



# Look Before You Leap: Understand The Trade-Offs When Choosing Test Automation Software

Commercial Testing Solutions Reduce Manual Testing And Costs  
To Increase Confidence And Deliver Transformational Benefits

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## As Automated Software Testing Becomes More Complex, Selecting The Right Platform Is Essential

As companies continue their digital journeys and accelerate the building and deployment of modern applications, testing automation is becoming the norm. Test automation has become more complex to enable both technical and nontechnical testers to work collaboratively with developers, other testers, and business analysts. This means product teams must shift from best-of-breed testing tools or suites to integrated testing platforms that offer as many test automation capabilities in one place as possible.<sup>1</sup>

Keysight commissioned Forrester Consulting to survey 209 software testing decision-makers at global enterprises to learn how they manage and measure their organizations' current testing capabilities and how these factors are leading them to their future testing platform.

### Key Findings



Companies must mature their automation strategy to meet customer demands and deliver at scale. They struggle to weigh trade-offs of testing solutions built in-house and commercial ones.



Many decision-makers are concerned with cost and ability to implement and maintain a new platform. Consequently, automation growth is stalled and companies are unable to deliver differentiable, high-quality products.



Embracing commercial solutions enables companies to keep costs down while delivering transformational benefits that meet the future needs of the business.

## Organizations Must Find Which Testing Solution Offers The Most Benefits

Today, respondents' organizations are primarily concerned with making sure their testing solutions work and are prioritizing functional quality (58%) and performance (66%). The objective is to align the results of better testing with goals for higher-quality products and increased customer satisfaction.

As decision-makers consider how best to meet these goals, they inevitably question the maturity and effectiveness of their software-testing platforms and many are forced to consider the trade-offs of commercial solutions vs. those built in-house.

“What are the technical goals for your testing programs and platforms?”

“What are the business goals for your testing programs and platforms?”



66%

Performance — Response time is within acceptance criteria

55%

Improve customer satisfaction with higher-quality products

58%

Functional quality — Ensure releases meet functional requirements

42%

Provide clear and transparent testing data to the product development teams

39%

Reduce effort spent on performing manual testing

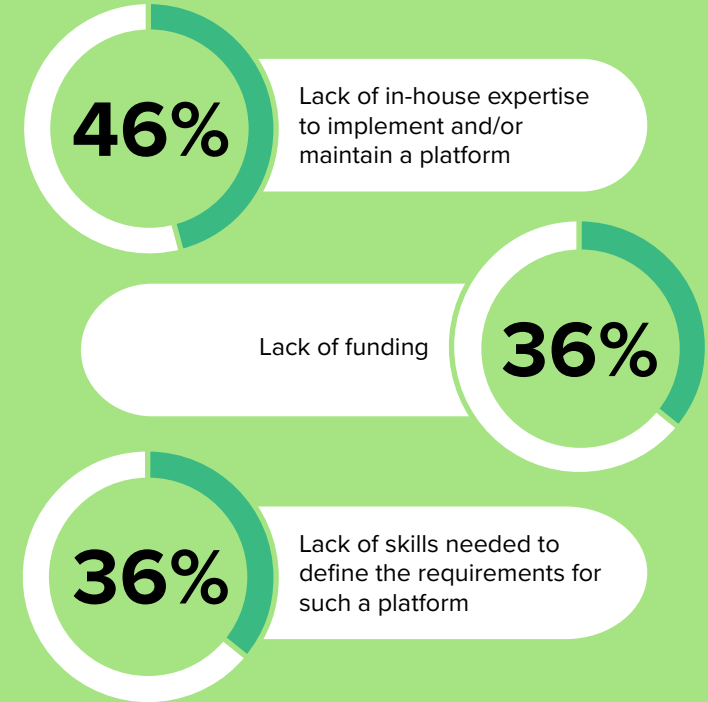
## In-House Solutions Require More Tools And Manual Testing

Sixty-three percent of respondents with in-house solutions use three or more development tools or automation solutions to conduct their testing, while the majority with commercial solutions only require one or two to meet their needs. Despite having more tools at their disposal, nearly 70% of in-house solution users admit they are doing a lot of time-consuming and expensive manual testing to bridge gaps.

To continue their automation journey, those with in-house solutions need expertise and funding — but both are in short supply. Decision-makers report their ability to invest in more effective software testing solutions has stalled because they do not have the right expertise needed to define, implement, and/or maintain a new platform. Additionally, funding for software-testing technologies is lacking, making it difficult for organizations to implement the solutions they need to effectively scale and meet future needs.

## “What barriers are preventing your company from investing or continuing to invest in automated testing technologies?”

● Built entirely/primarily in-house



## Inability To Scale Is A Tipping Point For Organizations With Solutions Built In-House

When considering their options for software testing platforms, respondents note their companies are concerned most with cost and ease of scalability. While solutions built in-house may initially appear to be more cost-effective, they underdeliver on these promises as buyers realize the reality of hidden costs associated with their implementation and maintenance.

Because respondents' organizations with in-house solutions are struggling to scale and wasting resources on manual testing, many respondents are anticipating investments in alternative automation platforms. Thirty-seven percent of respondents with in-house frameworks believe their organizations will invest in more commercial platforms in the next 12 months.



**76%**

of respondents with solutions built in-house say their firms' current solution will limit them when scaling to meet future requirements.



**37%**

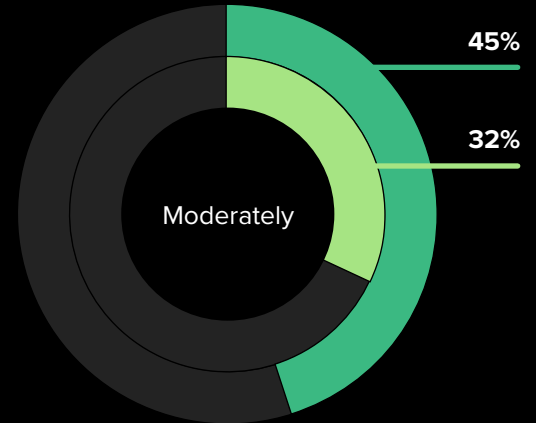
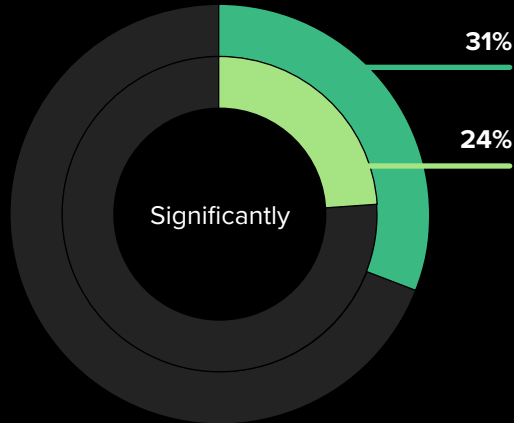
of respondents with solutions built in-house say their firms will be investing in commercial solutions in the next 12 months.

## In-House Solutions Struggle To Support Scale

As organizations continue to evaluate the pros and cons of software testing solutions that are either built in-house and commercially bought, cost and ease of scalability are primary concerns and considerations. Those with commercial solutions are more sensitive to cost as nearly half report they are experiencing a lack of funding, while those with in-house solutions are worried about scalability, admitting their current solution will limit their ability to scale in the future (76%). When asked why they felt their test solution would not be able to support future scaling, decision-makers say their solutions lack the capabilities needed to scale and they do not have the expertise needed to be successful.

“How much will your current test solution limit you when scaling to meet your future requirements?”

- Built entirely/primarily in-house
- Off-the-shelf commercial test automation platform



## C-Level Buy-In And ROI Improvements Are Critical For Success

To be more successful with software testing, respondents say they need their executives to understand the importance of testing so they can support an enterprisewide strategy for better integration of automated platforms in build processes. When organizations adopt solutions that allow them to automate the basics, they can move on to more advanced challenges, such as implementing additional tests to improve quality. Evaluating and redesigning operational processes can improve ROI for the testing team.

Additionally, organizations need solutions that align with their top technical goals of ensuring functional quality, improving performance, and meeting regulatory requirements. Decision-makers in the survey using commercial platforms are more satisfied with their ability to meet functional requirements and regulatory standards.

### “What does your organization currently need to be more successful with testing automation?”

- Built entirely/primarily in-house
- Off-the-shelf commercial test automation platform



Development of an enterprisewide testing automation strategy



Assistance with integration in our build process



Executive buy-in of the importance of testing



Proven ROI for our business case to support new investments



Operational processes evaluation and redesign

## Commercial Solutions Reduce Costs And Resources Spent On Manual Testing To Meet Business Goals

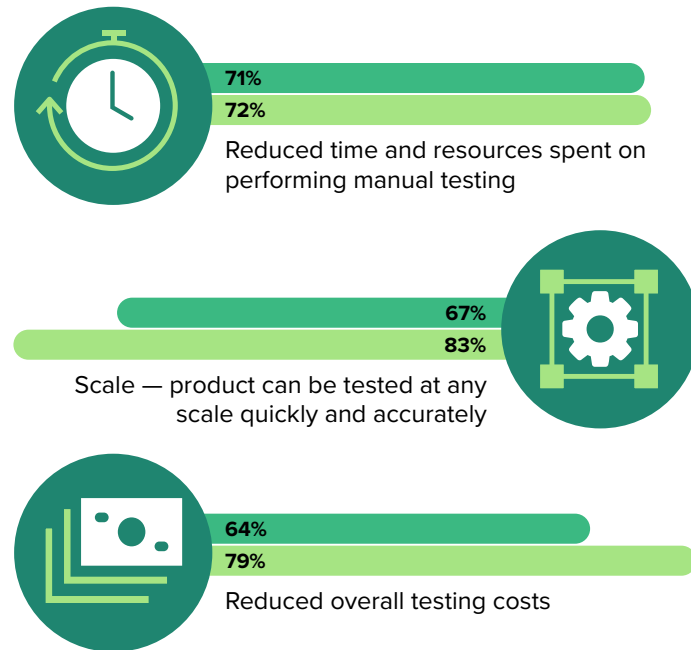
Decision-makers in the survey using commercial solutions are more optimistic about how their investment in software test automation impacts their business. Those using commercial solutions say reduced testing costs was the biggest business improvement their organizations expected, and the impact was significant or transformational for their organizations (79%). Additionally, commercial solution respondents expect to reduce time and resources spent on manual testing (72%), positioning them to meet one of their top business goals for their testing initiatives.

In contrast, respondents with in-house solutions expect their automation investments will have a less significant impact on their organization's ability to scale and reduce overall testing costs than their peers with commercially built solutions.

## Top Benefits Expected From Investing In Testing Automation Technologies

(Showing “Significant benefit” and “Transformational benefit”)

- Built entirely/primarily in-house
- Off-the-shelf commercial test automation platform





## Conclusion

To be successful with software testing and deliver high-quality products to customers, organizations need a solution that will allow them to scale adequately and affordably to meet current and future needs and requirements. Respondents adopting a commercial testing solution found it allowed them to:

- Reduce time spent performing manual testing, freeing up time and resources for more mature challenges.
- Scale more quickly and accurately at any level, making sure organizations can meet future requirements without sacrificing customer experiences.
- Reduce their overall costs of testing, resulting in transformational benefits for their organization.

### **Project Director:**

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### **Contributing Research:**

Forrester's Technology Application  
Development research group

## Methodology

This Opportunity Snapshot was commissioned by Keysight. To create this profile, Forrester Consulting developed custom survey questions asked of 209 software testing decision-makers at global enterprises. The custom survey began and was completed in December 2023.

### ENDNOTES

<sup>1</sup> Source: "The Forrester Wave: Continuous Automation Testing Platforms, Q4 2022," Forrester Research, Inc., December 13, 2022.

### ABOUT FORRESTER CONSULTING

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## Demographics

LOCATION	
United States	61%
Canada	11%
UK	10%
France	9%
Germany	9%

RESPONDENT DEPARTMENT	
IT	36%
Operations	25%
Product development/ program development	15%
Quality assurance	12%
Research and development/product management	11%

COMPANY SIZE	
20,000 or more employees	23%
5,000 to 19,999 employees	33%
1,000 to 4,999 employees	44%

INDUSTRY	
Technology and/or technology services	20%
Financial services and/ or insurance	18%
Retail	16%
Healthcare	16%
Transportation and logistics	11%
Government	10%
Aerospace and defense	9%

Note: Percentages may not total 100 because of rounding.

A hand is shown in silhouette, pointing towards a complex digital interface. The interface features a large circular gauge with multiple segments, some of which are highlighted in green. In the center of the gauge are two interlocking gears. The background is dark with various data visualization elements, including bar charts and circular patterns, all rendered in a dark green and grey color palette. The overall aesthetic is futuristic and technical.

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