



Managed Testing for Enterprises, Hi-Tech, And Software Companies





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Introduction

2020 witnessed one of the largest cybersecurity attacks in history. Cybercriminals attacked over 80% of global enterprises by exploiting the vulnerabilities in their software infrastructure. “Enterprises across the world experienced a whopping 630% increase in cloud breaches, 600% in phishing attempts, and 148% in ransomware attacks” – says the latest report by [Cyware](#). As the COVID pandemic impacts cross-border and intra-national mobility, businesses rely on online channels for managing operations, enabling sales, reaching customers, and receiving payments. Software failures triggered by internal bugs have wreaked havoc on businesses causing multi-trillion dollar losses, data seepage, and identity theft.

Curbing fatal software failures

Businesses cannot overlook software failures and IT snags in today’s world. Miniscule software glitches have had disastrous impacts even on tech giants such as Yahoo, Cisco, Apple, and Facebook, negatively impacting customer experience, brand reputation, and product quality, resulting in revenue loss.

The best way for enterprises, hi-tech and software companies to curb catastrophic software issues is by deploying robust Quality Engineering (QE) and Quality Assurance (QA) systems. Agile testing methodologies and teams play a significant role in reducing the risk of bugs, thus improving performance, stability, and application security.

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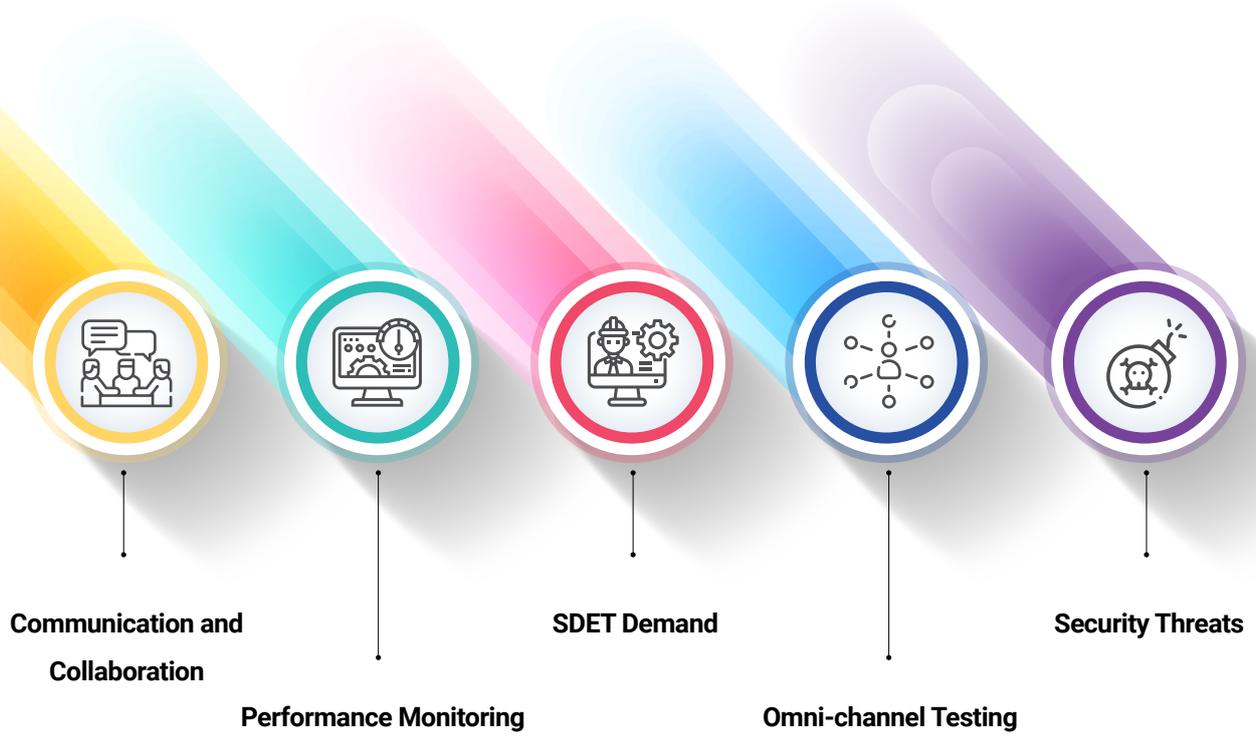
Common QE Challenges

Implementing an effective QE strategy is not a simple task as it often comes with complex challenges. QE teams should focus mainly on the functional and non-functional testing requirements based on which the entire software can be built. Only when the requirements are received and apprehended thoroughly, the developers and testers will be able to develop the software as per customer needs and expectations.

Functional involves Smoke testing, Sanity Testing, Integration Testing, User Acceptance and Regression testing whereas **Non-Functional** involves Performance Testing, Scalability, Usability Testing, Load Testing, Stress Testing, Compliance Testing, and Disaster Recovery Testing.

Precisely, functional testing focuses on customer’s requirements whereas Non Functional testing focuses on customer’s expectations. In order to perform these testing processes, it is imperative for QE teams to possess excellent skillset and experienced resources.

Software Testing and Quality Assurance are undoubtedly a huge part of the SDLC process and developers and testers need to stay updated to cope with the constantly changing technology and user expectations.





The following are some of the operational challenges in QE that developers and testers face on a daily basis in software testing.

Communication and Collaboration

The key to a successful project is proper communication of goals, timelines, change requirements, and expected deliverables between cross-functional team members. There must be seamless integration and collaboration between product owners, DevOps, and QA teams to identify and fix errors efficiently. Developers and business teams must avert counterproductive tussles that impacts communication and collaboration between the teams involved.

Performance Monitoring

Over 53% of consumers switch to competitor products if the webpage takes more than 3 seconds to load. So big is the stake when enterprises do not test their web and mobile applications and interfaces for performance. Testing teams must monitor software performance throughout the lifecycle to ensure the quality, load speed, and stability of the application.

SDET Demand

The tradition of coding followed by testing has changed today. The rise of agile testing and the need for quicker time-to-market has triggered the demand for Software Development Engineers in Test (SDETs). The engineers possess skillset and ability to handle functional, test automation, API automation, Performance Testing.

Omni-channel Testing

New-age customers demand seamless and consistent experiences across multiple channels. Testing apps for multi-device and multi-configuration compatibility is vital to achieving customer satisfaction. Apps must be tested for multi-system accessibility, usability, performance, and security.

Security Threats

App and enterprise security is a critical QA issue. Faulty software is more likely to create security vulnerabilities for enterprises. Testing teams must ensure that software design and development are robust enough to avert security attacks and recover quickly from any breach incidents.

Do you relate to any of these QE challenges and looking for a testing partner who can help you overcome them like a bawse?

Reach out to us today!



Managed Testing Resolves QE Challenges

Enterprises are resorting to agile QA, automated testing, and re-engineering to resolve the QE challenges. But building and maintaining strong testing teams can be a daunting task for businesses in terms of cost and effort. Hence enterprises leverage Managed Testing Services (MTS) for hands-on QE that covers the entire Software Development Lifecycle (SDLC) and risk management. It continuously monitors quality improvement using unbiased procedures and effective methodologies. Managed testing helps enterprises save millions of dollars in cost and effort by developing and maintaining excellent testing teams and processes.

Managed Testing aims to achieve optimum testing results by taking complete ownership of all the testing activities for the organizations that desperately need a testing partner.

Achieving QE Excellence through Hyper-Testing

Hyper-testing fixes all the challenges Independent Software Vendors (ISVs), high-tech companies, and large-scale enterprises face in QE. It provides a unique testing methodology for achieving QE excellence through optimized, agile, scalable, and consistent software delivery standards. Hyper-testing focuses on collaborating SDETs and testers with excellent skills in functional automation, domain testing, security, and non-functional testing, and Artificial Intelligence (AI) architecture.

Hyper-Testing Lifecycle

Hyper-testing adopts an agile and unified approach to designing and executing test strategies. Also, to enhance end-to-end testing of all application layers, it addresses the non-functional requirements (performance, security, and load, multi-platforms) using world-class tools that lower Total Cost of Ownership (TCO) and increase Return On Investment (ROI). It focuses on deploying innovative tools, automated QA processes, test optimization, and test environment consolidation to ensure maximum test coverage and quality at reduced costs. It enables complete visibility across the SDLC, facilitating comprehensive defect analysis, and rectification.

Hyper-Testing combined with Managed Testing is like a silver bullet to obtain most accurate results within much lesser time.

Sounds interesting? [Find out more here](#)



Why Hyper–Testing is the Undisputed Hero?

The time taken to create customer value and the time taken to deliver the product to the market is a critical winning differentiator. By reducing time-to-market, cost, and effort, Hyper-Testing enables high-tech and ISV to generate more value, achieve higher customer satisfaction, enhance product delivery, and scale up businesses in no time.

The following features are significant reasons why enterprises choose Hyper-Testing over other testing methodologies.

Continuous Testing and Continuous Integration

Bug detection during production costs seven times more to fix than the bug identified in the design phase. One way to drastically optimize cost is by adopting a rigorous Continuous Testing (CT)/Continuous Integration (CI) approach while testing.

Hyper-Testing takes the CT/CI game to the next level by converging and automating testing cycles and creating a quick and continuous feedback loop at every developmental stage. By integrating and implementing frameworks along with cloud-based testing as early as possible, Hyper-Testing saves time, cost, and effort.

Shift–Left Testing & DevOps Approach

Testing early and often is the mantra to effective software testing and debugging. Hyper-Testing, an agile-based test automation strategy, adopts the shift-left testing approach by pushing testing teams to collaborate with stakeholders and fix bugs from the initial SDCL stages. Hyper-Testing enhances speed and agility through its DevOps approach. Over 54% of global enterprises have adopted DevOps by automating build, deployment, and testing. Demanding high collaboration from coding, testing, and operation teams, Hyper-Testing breaks the barriers in conventional testing methodologies and accelerates the testing process and helps enterprises reduce effort and Cost of Quality (CoQ).

Artificial Intelligence (AI) and Machine Learning (ML) Adoption

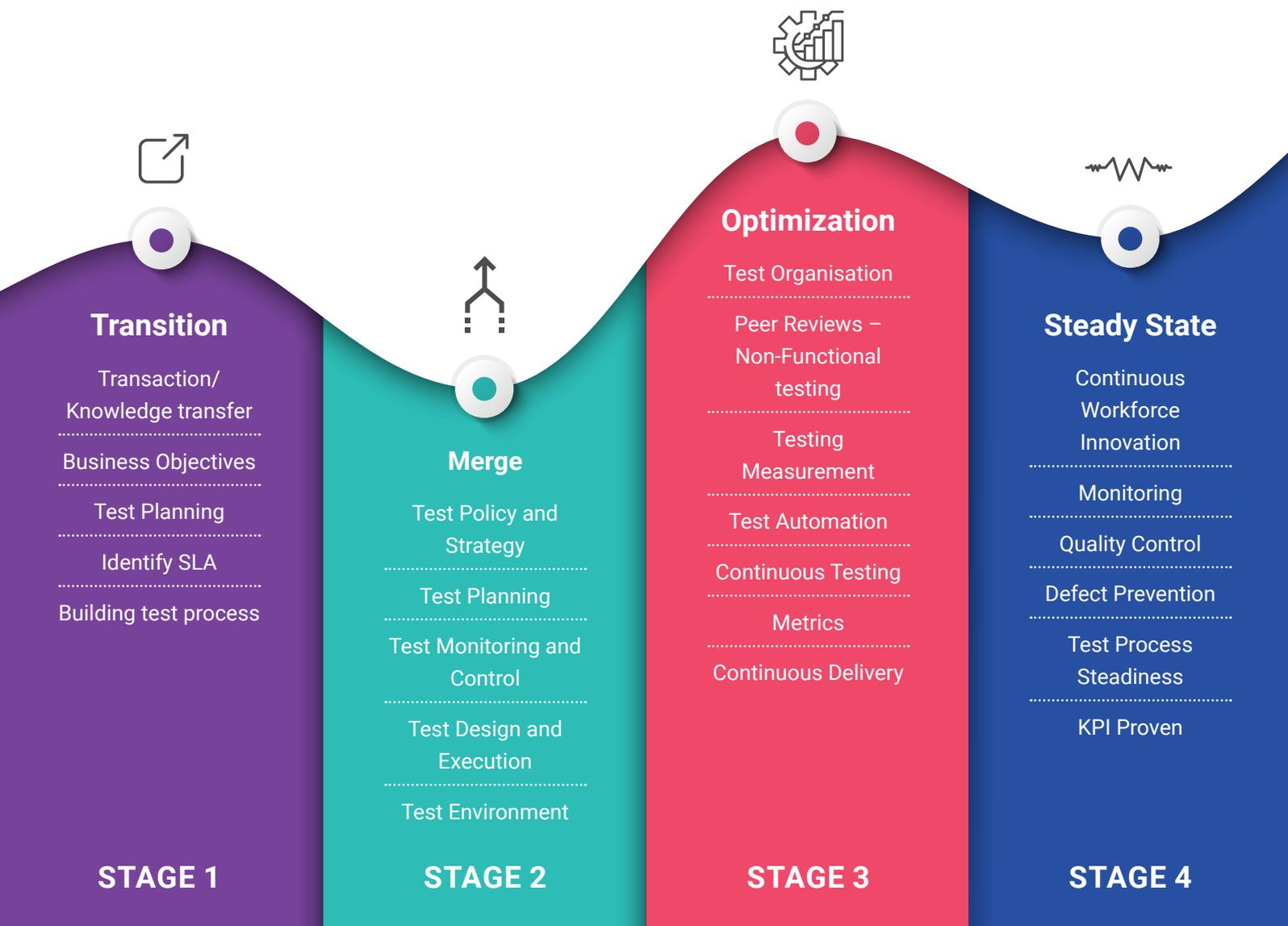
AI-led test automation increases testing teams' productivity and their ability to adapt to requirement changes. Hyper-Testing leverages AI and ML led automation to ensure shorter release cycles, faster time-to-market, and lesser effort. By leveraging reasoning, problem-solving, and repetitive pattern analysis, Hyper-Testing reduces automation efforts using self-healing scripts and a high defect analysis strategy for faster delivery and proactive customer service.



Roadmap for Achieving QA Maturity

Strategies and approaches for implementing and institutionalizing QA, right from the initial stages of SDLC, constitute the roadmap to QA maturity.

The following illustration shows the four important stages involved in reaching QA maturity. viz., transition, merge, optimization, and steady-state. These stages have helped several enterprises, high-tech, and software businesses achieve optimized QA automation.





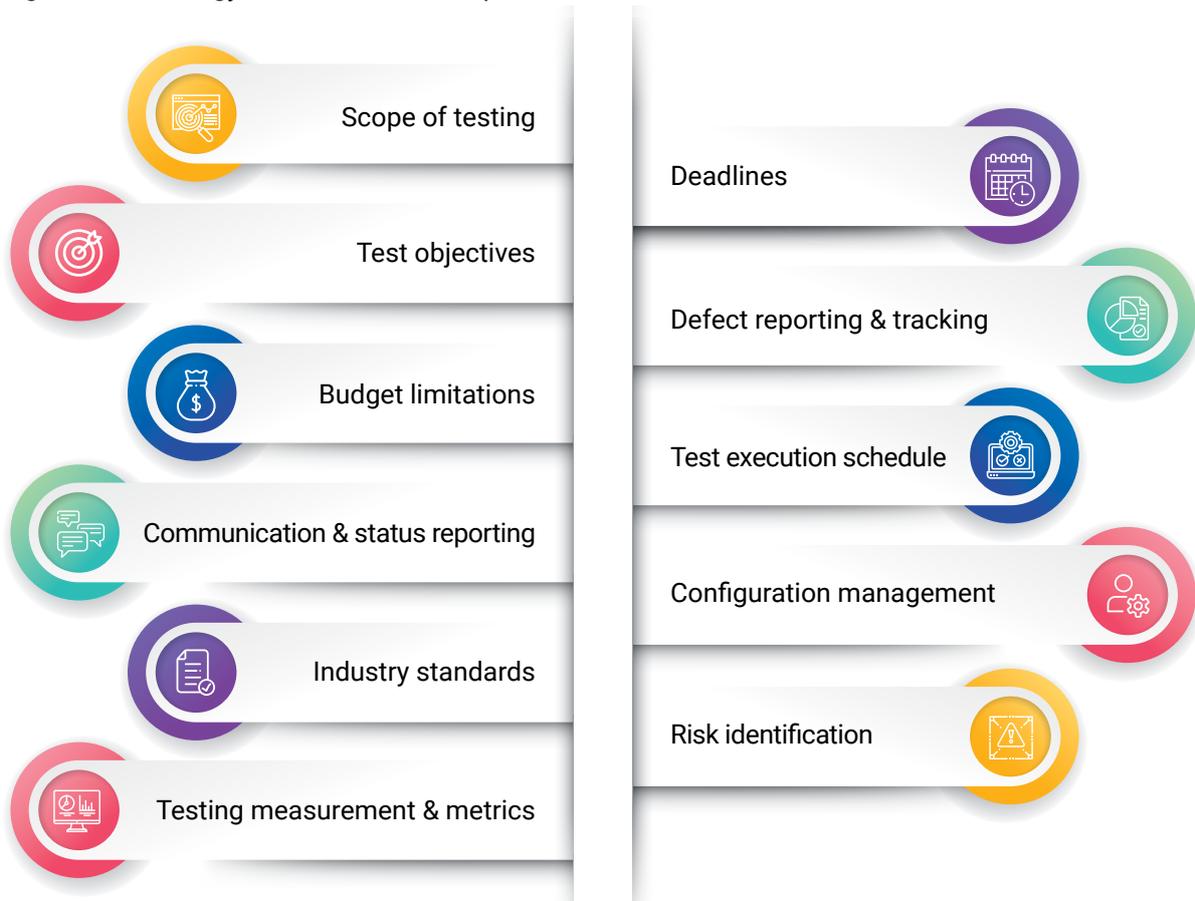
Why You Need a Sound Testing Approach?

Over 88% of customers switch to competitor products or services when the web or mobile app loads or responds slowly. An effective testing strategy leveraging the agile, DevOps, and Shift-Left approach is imperative for enterprises to keep pace with the rapidly evolving technology innovations and customer expectations. To win customer confidence and provide enhanced experiences, enterprises must launch bug-free applications and products at an optimal time without delays.

Lack of right testing processes, inexperienced testing resources, and imperfect requirement gathering will broadly impact testing efficiency. A mature testing approach should not just find defects, but ensure that the business objectives and needs are met while debugging.



A good test strategy must cover the components listed below.



Why Managed Services?

Gone are the days when enterprises grappled with setting up expensive and workforce intensive, in-house QA teams. As technology advances along with skyrocketing customer demands and expectations, businesses want to focus their time and effort on strategizing product development, innovation, market expansion, and customer experience.

However, businesses are cognizant of the fact that a single application failure can mean disaster, costing millions in lost sales, complex reparation, and negative customer experience. They understand the criticality of QA automation in ensuring the smooth functioning of software applications and quick product launch/rollouts without threatening business continuity at any point in time.

Challenges that Managed Testing Services Resolve

Leveraging Managed Testing Services helps enterprises, high-tech and software companies resolve complex QA challenges. Though hailing from cutting-edge industries, QA, QE, and testing is not the core strength for many businesses.

An in-house QA team with a specialized skill set and experience is quite a daunting task for enterprises. Test environments that provide multi-system, end-to-end testing can be quite expensive and multifaceted. Managed testing eliminates all these challenges by taking complete responsibility and ownership for testing and quality assurance.

Managed testing effortlessly eliminates the challenges involved in Quality Engineering by taking complete responsibility and ownership for testing and quality assurance.

Wondering how we manage to achieve it?

Here's how!



Establishing a QE Mindset

The agile transformation from legacy to new-age testing methodologies demands a re-evaluation of testing approaches, tools, frameworks, and team skillsets. Driving software quality assurance and team maturity, Quality Engineering emphasizes creating a cultural shift within development and testing teams.

Focusing on quality right from ideation, design to final production stages, QA engineers or SDETs use the shift-left approach to identify errors and bugs from every nook and cranny of the code and fix them all before integration. The ability to handle server processes, API tools, and code validation, as early as possible, is crucial for a good QA team.

Compatibility of Hyper-Testing and Managed Services

Enterprises require a holistic, agile testing approach to re-engineer the managed testing process like Hyper-testing, an AI/ML-enabled QE solution that facilitates managed testing by striking the optimal balance between application quality and time-to-market. It helps to exceed customer expectations, launch products at extraordinary speed, and manage the complexities of high-tech and software products.

Hyper-testing enables Managed Testing Services by offering the following benefits.

- **360° view of the application tested**
- **Seamless coordination between distributed teams**
- **Access to comprehensive QA dashboard/metrics**
- **Shortened testing feedback cycle time by 40%**
- **Access to 1000+ devices/platforms in the cloud**
- **Slashed CoQ by 30%**
- **High ROI within six months**

The managed testing services offered by Hyper-Testing automate the QA process and fit the QA maturity model.

Artificial Intelligence (AI) Enabled Test Automation

By redefining test automation, AI-enabled testing helps to improve the productivity of testing teams. AI-enabled automation frameworks ensure quick bug fixes, faster time-to-market, and reduced QA costs through the following features.

- **Self-healing scripts to identify object-level changes**
- **Analysis of the test automation results**
- **Defect analytics on the severity of the bugs**
- **Auto defect logging**
- **Build analytics on the execution history/trace**
- **Live streaming of the test results**

Future-Proofed Roadmap to Cost-Efficiency

Optimize Cost through Lean Automation

Error or mistake proofing is a fundamental lean concept that plays a crucial role in managing product quality and eliminating elaborate rework. Test automation is a lean mechanism that is specific to the software and high-tech industry. Economic meltdowns and global turmoil have taught enterprises the importance of going lean once again. Businesses today are being innovative for cost-efficiency by going lean on their QA and QE approach. They are eliminating bulky manual testing methods that add no value to the ultimate goal of reducing time, cost, and effort.

Striking the right balance between application quality and time-to-market, Managed Testing Service helps enterprises, ISVs, and high-tech businesses to benefit from lower CoQ and higher ROI. Its zero-defect methodology and predictive analysis provide quality excellence to the SDLC.

Hyper-Testing offers a lean, agile, and automated testing process with flexible teams that can be ramped up and down, across on-site, off-site, near-shore, and off-shore working environments. This QE solution further helps to optimize costs by consolidating licenses, leveraging open source tools, taking a DevOps approach, and ensuring high service quality. By mitigating operational and quality risks, lean automation helps enterprises to lower cost, improve quality, and accelerate innovation.





Five Major Benefits of Managed Testing

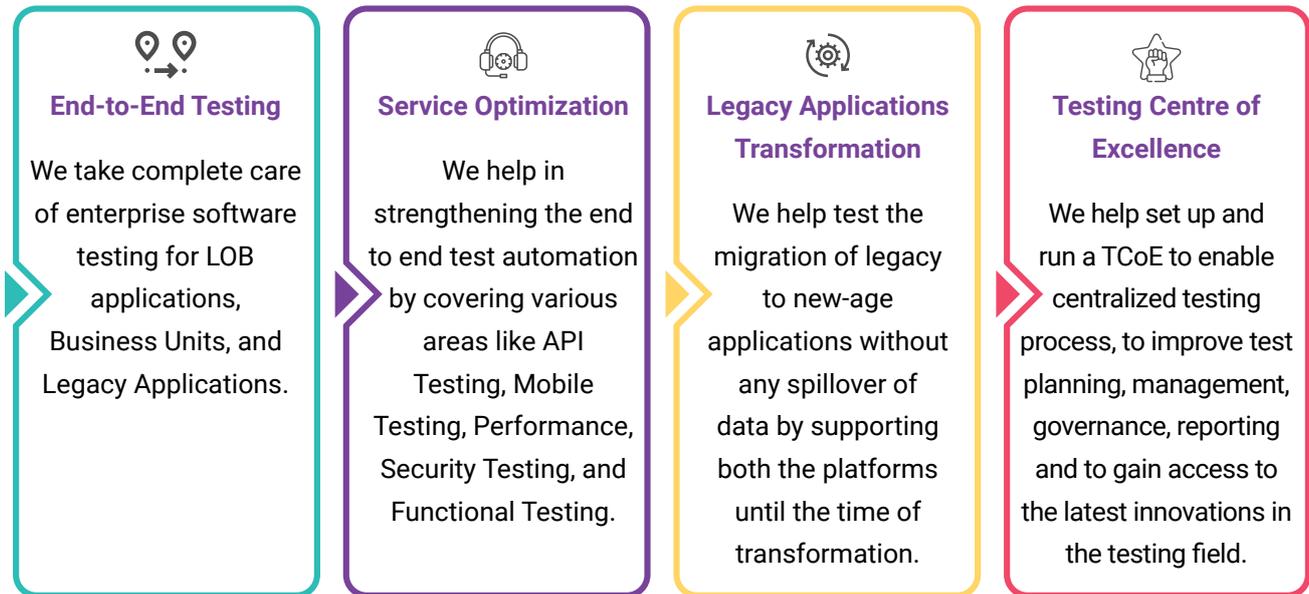
Managed testing is not limited to just detecting bugs and fixing them. It redefines and improves the quality of software applications at every SDLC stage.

Reduce Overall Cost

Managed testing helps enterprises reduce cycle time and save 30% to 40% on the overall cost. This novel testing practice brings in all the testing activities under one roof which makes it easy to track the testing process and predict the end result. This capability of managed testing accelerates the time-to-market and lowers the cost and time involved to deliver exceptional software applications and products. To add on, Managed testing is more of an ownership-driven model with flexible and predictable features, organizations can choose the more appropriate and advantageous testing service that can fetch more accurate and promising results without having to invest a lot in resources or technology.

Optimized Automation

Dynamic customer demands, industry advancements, and technology upgrades require frequent change implementation and continuous automation. An efficient automation framework is indispensable to build robust and scalable software applications and processes. Offering up to 50% reduced test efforts and 20% improved time-to-market managed testing optimizes timelines, eliminates errors, and prevents software failures.



Supports New-age Transformation

Managed testing assists enterprises in transitioning from legacy to new-age applications by supporting both platforms. While maintaining high quality, it ensures that there is no data spill over - no leakage of any sensitive data or breach because of reasons like incompetence, or other human error. Any data (sensitive data like personal information or intellectual property) provided by the customer is secured and contained carefully by involving a lot of best practices that manage user privileges, restrict unwanted user accounts, shut down unused/old ports, and enforces password standards. Managed Testing scrutinizes the entire data security process and transforms conventional apps into state-of-the-art ones while efficiently managing functionality changes, script modifications, and upgrades in a holistic manner.

Measurable Quality Improvements

Managed Testing offers transparent Service Level Agreements (SLAs), and outcome-based ownership on quality by adopting time-tested industry best practices and processes for consistent quality output. Its Hyper-Testing approach comprises customized operational, test metrics that quantify cost reduction, test quality, flexibility, time-to-market, and reliability.

Establishing Testing Center of Excellence (TCoE)

The skill gap is another crucial challenge managed testing addresses. Enterprises need not spend time, effort, and cost in building and maintaining in-house QA teams. Managed Testing Service sets up and runs the TCoE to enable a centralized testing process, improve test planning, management, governance, and reporting, with instant access to the latest innovations in the field of testing. It also delivers a single point of accountable ownership along with flexible onshore, off-shore, and right shore teams equipped with the right skill set that can be ramped up and down on demand.



The following are the average results of implementing Aspire's Managed Testing Services which includes End-to-End Testing, Service Optimization, Legacy Applications Transformation, and Testing Centre of Excellence.

- **Cost Savings:** Up to **25-35%** cost savings within the first year of using the Hyper-Testing methodology
- **Reduced Test Efforts:** Up to **50%** reduction in overall test efforts through continuous improvement and best processes
- **Improved Time-to-Market:** **20%** improvement through greater transparency of testing methods and procedures

Introducing Aspire's Managed Testing Services

A Futuristic Approach to Testing For Enterprises, Hi-tech, And Software Companies

Earlier, testing and quality assurance were considered as a luxury that was expensive and slowing down time-to-market. Due to MTS, large enterprises, hi-tech giants, and software businesses are viewing QA as a critical business enabler. Testing has become more crucial, with AI and ML as a game-changing part of agile testing automation. They help boost automation, streamline testing processes, and assist testers to keep pace with the developers. Cloud testing is another important trend that transforms QA from a cost center to a revenue generator.

Understanding the need of the hour, Aspire Systems offers MTS that accelerates application delivery using best practices of Agile, DevOps, and Shift-Left methods with best-in-class automation frameworks and tools. Aspire Systems are supporting large enterprises, high-tech companies, and ISVs with Managed Testing and QA services to deliver quality software and products, and business benefits.



Why Aspire Systems?

Industry Focus

Aspire has worked with several Fortune 500 enterprises to up their testing game and shift their operational paradigms with our managed services. Our success rate comes with the ability to first derive a holistic view of the business landscape to understand better each application layer that falls under it. And we have the experience that gives us the foresight to know *'which-change+would-impact-where'*.

Innovation

Aspire brings to the table best-in-class QE solution, Hyper-Testing, AI-enabled frameworks, and in-house accelerators. Our customers can embed our best practices with their software testing efforts. With constant R&D innovation, we not only ensure faster delivery with improved ROI but also the level of adaptability to thrive in unpredictable markets. For instance, we recently built an entirely automated, self-driven testing process through AI-driven automation frameworks.

Maturity Model and Metrics Strategy

Aspire's comprehensive maturity model is adaptable to the context of how your business operates and helps you through any process changes. We evaluate the quality of processes from time to time to achieve higher quality in governance and development for your KPIs. We also back it up by identifying KPIs to define the path of the testing journey.

Delivery Models

Aspire has a proven track record of empowering organizations to de-risk any event disruption, accelerating the delivery of projects. Using a standardized process that guarantees a high degree of collaboration, we provide extensive coverage for the 24X7 operations of your business. Our ability to scale up or down, without any knowledge spill over, can be a critical parameter for your testing success.





AFTA – An AI-powered Testing Framework

Designed specifically for large enterprises, ISVs, and high-tech companies, the [Aspire Framework for Test Automation \(AFTA\)](#) is built to offer intrusive testing in the shortest possible time. This framework allows project teams to manage multiple automation components under a single framework to conduct effective functional testing and leverage functional automation tools for non-functional testing as well. Its Selenium grid-based execution minimizes environment needs and execution turn-around time. AFTA provides a cross-browser, cross-platform mobile testing solution without having to add additional lines of code. Based on the Continuous Integration/Continuous Delivery (CI/CD) model, its versatility allows functional automation test scripts to be converted to performance and security testing programs without additional efforts. AFTA delivers easy integration into any cloud-based browser and device infrastructure service provider.

Benefits of AFTA

Several enterprises in the high-tech and ISV industry use the following artificial intelligence infused test automation frameworks that are proven to derive more promising results.

- Provides intelligent connected ecosystem
- Collaboration of QA teams and end of siloes.
- AI/ML-based analytics improves productivity to a greater extent
- Reduces automation efforts by 40%
- Provides a low degree of maintenance





A Customer's Success Story

About the Customer

The customer is a prominent software solutions provider for media companies with a focus on premium broadcast technologists. Headquartered in the US, their solution aims to streamline workflow between their customers and advertisement agencies.

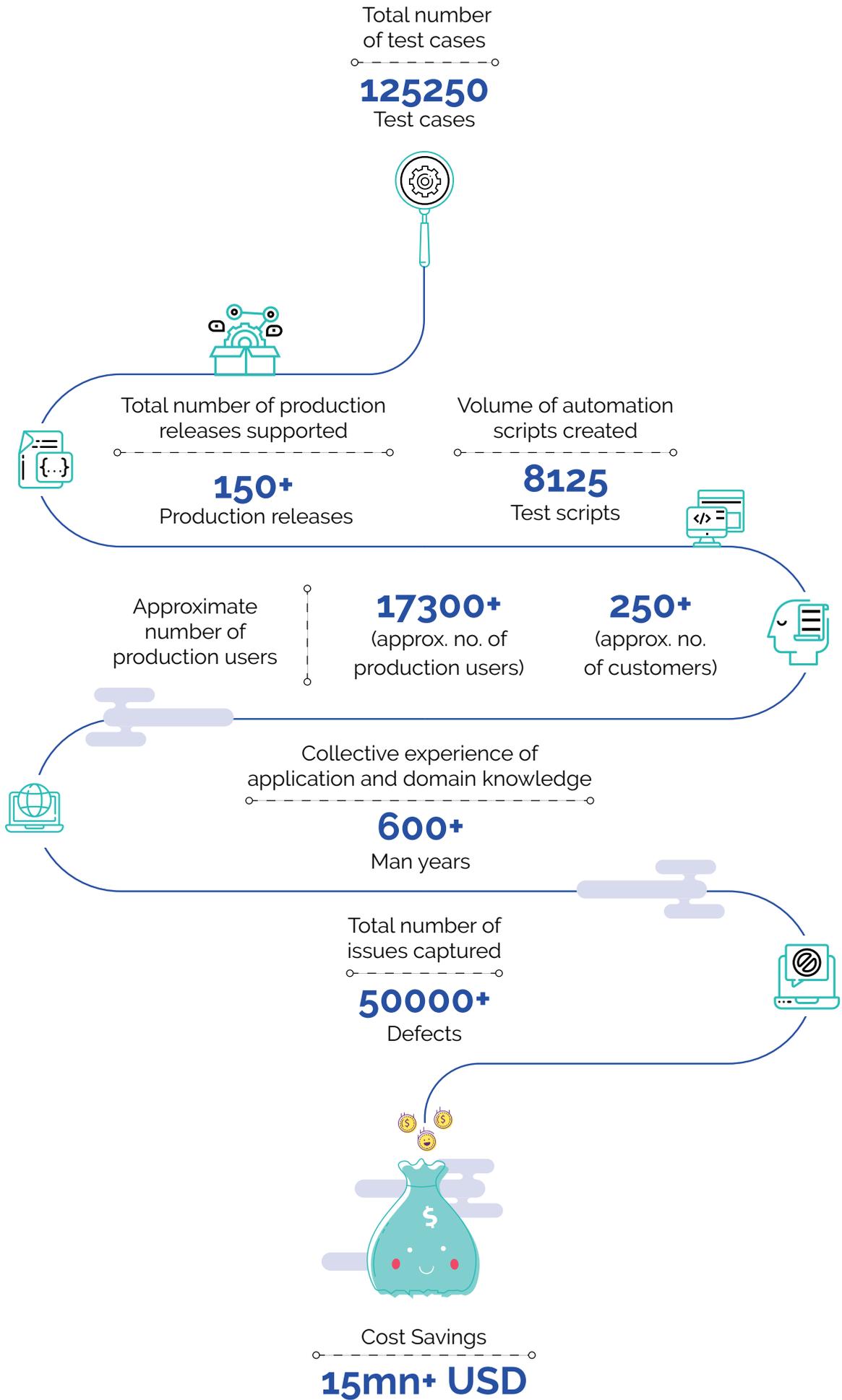
Key Challenges

The customer offers their media solutions as products with a wide spectrum of distribution channels- SaaS model, license controlled software products, on-premise or cloud distribution model, and other professional services. With an increased distribution portfolio, their testing capabilities needed a major revamp. Without an updated QA routine, the customer was facing the following challenges:

- **Incurring higher turn-around time**
- **Increased operational cost**
- **Difficulty in maintaining talented resources**
- **Lacking adequate product support**
- **Lacking software product support and appropriate test documentation**

Our Solution Journey

- **Created Dynamic Test Plan approaches in two modes: customer-specific or time-based**
- **Executed complete automated test solution using AFTA 3.0 with smoke and regression test cases**
- **Implemented sanity and smoke tests with the continuous integration process**
- **Made high-responsiveness to end-customer queries a priority by implementing full back end support such as travelling to the customer's place and training end customers regularly**
- **Participated in business analysis, product upgrade, and implementation for the end-customers**
- **Developed an exploratory testing approach for requirements that had no history of documentation**
- **Formed a TechOps research team (comprising of a developer, DBA & QA personnel) to probe technical and performance issues occurring in production and offered appropriate solutions for the same**
- **Ensured the products are delivered with stability and scalability by implementing performance testing solutions**
- **Participated in business analysis, product upgrade, and implementation for the end-customers**
- **Orchestrated as an onshore-offshore model to provide around-the-clock QA support for the customer**
- **Submitted Release Health Index (RHI) reports to the customers with specific recommendations that quickened the Go-No-Go decision-making process**





Benefits

Aspire's end-to-end QA solution automated and streamlined the customer's testing process that helped them to accelerate their turn-around time

- High Return on Investment
- Cost-effective methods for handling production issues
- Reduction in Defect Leakage

Conclusion

Speed and quality are key determiners of success in the world of business, which is a never-ending drive to reach this ultimate peak through increased productivity, reduced lead times, lower costs, and regulatory compliance. Agile test automation offers the quickest and simplest route to reach this unconquerable zenith.

[Talk to us today](#) to explore more about our time-tested managed testing services to help you get back on track.



About the Author



Practice Head
Janaki Jayachandran
Vice President - Testing

Janaki is the Head of Testing and Test Automation Service Line at Aspire Systems with an industry experience of about 19 years spanning across the SDLC. Janaki also heads the Testing Center of Excellence at Aspire that has produced innovative AI-based frameworks and Robotic Arm Testing solutions. Janaki has the delivery experience of managing a 600+ people team with in-depth expertise in designing and implementing a test strategy for both cloud-based SaaS products and enterprise applications for various domains.



Author
Christina Sridhar
Research Consultant

Christina is a Senior Content Writer in Aspire Systems with an experience of about 4 years. She is closely associated with the Independent Testing Services team. She writes research-driven content such as blogs, whitepapers, articles, and solution pages about recent market trends to increase company branding.



To know more about our testing services, please write us to: info@aspiresys.com

Contact Us

For more info contact: info@aspiresys.com or visit www.aspiresys.com



USA

+ 1 630 368 0970

SINGAPORE

+65 3163 3050

INDIA

+91 44 6740 4000

BELGIUM

+ 32 3 204 1942

NETHERLANDS

+ 31 (0)30 800 92 16

POLAND

+48 58 732 77 71

MEXICO

+52 222 980 0115