

E³: Hyperscale Quality Engineering: Enablement, Experience & Evolution

Take your business to new heights with never before imagined levels of quality and speed by hyperscaling quality engineering in a multiverse of architectures, applications, and disruptions.

In today's digital landscape, quality engineering (QE) departments are under immense pressure to meet the business needs of their organizations – delivering more diverse, accessible, and personalized products and services – faster, and more securely. And they must do this while learning to quickly absorb and scale new technological disruptions, or risk falling behind the offerings of their competitors.

This is compounded by the explosive growth in architectures and systems, with a massive increase in the number of permutations of real-world scenarios due to the wide range of devices, channels, and heightened customer expectations for personalization. This shift towards more nuanced and targeted offerings necessitates equally sophisticated quality engineering approaches to ensure exceptional user experiences across diverse customer segments. The top five QE challenges identified in meeting these evolving demands include:

- Adapting processes to rapidly changing product requirements
- Balancing accelerated delivery timelines without compromising quality standards
- Continuously upskilling a growing QE workforce on emerging technologies
- Managing exponentially increasing test data complexity across systems
- Enabling seamless collaboration between cross-functional teams

This necessitates a shift from traditional quality engineering methods, advancing even beyond Agile and DevOps, and graduating from continuous quality systems to **Hyperscale Quality Engineering**.

The Pillars of Hyperscale Quality Engineering

Enablement: Build a foundational “Artifactory” with assets to be consumed and re-used by everyone. This requires:

- Top-level automation
- Predictable processes
- A versatile and dynamic workforce
- Embedded AI and ML

Experience: Transform from testing a capability to Certifying an Experience, taking a user-centric and holistic experience focus by:

- Collaborating across disciplines to align with UX goals
- Employing real-world testing scenarios
- Fostering adaptability to evolving user expectations
- Delivering testing that considers subjectivity in UX experiences
- Integrating with Agile processes

Evolution: Go beyond with predictive AI, cognitive capabilities, and GenAI with:

- Optimization to reduce redundant or inefficient efforts
- Integrated AI and ML to evolve beyond traditional rule-based systems
- Accelerated and precise outcomes, GenAI enhances and augments QE, fostering trust, and advancing performance to new levels

“Hyperscale QE brings together testing, quality assurance, and delivery, ensuring an automation-first approach to business success while acting as the voice of the customer in development teams.”

Director of Quality Engineering, Australia



The Amdocs Hyperscale E³ Methodology

To chart your journey, we:



Assess Technological Readiness



Prioritize Pervasive Automation



Build a Foundational Taxonomy



Foster Ongoing Change



Certify CX Experiences



Move to an Inorganic Colleague

Quality Engineering Center for Enablement

A QE Center for Enablement (C4E) is crucial to achieve hyperscale quality engineering.

The C4E serves as a central hub that disseminates best practices, tools, resources, and knowledge, and empowers QE teams across the organization to excel in their initiatives.

The main capability of the C4E is its hyperscale ability to produce and provide test assets that are reusable organization wide. Its key responsibilities include standardizing processes, providing essential tooling and infrastructure, facilitating knowledge sharing and training, driving innovation, enabling collaboration, offering guidance and governance, managing resource allocation, and defining performance metrics.

Hyperscale QE Delivered Through E³

The Amdocs Hyperscale E³ Methodology helps you to exponentially increase your quality engineering capabilities by leveraging automation, artificial intelligence, and advanced testing techniques to significantly increase your testing capabilities

and ensure delivery of innovative products and services that meet customer expectations without compromising on reliability, performance, or user experience.

Enablement – Assess Technology Readiness:

Conduct a thorough assessment of the organization's technological capabilities, skills, and maturity with our patented QMATE process, to establish where you are in your **Enablement > Experience > Evolution** transformation journey. This is to help plan a seamless transition, focusing on the need for strategic investment in technology that supports both current and future needs.

Enablement – Prioritize Pervasive Automation: Help establish automation as ubiquitous, and not simply limited to test cases and scenarios. The automation universe should span the entire technical ecosystem, including everything that impacts testing, such as deployment, infrastructure, and mobile.

Enablement – Establish a Foundational Taxonomy:

Build a data lake, embedding AI and ML, and develop the taxonomy for your specific ecosystem. This lays the foundation for predictable processes, baselining and benchmarking efficiencies, and optimization.

Enablement – Foster Ongoing Change: Apply change management to your automations and taxonomy and use ML for classifications to generate optimized and accurate testing. Use advanced technologies such as deep learning, data templization, and supervised training machines, to go beyond traditional automation testing, delivering intelligent testing using ML data.

Experience – Certify CX Experiences: With all the automations and models working smoothly and accurately, we now shift focus from functional testing to testing customer experiences. These real-world scenarios incorporate many different aspects that deliver adaptability and agility. This new model-based engineering approach designs and automates experiences while capturing the exact topology, shifting from functional testing to certifying an experience. Such testing can potentially be augmented further by AI and GenAI.

Evolution – Move to an Inorganic Colleague: Having used AI and GenAI to assist during the enablement and experience phases of the hyperscale QE journey, the last phase delivers person-free autonomous QE. AI and GenAI produce almost endless inorganic AI agents/testers to execute repetitive structured and unstructured tests.

Get started today

Discover why hundreds of organizations have chosen Amdocs to help transform their businesses. Let's talk.