



WHITE PAPER

QUALITY ENGINEERING

ACCELERATING YOUR DIGITAL INITIATIVES
WITH QUALITY ENGINEERING

apexon.com

THE NEW DIGITAL ERA REQUIRES INCREASED SPEED & AGILITY

In any product, features matter a lot, but product performance and overall experience are what keep users truly engaged.

A company that can deliver higher quality products to market faster than its competitors gains a significant and sustainable advantage. And in today's software-driven marketplace, that is more important than ever. If your organization is like most, your Quality Assurance (QA) team owns responsibility for app quality. But as cycle times shrink for new digital apps and customer expectations rise, that job is getting harder all the time. There are several factors in play here:



Digital First

Customers increasingly prefer the digital channels – mobile, web, IoT – to engage with service providers and vendors. You have to be able to meet and exceed these new expectations.



Productivity Pressures

As demand increases, you need to be more productive and responsive. There is less time to properly define test requirements.



User Feedback

It's difficult to incorporate it within tight time frames – especially when applications are brand new to market.



First Impressions

Customers expect you to get your mobile apps right the first time. If not, they move on. Quality is critical, regardless of how fast you are innovating.



Testing Complexity

New apps and services have to be developed for multiple platforms, devices and operating systems.



Globalization

You are likely serving an increasingly global customer base with specific local requirements.



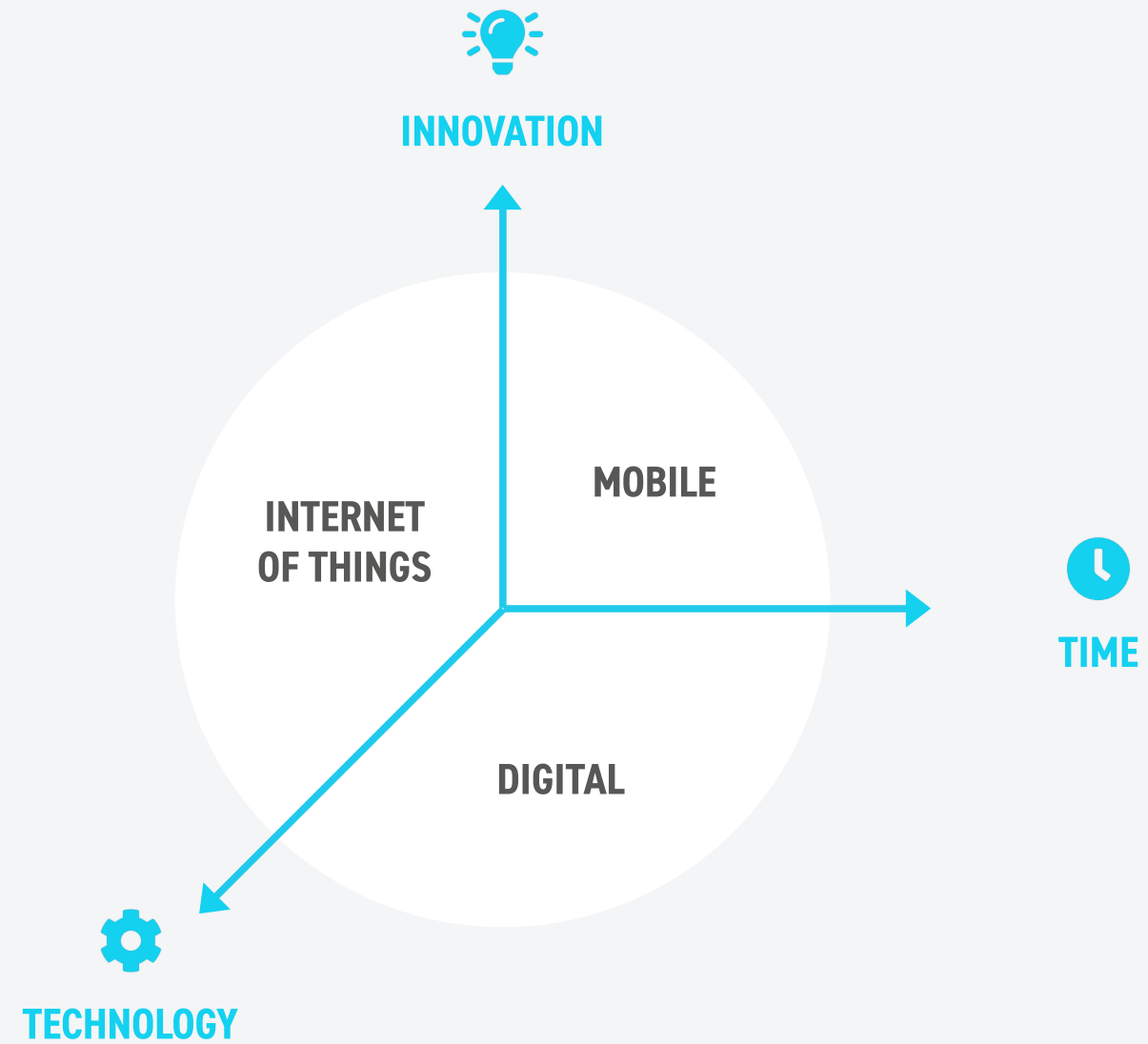
Automation

Manual testing processes can only cover so many different use case scenarios making for hard decisions about where to spend QA time and resources.

As a result of all these factors, QA teams have less and less confidence in the quality of releases and companies risk dissatisfied customers and damage to their brands.

Companies that depend on getting new applications and digital services to market require a different approach to QA and testing. One that can meet expectations for faster cycle times and higher service levels. Quality Engineering (QE) can help organizations achieve this goal consistently and efficiently.

AS TECHNOLOGY EVOLVES, BEHAVIORS CHANGE



TRADITIONAL APPROACHES TO QA MAY NO LONGER MEET YOUR NEEDS

QE - WHAT'S THE BIG DIFFERENCE?



TRADITIONAL

“Assures” quality in the process and the product. It fixes and prevents mistakes and defects in products or services. It’s more reactive.

Focuses on:



Standards

Identifying those which are a “value add” to the enterprise and assuring compliance to them.



Surveillance

Including reviews, audits, demonstration, inspection, testing, analysis, metrics, etc.



Reporting

Quantitative and qualitative reporting, to various functions and levels in the enterprise



QE

“Drives” the development of high quality products or services and the processes that support them – from start to end. It’s more proactive and integrative.

Focuses on:



Cross-Functional Teams

Emphasizing quality from ideation through commercialization.



Processes

Defining, supporting and implementing processes such as BDD/TDD, Agile, Kanban, CI, etc.; leveraging automation wherever appropriate.



Re-usable Tools

Building test frameworks to make QA processes more scalable and accelerate DevOps strategies.

COMPANIES THAT ADOPT QE EFFECTIVELY CAN REAP SUBSTANTIAL BENEFITS INCLUDING:

- Application defects can be detected earlier in the product lifecycle, making them easier, faster and less expensive, to correct.
- Increased automation can minimize the need for manual intervention, reducing both regression and smoke test cycles and enabling parallel testing.
- New applications and services get to market faster, increasing customer satisfaction and competitive advantage.
- Testing resources can be used more efficiently, increasing productivity and reducing total cost of ownership.



BUT IT'S NOT WITHOUT ITS RISKS:



Not all organizations have the necessary skill sets in house for QE. And they can be difficult to source in the current market because of their value.



QE requires some level of culture change within an organization. It's disruptive, but it's necessary. And the benefits far outweigh the pains.



An effective QE approach requires the right test infrastructure; one capable of accommodating the diverse and constantly changing set of devices, platforms and operating systems being adopted by customers.

MAKING A SMOOTH TRANSITION TO QE

If your organization is serious about making the shift to QE, Apexon suggests the following to help make that transition successful.



Refocus your QA efforts from testing features and functions to evaluating customer experience and business assurance.



Expand your testing teams' skills beyond manual and test automation to end-to-end quality engineering.



Use proven Agile and DevOps practices to transform your organization, break down silos, and accelerate your software development lifecycles (SDLC).

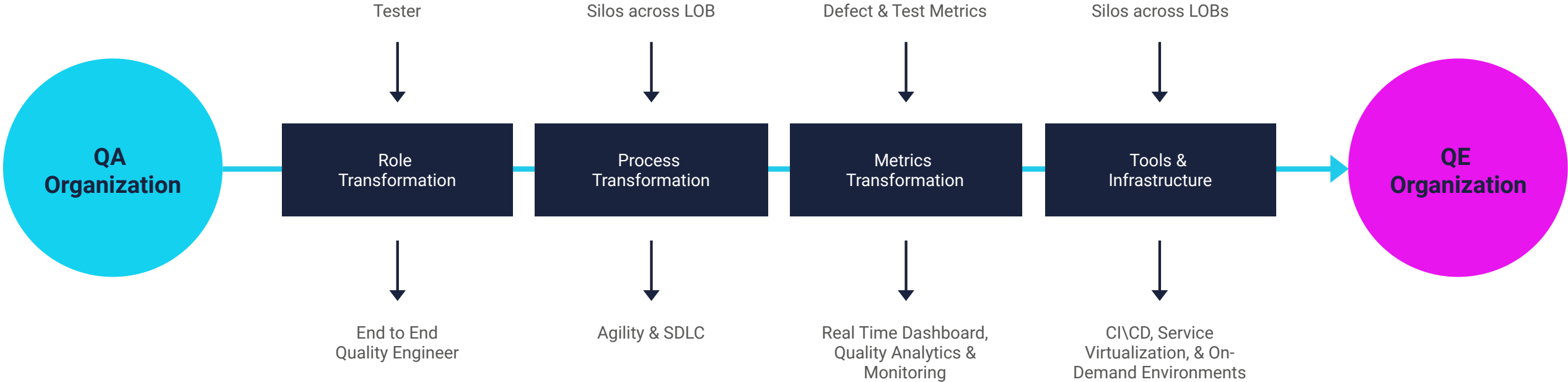


Prioritize testing with predictive quality analytics and continuous monitoring and feedback.



Make continuous integration and continuous delivery (CI/CD) a key part of your QA strategy; leverage on-demand testing environments.

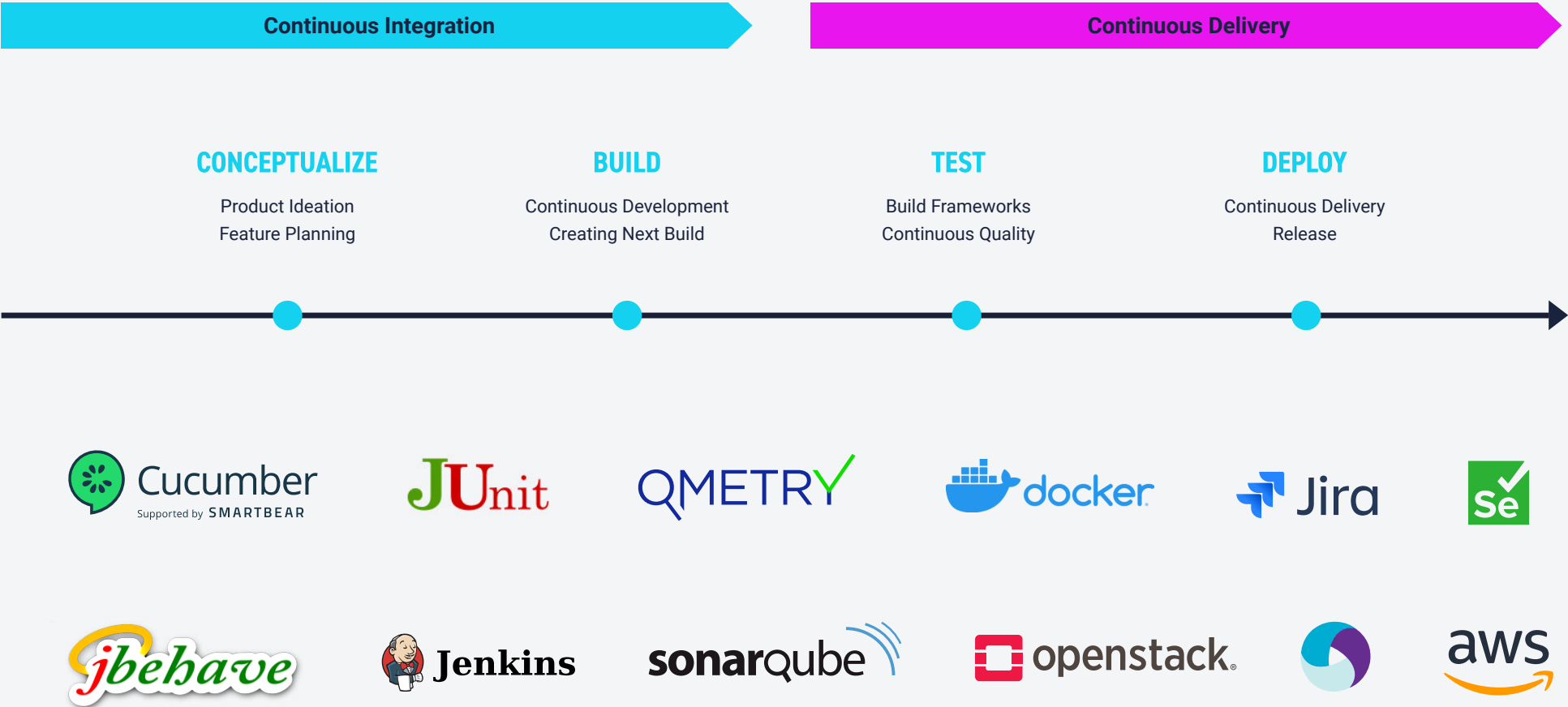
KEY AREAS FOR QE SUCCESS



THE QE LANDSCAPE

QE requires a tools-driven approach. This enables your QA organization to scale to meet the faster cycle times and increasing complexity in your software development lifecycle.

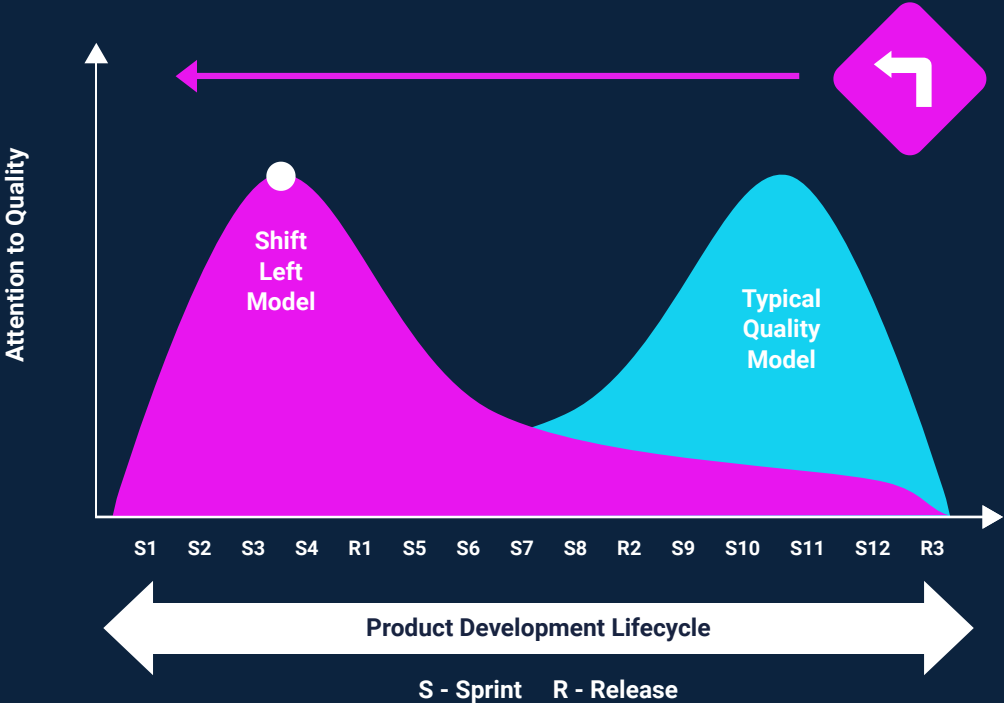
There are a number of proven tools on the market to help jump-start your efforts. The chart below is a sampling of some of the best tools (in our view) categorized by their role in the development lifecycle.



MAKE THE SHIFT

In the new age of mobile and IoT, enterprises must accelerate their software development lifecycles to keep up with the competition.

This requires a different approach to testing and QA – one that can meet expectations for shorter cycle times and higher service levels. Adopting QE can help organizations achieve this goal consistently and efficiently and deliver substantial benefits in both the short and long term.



Enterprises that are successful can:



Lower operational costs by reducing rework and realizing greater team efficiency



Accelerate time to market by detecting defects earlier



Reduce manual efforts and error by making better use of automation



Increase user engagement and satisfaction by providing their customers with a higher quality user experience

Now is the time to start making the shift in your organization.

THE APEXON APPROACH TO QE

- Reusable frameworks and easy to use automation tools that abstract complexity
- Continuous integration, (Acceptance) test-driven development (ATDD), in-sprint automation
- Business-driven development and testing concepts for plain language scripting
- Cloud scalability to address unique test environment and test data challenges
- Test frameworks that support test cases spanning GUI / WEB / Services
- Advanced test reporting and trend analysis



CUSTOMER BENEFITS



Easier deployment, less risk and shorter cycle times



Faster, broader market coverage – device, OS, geographies



Improved testing quality; higher service levels



Faster problem resolution



Increased user confidence and adoption



Substantial time and resource efficiencies



Intelligent decision making



APEXON IS A PURE-PLAY DIGITAL ENGINEERING SERVICES FIRM FOCUSED ON HELPING COMPANIES ACCELERATE THEIR DIGITAL INITIATIVES FROM STRATEGY AND PLANNING THROUGH EXECUTION.

We leverage deep technical expertise, Agile methodologies and data-driven intelligence to modernize systems of engagement and simplify human/tech interaction.

We deliver custom solutions that meet customers' technology needs wherever they are in their digital lifecycle. Backed by Goldman Sachs and Everstone Capital, Apexon works with both large enterprises and emerging innovators — putting digital to work to enable new products and business models, engage with customers in new ways, and create sustainable competitive differentiation.



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