



# KEYWORDS QA AUTOMATION FASTER, BIGGER AND BETTER GAMES

For more than 20 years, Keywords has been working with AAA titles and supporting industry leaders such as EA and Ubisoft. We collaborate as a trusted, go-to partner for our clients as well as a provider of smart, hybrid QA automation solutions for major games titles and modern projects.

## The Challenge

A leading digital entertainment platform provider approached Keywords with a request to build a performance and cost efficient QA and tools strategy. The solution would help address their complex needs, which included:

- Regression scope of tens of thousands of checks per release on web and console.
- Target for device automation coverage, including new platform support.
- Significantly decreasing the full QA cycle time, resulting in faster releases without compromising on quality.

## The Solution

The primary focus of the client's solution was to maximise automation coverage and expedite releases through reasonable automation. To address these needs, Keywords proposed a smart, hybrid QA strategy that combined automation, manual QA, custom QA tools, frameworks and proprietary middleware that included the following:

- Automation of the majority of regression and integration tests for each release.
- Automation of most of the soak and load testing.
- Immediate test coverage of new features via manual and semi-automation tests to minimise quality risks.
- Various device automation frameworks and middleware solutions to add new platform support, some of which would need to be created fully as they did not exist for these platforms previously.
- A variety of QA tools were developed, including test management dashboards, Network Operations Center (NOC) traffic control tools and device management software that helped reduce QA cycle time.
- DevOps & Network Operations Centre: A monitored automation infrastructure with a large Selenium grid was set up to help ensure that all the frameworks and tests worked in parallel.

## OVERVIEW

### Customer Profile

A leading digital entertainment platform provider.

### Industry

Games and e-commerce.

### Business Challenge

Large regression scope versus the desire to release quicker at a reasonable cost. A requirement to remove technical constraints for bigger automation coverage.

### Keywords' Solution

A smart, hybrid QA strategy combining automation, manual QA, custom QA tools, frameworks and middleware development.

### Results

More than 90% automation coverage for regression scope, shorter release/test cycles, increased bug catch rate and bug quality. Mid and long-term savings.

## The Result

Keywords exceeded the expected automation results for the project.

- The automation coverage was increased to 130,000+ automated regression tests per release. It required just hours to obtain initial automation results in comparison to a team of 50+ testers working for one month performing similar tests.
- Implementation of smart automation infrastructure with screenshot capturing and extensive logging capabilities to support parallel tests - running on different devices, platforms, browsers and locales - helped significantly decrease the full QA cycle time.
- Creation of a proprietary middleware platform and framework developed by Keywords allowed extended automation on a developer console utilising computer vision techniques.



The approach has resulted in a higher bug find rate, with fewer errors, faster turnaround and fewer costs, as outlined in the following table.

	Manual tests per cycle	Automated tests per cycle	Cycle duration	Test hours per cycle
At the start	1,000	70,000	6 days	1,536
Currently	350	130,000	2 days	288

## So when is it most efficient to use QA Automation?

Supplementing your manual QA with automation can help increase your team's overall performance. The following scenarios are indicative of where automation is most commonly useful.

### 1. High volume of repetitive tasks

If you have to run the same checks again and again with minimal or no changes from one build version to another, hiring an engineer to build an automated tool or script will increase the overall efficiency of the team.

### 2. Tasks covering multiple devices, platforms, browsers and OSs

An automation script can run in parallel on an unlimited number of devices or browsers. This can heavily outweigh the benefits of manual testing, where a single person usually conducts one test on one device or browser at a time.

### 3. Tests that require significant time to execute due to their complexity or data flow management

If your tests require data collection from various sources needing further processing, calculations, transfer from one system or database to another and/or are dependent on an unusual or timed/delayed schedule. Prolonging extensive, complex procedures can be strenuous and costly if done manually, even more so if they take place on a regular basis.

### 4. Very high precision results and calculations are expected

Human work also means human error. Machines perform well at fast, repetitive activities and those requiring precision, however people are far better at creative work and making decisions. Automation splits responsibilities between the strengths of people and those of machines, reducing human error and fallacy.

## Keywords QA Automation Services

Keywords provides a range of complex automation and hybrid solutions for all major platforms in the marketplace, supporting many different scenarios including:

- PC, console, web and mobile platforms
- Load and performance testing
- In-game bots and simulation software
- In-game tools to improve tester efficiency
- Semi-automation solutions
- Computer vision-based automation
- Network testing automation
- Front-end and back-end solutions

### About Keywords Studios

Keywords Studios is a leading technical services provider for global video games and beyond. With locations in Asia, the Americas and Europe, Keywords Studios has a breadth and depth in multiple industry-leading service lines including Art, Engineering, Audio, Functionality QA, Localization, Localization QA and Player Support. Working across all major platforms, in more than 50 different languages, Keywords Studios delivers support for its clients across the globe.

