



**DRIVING SUPERIOR
CUSTOMER EXPERIENCES
AND LOWER COSTS USING
CROWDSOURCED TESTING**



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ABSTRACT

The burgeoning demands of today's highly competitive markets place considerable pressure on organizations to be both efficient and innovative with their IT applications. As the digital economy comes of age, customers expect a channel-agnostic experience in their digital journey across technologies and devices. In addition, the constraints of shorter lead times and product cycles, resources and intense competition have all but eliminated the luxury of measured and deliberate actions in the quest for quality and precision of outcomes.

The increasing variety of web applications, mobile devices, games, and the increased focus on agile development, cloud apps, and security make the case for crowdsourced testing (or crowd testing) solid as traditional testing cannot cover the range of skills and devices or technologies on demand as crowd testing can.

This paper details how crowd testing can be leveraged to achieve business objectives such as speed-to-market, improved quality of applications and cost savings. Crowd testing helps an organization leverage a vetted external pool of testers to conduct the testing of applications. A key advantage is that the crowd makes your organization's products channel, technology and device agnostic – the most important quality to have in this digital age when newer technologies and channels are emerging by the day and the variety of devices multiplies.

With the crowd having real-world users each with their own unique devices, your organization can improve test coverage and identify defects specific to operating systems, browsers, and devices. In the end, it helps you enhance customer experiences, improve productivity and reduce time to market with faster, customer usage-focused testing. Crowd testing helps improve cost effectiveness as defects are identified faster and earlier in the development cycle. Moreover, with fewer dedicated resources for testing and a system of compensation based on the actual discovery and severity of defects, you reduce capital expenses significantly. In today's market, faster time to market and cost effectiveness are key differentiators for any brand.

QUALITY ASSURANCE IS NOW BUSINESS ASSURANCE

In the transformation to business assurance, testing and quality are today viewed as lines of businesses that drive the relationship between an organization and its customers. They are crucial parameters that evaluate CIO performance – be it in their accountability for DevOps, performance testing of mobile applications, or cloud technologies.

Crowd testing is driven by the need for:

- Methodologies and tools that cater to digital and mobile testing
- Creative and cost-effective Testing as a Service (TaaS) models
- Leaner development and testing systems for faster delivery of more fluid applications
- Capabilities that deliver on 'agile' compulsions of service-based and output-driven requirements

- Innovative automation and DevOps for faster and organized release to production
- Greater attention to security testing
- Cross-skilled resources that overcome the rigidities of legacy, traditional waterfall processes and restrictive licensing models
- Cost effectiveness - limited budgets make it difficult to allocate more resources for testing
- Capability to bring the right innovation to the market quickly

FACTORS THAT MAKE CROWD TESTING THE 'IN THING'

Web applications

- UI testing of customer-facing web applications
- Specialized testing activities - A/B testing

Mobile testing

According to the World Quality Report, 55% of organizations now test mobile apps, up from 31% last year in 2014. Yet, 56% lack effective testing procedures.

- Mobile devices are now a major part of many Mobile App Testing organizations' digital development strategy
- Proliferation of mobile devices has led to significant increase in mobile testing activity - functionality, performance and security
- Multiple OS used adds to the challenge - calls for functionality testing and integration testing
- Using Cloud power to communicate with the ERP systems adds to the increased need for crowd testing
- Many businesses lack the testing specialists, tools, and consistent methodology needed for effective mobile development.
- Security is a key consideration for mobile testing - especially with devices interacting in the Internet of Things

- The geographic spread of end-users can be leveraged
- Using a crowd, different device combinations that are available can be used.

Game testing

- Games are today more engaging with interactive options powered by the Cloud
- New channels include virtual currency, in-app purchases, constant updates and social gaming
- Testing scope needs to be consolidated

Cloud Apps

- Cloud computing is becoming an increasing part of the IT mainstream. With more software applications being hosted on Cloud, a positive growth in the adoption of Cloud based testing is imminent.
- Cloud infrastructure offers a convenient and less expensive environment compared to other test environments
- Cloud testing is flexible, allowing businesses to scale up or down as part of a dynamic testing strategy
- Concerns related to data security and performance in cloud based environments need to be addressed

Testing in the agile development environment

- Building a holistic testing approach that best fits the agile development methodology
- Continuous testing is emerging fast - Helps getting into the delivery phase without wait
- 'Testing-in-production' - Provides constant flow of updates on features and value to business

Context-Driven Testing

- Context-driven testing addresses fragmentation due to SoLoMo (Social Media, Localization, Mobility)
- Groups of diverse context-based testers can achieve greater "surface area" coverage by approaching integrated software systems from multiple angles
- Obviates the need for business to maintain central hubs of hardware, middleware, and test environments

Security Testing

- This arises out of increased connectivity of data and information systems with the rise of cloud computing and IoT
- Malware targeting mobile applications is expected to increase - diversity of testing in prevention becomes a critical requirement and opportunity

TRENDS IN CROWDSOURCED TESTING

Organizations must move testing closer to the business - by developing a comprehensive digital testing strategy aligned to business strategy. This has led to the following emerging trends:

Gamification

- Engaging crowd testers
- Motivating them to spend more time in identifying defects
- Creating a fun environment
- Advantage – gain maximum benefit from testers; get maximum test coverage

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Social Testing

- Aims to strike a balance between the right level of testing and the crucial speed-to-market
- Testing by real people with real devices in real conditions provides real time metrics and full transparency – results in greater confidence of releases

BENEFITS OF CROWDSOURCED TESTING

- Unlocks the collective creative power latent in consumers to accelerate marketing and innovation
- Enables output-based pricing
- Sources relevant and skilled testers from all disciplines and levels; ensures appropriate testing for the given task through vetting
- Facilitates predictable costs and better time-to-market

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