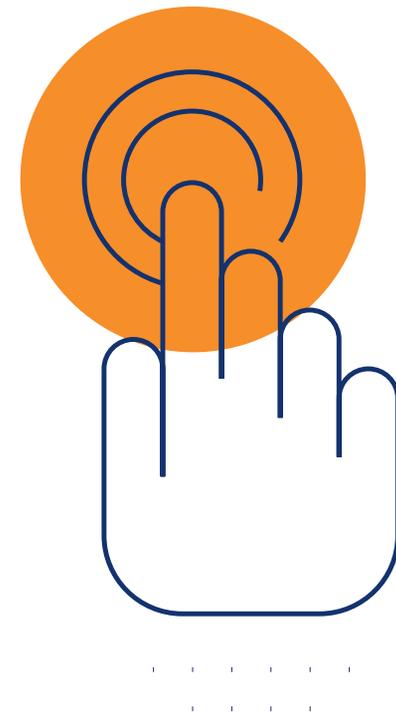


## 5. Adoption

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 working, 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. A solid solution will offer named licenses for core users and floating licenses for those who access it less frequently.
- **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.
- **Gives you an opportunity** to test drive the software through a trial. Key stakeholders can get their hands dirty interacting with both the functionality and one another to determine how relatively seamless it is to use.





# Narrowing Down the Options

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 product development.

## ESSENTIAL FEATURES AND FUNCTIONALITY

JAMA SOFTWARE    VENDOR #2    VENDOR #3

### Best-in-Breed Product Development Tools

Industry-specific expertise in product development .....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Review functionality captures discrete elements of a larger work effort or formal approvals .....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pre-defined safety-critical workflows lower the risk and cost of compliance .....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
On-premises and cloud integrations with common ALM, test and MBSE tools .....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Open and documented APIs support third-party tools .....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### Ease of Use

Simple collaboration for all users through the application and via email .....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Enforceable workflows control viewing and editing of data .....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Intuitive browser-based interface with familiar social context and interactions .....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### Verification and Validation

Test functionality integrated into the core product .....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ability to view, manage and relate test data to requirements and specifications within the system .....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Verification and validation activities automatically create and link defects .....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Live, Actionable Traceability**

Real-time visibility into decisions and input — past and present — maintains context throughout the product lifecycle and beyond .....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Impact analysis shows decision impact up and downstream, enabling real-time action .....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Real-time transparency indicates status across families of products and releases .....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In-system traceability is a by-product of doing work, eliminating the need to manually build trace reporting .....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Reuse**

Existing content, product templates and associated relationships are reusable in subsequent projects .....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reused information syncs regardless of location .....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manage complex product lifecycles through multiple versions efficiently and accurately .....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Customer Success**

Singular focus on your team, process and aligning the solution to your product development needs .....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Professional services team focuses on adoption, enablement and time-to-value acceleration .....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comprehensive customer care offerings, including an online community, tutorials and technical support .....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



# Making an Informed Decision

Don't Sacrifice Quality,  
Speed or Safety

# Launch High-Quality Products Sooner

Outdated tools and methodologies for building complex systems are no longer an option. Getting products 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 rapidly-growing competitors will.

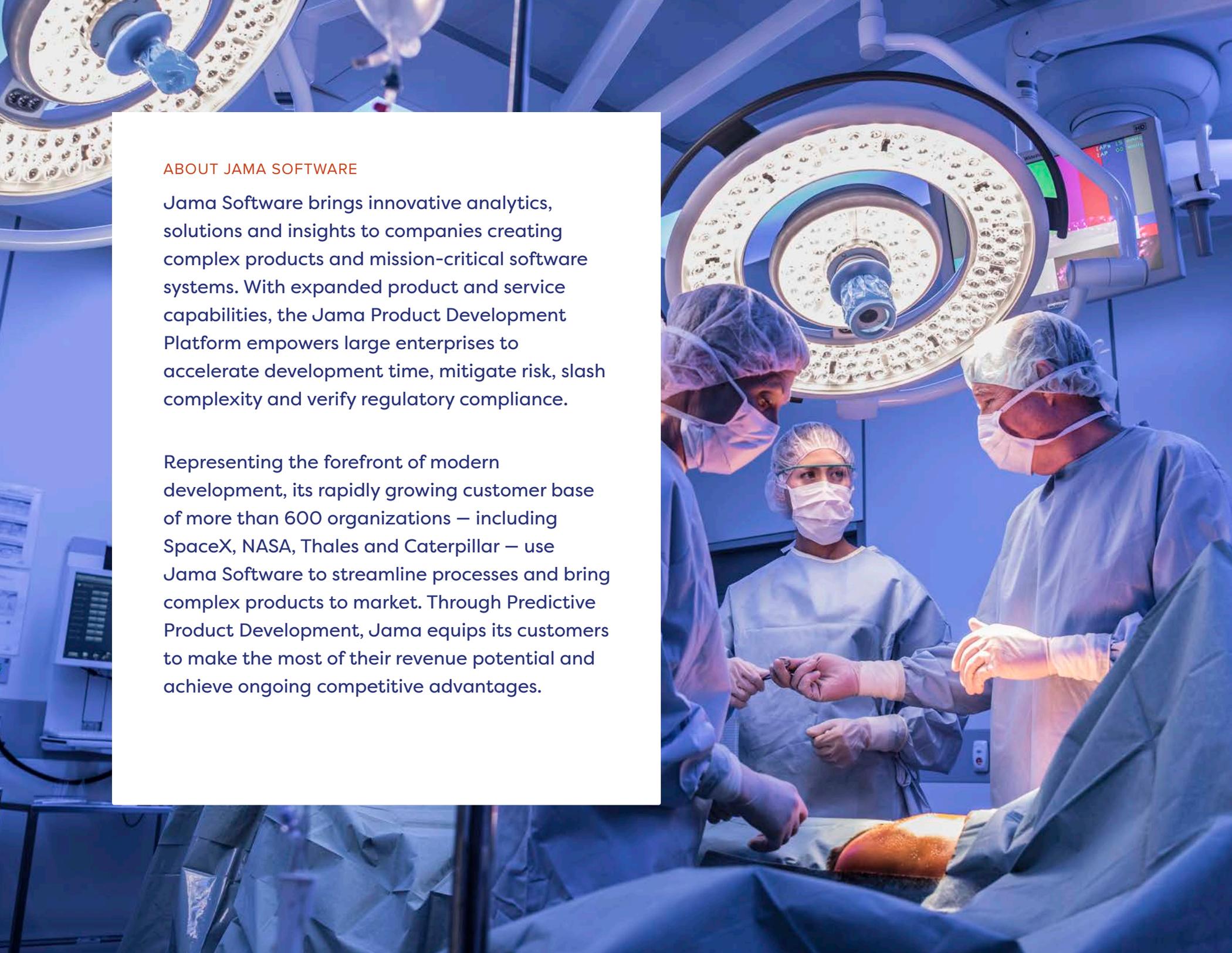
McKinsey looked at companies in the top quartile for revenue growth, EBIT growth and return on digital investment, and found that 80% invested heavily in digitizing business processes (compared to 21% of others).<sup>1</sup> And the more aggressive a company is in this transformation, the bigger the effect on revenue and profit growth.

A first-rate 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 and help you prove compliance or functional safety.

**Quality and speed don't have to be a compromise. Learn how to launch high-quality products sooner.**



<sup>1</sup> The case for digital reinvention. McKinsey & Company, 2017



## ABOUT JAMA SOFTWARE

Jama Software brings innovative analytics, solutions and insights to companies creating complex products and mission-critical software systems. With expanded product and service capabilities, the Jama Product Development Platform empowers large enterprises to accelerate development time, mitigate risk, slash complexity and verify regulatory compliance.

Representing the forefront of modern development, its rapidly growing customer base of more than 600 organizations – including SpaceX, NASA, Thales and Caterpillar – use Jama Software to streamline processes and bring complex products to market. Through Predictive Product Development, Jama equips its customers to make the most of their revenue potential and achieve ongoing competitive advantages.