

Is Your Software Factory Ready for the Next Paradigm?

The era of QE 3.0 is here

The role of software and application leaders is shifting FAST, fueled by pressure to accelerate product lifecycle velocity, create superior products that wow, leverage emerging technologies and become truly data-driven.

As such, the role of quality engineering (QE) continues to evolve rapidly too, with high-performing teams ensuring quality is engineered in, versus bolted on. The era of QE 2.0 has long been the north star, characterized by Agile, DevOps-driven continuous release and delivery of code, and real-time analytics and feedback loops. But at the pace at which product expectations, user behavior, and business demand evolves, leaders can't remain in the current paradigm for too long.

QE 2.0 is quickly becoming table stakes and that means QE 3.0 — the era of continuous everything — is right around the corner. And software leaders need to be ready.

But what is QE 3.0? Can you prepare for 3.0 if you haven't yet fortified your impact in 2.0? How do you know the era you're in today? And, most importantly, how can you best position your team to thrive in this new landscape?

To answer those questions, let's take a look back to understand how the era of 3.0 was born...

An Ever-Shifting SDLC Paradigm

During the 0.0 days, QE didn't exist. The business had an IT department that handled testing as a reactive part of development and incorporated limited user input.

"In QE 0.0, the business would talk to us engineers and then we would do our magic, with little to no visibility offered to the product owners or the end users," says Walter McAdams, SQA Group's Chief Engineer.

Over the years, quality assurance emerged as a separate bureau in service to IT. The business determined that to get products that were fit-for-purpose, they needed a separate team that had hyper-expertise with testing. Thus began the QE 1.0 era, where quality assurance evolved as a specific phase in the SDLC

But just as there had been a problem of translation from the business to IT, now there was a problem of translation from IT to QE. The shifting expectations in what was being built and what needed to be tested caused slowdowns and repetitive cycles.

To solve these problems, QE needed to be incorporated into the whole lifecycle and this began the democratization of QE, or the beginning formations of the 2.0 era.

"QE 2.0 is characterized by extensive automation, integration in the building process, shift-left, shift-right testing, and leveraging nascent technologies," says McAdams. "The expectation about QE department capabilities continues to burgeon, and we are getting closer to end users than ever before."

"QE 2.0 represents our most influential era to date," adds McAdams. "We are impacting things like go-to-market, product differentiation, and revenue impact in a more profound way. But as leaders, we can't get too comfortable in 2.0, because 3.0 is coming around the corner... FAST."

Self-Assessment

Answer the questions below to determine the paradigm that most describes your team today.

In your product lifecycle, does progress flow end-to-end through the phases of a project via a technology-enabled pipeline or is it a siloed, process, with many manual activities prone to rework? (NOTE: cyclical and iterative are NOT bad.)

What role does QE play in your business? Does it have an equal seat at the table as the voice of quality of product and quality of process? Furthermore, does Quality drive decision-making?

Do you worry about finding qualified professionals who exhibit both a technical acumen and Quality Engineering mindset? Do you worry about how to “turbocharge” the talents of your present team so that they will be ready for what is on the horizon?

	QE 0.0	QE 1.0	QE 2.0	QE 3.0
Product Lifecycle Velocity	Heroic	Waterfall	Agile	Continuous
Product Quality	Ad-Hoc	Controlled	Responsive	Predictive
Emerging Technologies	Elementary	Enabling	Disruptive	Futuristic
Data-Driven Imperative	Administrative	Transactional	Impactful	Influential
Organizational Relevance	Irrelevant	Seat at the Table	Democratized	Business-Driving

In Prep of QE 3.0

The race to QE 3.0 might be coming fast, but to get there, leaders need to think about two important concepts:

1. Advance to QE 2.0 expediently, and fortify your strength there
2. Prepare for 3.0 NEXT, to keep up with the rapid pace of change

Let's dive into what needs to be done today to ensure you are maximizing your impact in QE 2.0...

Invest in Velocity

2.0 is all about ensuring continuous improvement, acceleration, and increased velocity. This means actively thinking about things like continuous testing, build and release, and development, and influencing quality of product and process.

Thanks to methodologies like Agile, the introduction of DevOps, virtualization, containerization, as well as other innovations, QE can play an integral role in steering a holistic SDLC, directly impacting go-to-market, product experience and revenue generation.

Reactive to Proactive Measurement

2.0 is fueled by the big data era – which means it's imperative to elevate the role of data and understand what it says about quality of product and process. Leaders should also lean on the insight data provides about end user desires to shape what comes next.

“QE is now responsible for everything from end user satisfaction to reports on production to outage information,” says McAdams. “Therefore, it's on QE leaders to help the entire IT organization raise the visibility of the data.”

Think Total Experience

Gartner recently named “total experience” (TX) as one of the top strategic technology trends. TX is focused on improving overall experience and getting even closer to end users, customers, employees, and partners through feedback loops.

QE is well positioned to support the shift to TX — from understanding user expectations and desires for product experience to addressing business desire for increased speed and agility.

With your 2.0 paradigm strengthened, now it's time to prepare for what comes next: QE 3.0

QE 3.0, the Continuous Era

The QE 3.0 paradigm will be driven by possibilities created by emerging technologies. It will present opportunity and advancement such as...

- Quality built in, not bolted on
- Timely innovation and speed to adoption
- AI-based modeling and automated algorithms
- KPIs not yet conceived to measure impact
- The redefinition of IT systems

“The previous eras have prepared leaders for this moment — a time in which QE becomes a competitive advantage and growth driver enmeshed in the DNA of an organization,” says McAdams. “In QE 0.0, there was no seat at the table for QE leaders. In 1.0 and 2.0, they got a seat but not an equal one. In 3.0, they will have one of the most important, business-defining seats. Driving the business towards the future.”

Let's take a look at 3 core ways to prepare your team for the era ahead

QE 3.0, the Continuous Era

Prioritize Emerging Tech

QE 3.0 will be the most technologically driven of the eras. Three technologies that will be most impactful are:

→ **Expanded Devices:** IT networks are no longer just boxes, computers and systems that run on computers. Now, there are all sorts of things that have embedded processors that are taking inputs from traditional IT systems and sending inputs and data to traditional IT systems

→ **Big Data:** The ability to use data to make decisions about quality of process and product is here. QE 3.0 will be the age of predictive data, AI modeling, and automated algorithms, which will introduce new standards of excellence to the SDLC.

→ **Continuous Everything:** It's the era of seamless integration of the various factors that make up successful IT. Just as the division between development and test teams dissolved from 1.0 to 2.0, they will continue to dissolve and enter a period characterized by continuous everything.

Build Your Team for the Future

The era of 3.0 means rethinking how to assemble, strengthen, and invest in teams. The skill sets that were prioritized in earlier eras are being replaced with today's teams needing to be well-versed on emerging technologies, advanced analytics, and intelligent automation. Skill sets that will be imperative include:

→ **Automation:** A shift away from all things manual has resulted in the demand for automation skill sets. One place this is particularly evident is with the surge of SDET roles displacing more traditional testing roles. Without test automation injected as early in the SDLC as possible, agility bogs down.

→ **Internet of Things:** With the shift to IoT-enabled devices, it's essential to find team members who understand how to architect, develop, and test systems that have components that are IoT. Consider that 83% of organizations have improved their efficiency by introducing IoT technology.

→ **Data Science:** The industry is well along the pathway of data science, with advanced analytics supercharged through ML algorithms and adaptive AI. Round out teams with professionals who bring fresh data science skill sets built on an understanding of traditional fundamentals of governance and quality.

Remain Curious

The need to stay curious and regularly examine the nature of the industry, the nature of technology and where and how that moves people is critical.

"As leaders, we need to understand that IT is broader than it ever was before. And our involvement in both IT and product development is only going to increase," says McAdams. "We need to be thinking about the way computers and systems work, and the way people work with them, because democratization becomes more critical in the 3.0 paradigm."

Increasing pressure will mount for QE and IT leaders to think more like the end user than in previous eras, because 3.0 will be completely defined by business' abilities to drive compelling user experiences.

"It's not enough to think about user experience throughout the development lifecycle. We need to be thinking about it in every part of our organizations and bake in continuous feedback loops and analytics," McAdams adds.

Take a moment and consider three things you can do in the next 30-90 days to best prepare your team for QE 3.0

Self-Assessment

30 Day Goal:

60 Day Goal:

90 Day Goal:

Getting Ready

If the progression from 0.0 to 2.0 is any indication, the era of QE 3.0 is coming fast.

“The role of a QE leader, therefore, is to resist refining outmoded means of operating and instead be actively challenging all the previous paradigms because the biggest shift is coming right at us,” says McAdams.

“That means proactively examining all the things that determined where QE fit, how it was done, and what was QE’s responsibility,” he adds. “Then it’s about embracing a ‘willing suspension of disbelief’ and opening our minds to the possibility of new ways of seeing our jobs.”

Drive to Your Next Paradigm



Your software and data solutions partner

 info@sqagroup.com

 sqagroup.com