Keeping Pace With Innovation

Your QA Strategy for Speed and Quality

APPLAUSE
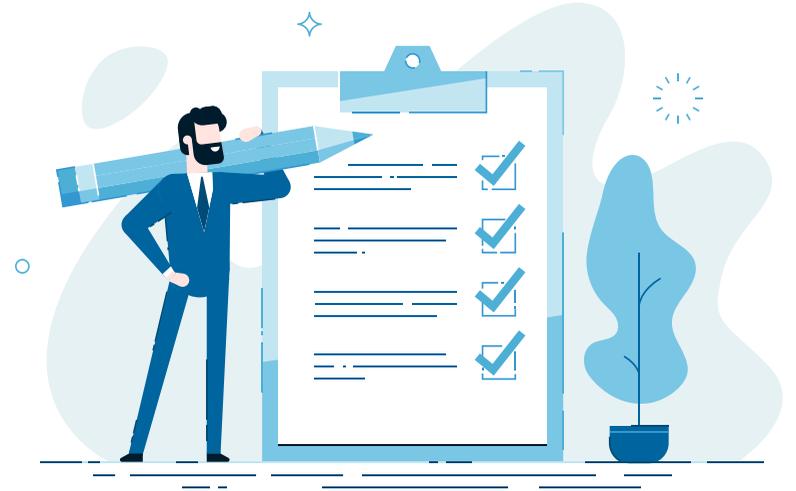
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> **"We won't experience 100 years of progress in the 21st century – it will be more like 20,000 years of progress (at today's rate)."**
>
> Ray Kurzweil, Inventor & Futurist

A New Era of Testing

Ten years is a lifetime in the digital space. However, many would agree that the last ten have felt more like 1,000 when you consider the pace of innovation we've witnessed. Innovation has not only altered the way we develop products, but the way we test them as well.

When Applause launched in 2008, developers were intent on answering one primary question: "Does the software work as designed?" Fast-forward to today and that simple question has become the mere starting point of a far more complex set of questions, goals, and success metrics.

The evolution of technology has become the great equalizer when it comes to software development. It has drastically lowered the barrier to entry in the digital realm. As competition has risen to peak saturation, customer experience has emerged as the true competitive differentiator. However, delivering on that experience is no simple task.

Steve Jobs famously once said, "A lot of times, people don't know what they want until you show it to them." That remains true to this day. Innovation is driven by the need to be ahead of the game, and it has only accelerated with the speed at which customers voice their opinions – particularly in public forums.

Today, if your experience is friction-filled or flawed in any way, you not only lose your immediate customer base, but quickly lose credibility in the court of public opinion. So why wait until production to collect user feedback when you can (and should) leverage it throughout the development process?

While harnessing the power of your customer is easy in theory, it is far more difficult to achieve in practice. The fact of the matter is that QA was developed for software in a simpler time. It has evolved a lot over the years to account for innovations like the Internet and mobile phones, but the pace of innovation has far exceeded the evolution of QA practices. Today, your success hinges on the agility of your development process. It dictates both the quality of your customer experience and the speed at which you can innovate.

> **89% of CIOs think they will be required to release new updates even faster in the future.**
>
> Source: Dynatrace

Recently, the uptick in Agile development has narrowed the gap, but many companies don't have the appropriate resources in place to properly support it. While 97% of companies are now practicing Agile in one form or another, only 16% believe they are mature in their Agile practice. The challenges to realizing Agile maturity are constantly evolving, but the testing approach itself continues to lag behind.

It's time to embrace a new way of testing.

Today, organizations release new software updates on average 3 times per working hour and 104 times per week.

Source: Dynatrace

The QA Dilemma

Left with a choice between faster development time and better digital quality, what would you choose? There is no winning answer here. According to Forrester, the number-one criterion for application success is combining speed with quality. However, few companies have the strategy or resources to avoid compromise.

As software complexity continues to grow, the test coverage gap expands. In-house teams are ill-equipped to handle this level of complexity on their own. Yes, you can turn to automation, but managing the combination of both manual and automated test cases requires additional staff. For QA to fit into the SDLC, you need an Agile solution – one that can handle all of the challenges that lay ahead.

> **Only 40% of organizations are confident in their ability to achieve both speed and quality.**
>
> Source: CA Technologies

Seamless Interoperability

Twenty years ago, there were no smartphones or connected devices – only a handful of computers with few browser and operating system combinations. Software

was manageable then, but it has become overwhelming today.

Per ScientiaMobile, there were 15,000 unique combinations of mobile phones, networks, and browsers that could be tested in September of 2011. Just over four years later, that number jumped to 45,000. Making matters worse, your digital experience is no longer limited to a single device, but is expected to operate seamlessly from one device to another (e.g. from mobile phone to laptop).

While full coverage is not expected, nor feasible, getting to even a comfortable 80% area has become almost unmanageable. It's clear that the best feedback comes from real devices, but the huge expense of maintaining a full-scale test lab is too cost prohibitive to keep up.

Global Coverage

Today, it's easier than ever for customers to interact with your software throughout the world. Unfortunately, digital quality is not uniform from one market to the next. Every market brings about new variables that must be tested in order to ensure a quality user experience – including native languages, dialects, currencies, and more.

To confidently deliver an experience to a new market, you need to make sure all of these variables are properly addressed. Your in-house team likely does not have the capacity to test these experiences in your desired

The Biggest Headaches for QA Leaders

1. **Resource Constraints**
2. **Conflicting Priorities**
3. **Tight Release Deadlines**

markets. As a result, you're left to find a team of native testers, but that is neither an easy nor a quick task. The speed and agility you need simply does not exist through traditional channels.

Testing in the Wild

With test coverage squeezed by short timelines, companies rarely have time to explore the edge test cases that every experience needs. If there is an opportunity, the tests largely remain secluded to the test lab. While this can uncover some valuable bugs, the real value is found by testing in real-world settings.

Unfortunately, teams rarely have the time or resources to carry out this kind of testing. Even worse, ramping up a third-party testing solution to amplify your efforts has been known to take weeks if not months. Given the

constant ebbs and flows of testing priorities, the task of managing your capacity needs can seem fruitless at times. The fact of the matter is, leveraging and reacting to real-world feedback can make or break your digital experience.

> **73% of CIOs believe the need for speed in digital innovation is putting customer experience at risk.**
>
> Source: Dynatrace

Test coverage is critical to your short- and long-term success, but traditional testing methods are not built to meet the expectations of today's digital consumers. Speed has exposed the common shortcomings of companies, but the good news is that the areas you need to supplement can be supported.

DOW JONES

> **"Without Applause we would undoubtedly be shipping low-quality products far slower."**
>
> Andy Nichol, SVP, Platform & Product Delivery, Dow Jones

7,000+	**350**	**750+**	**+30%**
Bugs Found	Test Cycles	Device Combinations	Customer Feedback

Dow Jones has long been a global fixture in news media, but heritage alone could not sustain its success through a digital transformation. The digital experience soon became a top priority, but Dow Jones quickly realized the difficulty of delivering digital quality at the breakneck speed its customers demand.

Though Dow Jones did have an in-house QA software testing group, its resources and processes simply could not support the release cadence it needed to meet. Having moved from five-to-six builds per year to one build per week, consistency and speed of feedback became paramount.

Dow Jones made a number of changes to fortify its QA efforts and emphasize agility. First on the list was transforming and rebranding quality assurance into a true quality engineering (QE) organization. The team began closely partnering with business users and product managers to better understand requirements and catch problems on the go rather than in production.

Applause ultimately proved key to Dow Jones' transformation in numerous ways. To begin with, Applause provided Dow Jones the flexibility to test its digital experience with a wide range of users across a varied mix of network and device configurations. In addition, Applause provided the hands-on expertise on when and what to test while delivering critical feedback on next steps or UX-related issues.

Since partnering with Applause and embracing QE practices, Dow Jones has benefited in a variety of ways and continues to reap the rewards today.

Planning for the Present & the Future

The more complex your QA organization becomes, the wider the chasm becomes between your goals and your capabilities. This is inevitable when your internal resources are limited by your organizational agility. While you may be facing an uphill battle right now, the right QA approach can instantly change your fortunes.

Beyond your baseline functional testing, there are many areas of opportunity for you to improve both your short- and long-term fortunes as an organization. However, no opportunity comes without a challenge.

Three trends in particular are reshaping the way people interact with software and devices today. Understanding how each of them impacts your users is essential to providing the quality of experiences that they are looking for.
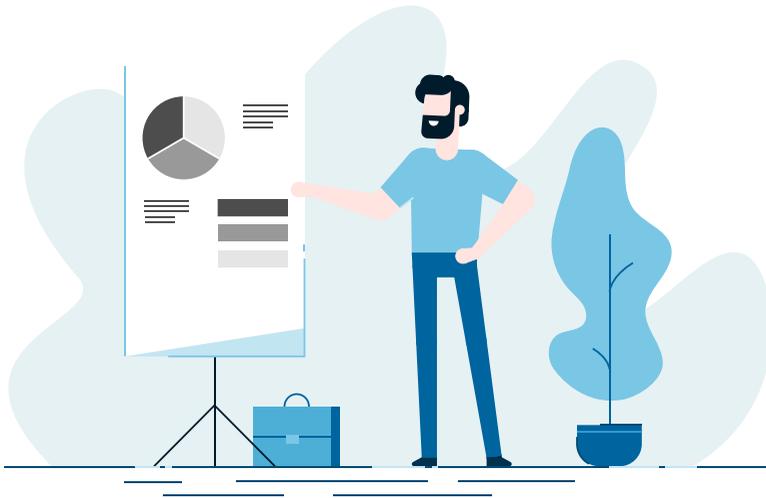
Accessibility for All

Accessibility is a concept that needs to be at the forefront of your design and development strategy. It's imperative, not only to avoid legal repercussions, but because it's the right thing to do for your business and customers.

> **23% of litigation and settlements since 2000 happened in the past three years.**
>
> Source: Siteimprove

What many don't realize is that one-quarter of U.S. adults are known to have some form of disability, according to the CDC. That's a sizeable portion of your potential audience you could be alienating and a lot of potential revenue you could be leaving on the table. While this alone should motivate you to meet current accessibility standards, there's one more thing – accessibility benefits everyone, not just the disabled community.

> **71% of people with disabilities leave a website immediately if it is not accessible.**
>
> Source: Disability-Smart

So how do you get better? Half the battle is understanding the standards and guidelines set forth on accessibility. Even the most experienced developers are not fully versed in them. Getting regular accessibility audits from trained professionals not only provides insight into what does and does not work, but also gives suggestions on how to make the necessary adjustments.
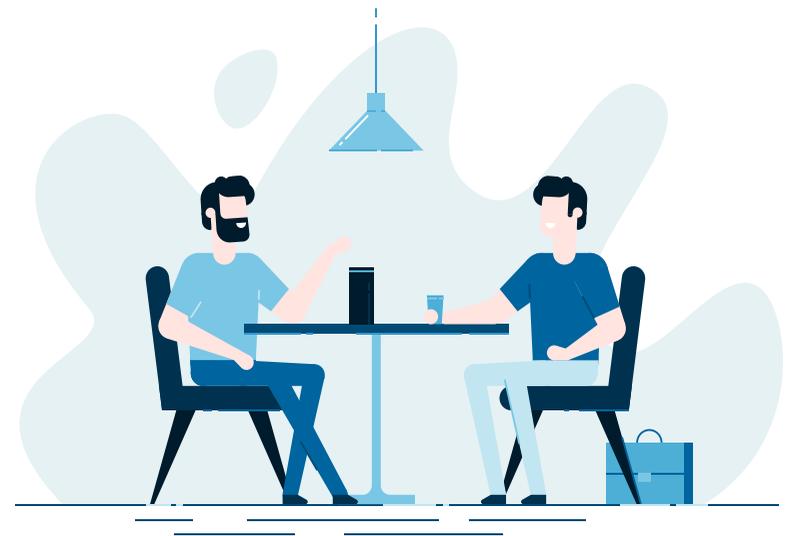
Making Noise With Voice

"Hey Alexa, what percent of Americans use voice assistant technology?" As of March 2019, the answer is 26.2% and growing, according to Voicebot.ai. There is no technology poised to impact our lives more in the coming years than voice. Whether it's your in-car infotainment system, the speaker you have in your living room, or the remote control to your TV, voice provides a frictionless element into our day-to-day actions that we cannot get anywhere else. More and more businesses are entering the voice ecosystem by the day, but few are prepared to overcome the uphill battle ahead.

As if QA wasn't difficult enough to test for, voice presents a whole new world of challenges for developers and product teams. Now, in addition to your existing test coverage, you have various languages, dialects, and tonalities to test for. On top of that, the delivery of voice commands and the words people speak are critical to a quality voice app.

> **Only 6% of voice apps are used beyond the first week of interaction.**
>
> Source: VoiceLabs

Although there has been a recent explosion of voice-enabled apps, there is still time to formulate your voice strategy. Let's face it, you most likely don't even have a voice expert to set the framework for your experience yet. Even if you do, securing testers who speak your desired languages or dialects is another challenge entirely. Getting a head start now will definitely pay huge dividends in the future.
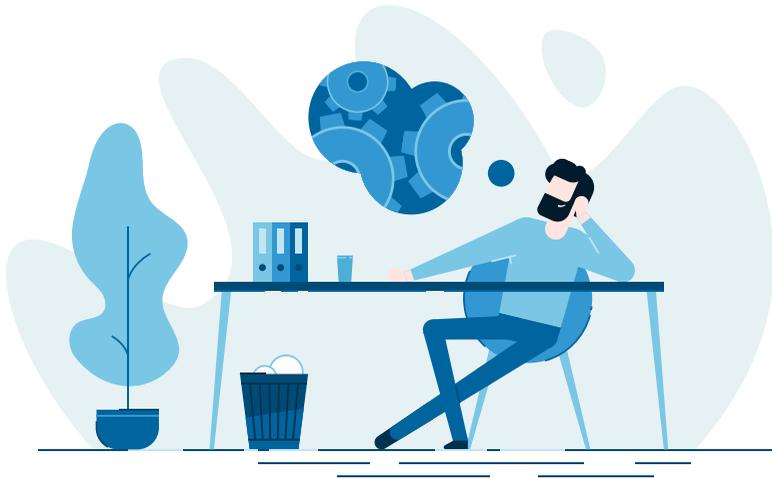
Smarter by the Day With AI/ML

Recently, it seems like just about every development organization is being pushed to lead the charge for their AI/ML strategy. Coding and developing software is already a laborious and time-consuming task, but it can't continue to be if you want to innovate at a faster pace.

> **By 2035, AI could boost profitability rates by nearly 40%.**
>
> Source: Accenture

Fortunately, artificial intelligence is quickly becoming a viable solution for those striving to improve the speed and accuracy of their software development. That said, building a sophisticated AI system is clearly not an easy or quick project. These systems require myriad data points and a continuous stream of data inputs to achieve the volume needed, which varies by use case.

> **47% of digitally mature organizations have a defined AI strategy.**
>
> Source: Adobe

Collecting that volume of data is difficult as it is, but ensuring the quality of it is just as much of a concern. Securing the best quality data means going straight to the best source: your users. But do you have a way to do so? And do you have a way to quickly validate all of the incoming data? Formulating that strategy now is critical to not being left behind tomorrow.

> **"We learned a lot about usability from how Applause testers are using these apps versus our internal testers."**
>
> Christian Schmid, Senior Advanced Technology Engineer, BMW

Long labeled as the "The Ultimate Driving Machine," BMW vehicles have been lauded for their superior driving experience. Where that experience was once predicated solely on engine capabilities and overall vehicle performance, BMW drivers have come to expect seamless digital capabilities as well.

With more and more car manufacturers racing to develop their own in-car experiences, BMW stepped on the gas. Leveraging partnerships around the world with various app developers, BMW worked to create a stable of car-friendly apps as part of their in-car experience. However, with a worldwide range of vehicles and a mandate to test on both old and new in-car frameworks, BMW found a large hole in its testing capabilities.

Traditional research labs are not generally known to have space for a fleet of new vehicles, let alone a full complement of older models.

With that in mind, BMW reached out to Applause for assistance in filling its testing gaps and helping to deliver the quality of in-car experience their customers expected. With a specialized, out-of-the-lab approach, Applause delivered the resources needed to execute on BMW's vision.

With this innovative approach, Applause not only helped provide insight into the functionality of the apps, but the usability of them as well. Best of all, these apps were being tested by real BMW drivers in real driving conditions. In fact, one tester even went so far as to test an app designed for racing enthusiasts at his local race track.

This unique tester perspective delivered an immense amount of value to BMW and the overall driving experience of its customers. As the in-car experience continues to evolve, it's this quality of feedback that will push BMW and other forward-thinking automakers into top gear.

How You Can Ensure Quality in Today's Digital World

The reality is, QA has not evolved at the pace of software innovation...at least internally. If you've been looking within the office for a solution, chances are it's already too late.

With Applause, you gain a community of vetted testing professionals that are available on-demand for nearly any testing need you have. While that may sound awfully similar to what an offshore team or consultancy provides, Applause offers very specific advantages. For those who value both speed and quality, there simply isn't a better option. This is where crowdsourced testing shines.

Instant Scalability

Scaling testing resources quickly is often the biggest barrier to Agile development. With Applause, testers are available when you need them (e.g. nights, weekends, holidays, etc.) to augment your internal team's capacity and productivity needs. Everyone deals with inconsistent workloads or seasonality, so worry no more about being short-handed.

Vetted Testing Community

Make sure the testers you get are the ones you need and of the quality you demand. Applause testers are all thoroughly vetted and rated so you know exactly who is contributing to your efforts. They also span a wide range of domain expertise so any challenge you have can be expertly addressed.

Unparalleled Device & Location Coverage

True device and location coverage means having real people with real devices in the locations you need – no simulations. Applause's global community of testers deliver all of that, allowing you to test your software in the unpredictable conditions of the real world.

Real-Time Quality Results

It's one thing to have access to additional testing resources, but another to receive actionable feedback immediately and continuously throughout your sprints. Applause reports provide the data that matters to you (no duplicates) with clear directions on how to reproduce it so you can quickly remediate any issues.

Custom Testing Teams

Your customers are the ones who ultimately use your product, so why test with anyone else? Applause customizes testing teams with a select number of testers (e.g. 10-20) that intimately know your software, serving as an extension of your team by integrating directly into your own systems and daily scrums. This producest timely, unbiased feedback directly from your target consumer.

Numbers Don't Lie

In 2018, Hobson & Company, a research firm focused on Return on Investment (ROI) studies, worked with Applause to explore how crowdsourced testing addresses the common software development challenges faced by its clients.

> **Applause delivers 753% average ROI for customers.**
>
> Based on a 3-year investment totaling $1.1M

Reduce Testing Effort & Cost

Applause helped relieve internal testing teams from an overwhelming workload, allowing them to focus on the areas that are most valuable to the company. On average, teams experienced a 200% increase in capacity, which led to a significantly higher level of test coverage.

Improve User Experience

By testing with real people and devices in actual customer situations around the world, the quality of clients' digital experiences increased dramatically. On average, clients reported an increase of 10% in both customer retention and conversion rates.

Faster Innovation With Lower Risk

With more capacity comes the ability to churn out results at a faster pace. Clients experienced a 150% average increase on annual product releases. By increasing the pace of innovation, teams also saw a 30% increase in planned revenue.

SHAKE SHACK

"Operationally we nailed it, but we found bugs and crashes we never were expecting."

Zach Koff, COO, Shake Shack

200,000 New Downloads	**10** Locations	**775+** Orders Fulfilled	**+15%** Value of Mobile Orders

Stats are based on a two-month period.

Shake Shack became popular for its delicious burgers, but it became a national icon for pioneering the digital-forward movement in the restaurant industry. However, creating a mobile app that delivered on quality at every step of the consumer journey was a monumental challenge.

Covering all of the bases from a testing standpoint was a complex endeavor, including everything from mobile ordering to physical pickup to mobile payments – in addition to verifying usability, performance, and operations workflows.

Knowing it only had one chance to make a good first impression, Shake Shack tapped Applause to apply what COO Zach Koff called the "ultimate stress test" on the application. The Applause community was tasked with everything from testing the ordering and payment features of the app to ensuring a seamless, high-quality experience in the app and the stores. Not to mention the time Applause spent in the field training Shake Shack employees on how to deal with the new mobile order workflows.

The rigorous testing uncovered an array of valuable feedback from both technical and user experience standpoints. Specifically, testers discovered unique errors like the app crashing during drink orders and failing to process American Express payments.

These insights proved invaluable in delivering a seamless end-to-end experience, and helped build both momentum and trust with Shake Shack customers which exist to this day.
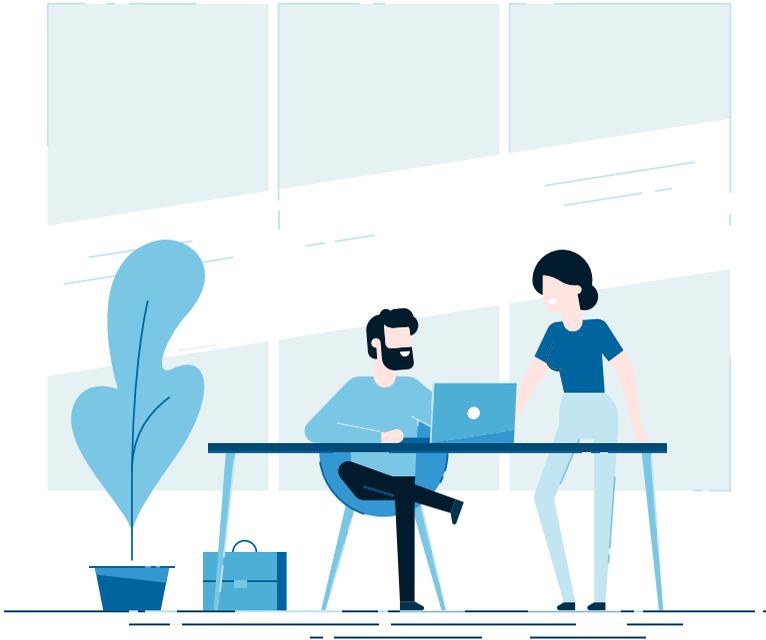
What's Next?

The digital ecosystem evolves every day in front of your eyes, so it stands to reason that your QA strategy should evolve with it. At the core of this evolution is the customer, but is the customer core to your development strategy?

If you are going to thrive in the days, months, and years ahead, you must embrace change as it comes. Accommodating these shifts begins by leveraging the very people who use your product to help make it better. By consistently listening and working with them, you are one step closer to a truly Agile testing practice.

That said, how successful your digital experience is ultimately comes down to the priorities of your organization. When organizations truly focus on QA and its benefits, they are building a solid foundation for success. Add Applause into that blueprint and you'll have the entire structure for success.

The question is, are you ready for the new age?

To learn more about Applause and how we can help you create world-class digital experiences, visit us online at: www.applause.com.