Automation at the Core of Agile Development

Sky streamlines testing and improves quality with Accenture StormTest
In the digital video industry, rapid new product development is the foundation for growth. Through new product development, Sky—one of Europe’s leading entertainment and communications companies—drives its business forward and deepens engagement with customers. At the core of its product development efforts is the Sky set-top box. By connecting its Sky box to the Internet Sky can quickly add new functionality, upgrade the main television User Interface (UI) and improve the user experience.

Moving to a hybrid Internet Protocol (IP) and Set-Top Box platform required both market-leading innovation and reliability. Sky needed to transform product delivery processes inside and out. In response, Sky revolutionized the way it develops software for set-top boxes. Its adoption of modern delivery practices, including Lean, Agile, and Extreme Programming (XP) methodologies, combined with automation and continuous integration processes, has been fundamental to Sky’s ability to deliver breakthrough technologies to market, quickly.

Sky’s deployment of the Accenture StormTest test automation platform is an integral component of Sky’s revolutionized approach, enabling Sky to streamline test cycles and improve product quality. With its latest generation of CPE, Sky Q, benefitting from the approach and insights applied to developing the Sky+ platform.

Through the adoption of market-leading practices powered by StormTest, Sky has increased its software releases from one every one-to-two years to up to four releases per year. It has also increased its testing capacity by more than 40% and improved product quality, all while holding testing resources constant.

“Automation means we are able to assimilate more releases faster. The valuable insights our automated tests provide, mean QA is asked to collaborate early in the delivery cycle.”

Brian Myburgh, Test Infrastructure and Automation Manager, Sky
Shifting Left

Product quality is a board level focus for Sky, with its annual corporate report frequently highlighting quality improvements. To deliver on its innovation agenda with consistently high quality, Sky had to transform its development processes.

This transformation required greater collaboration across teams; reliable insights into the performance and functionality of new services; and a way to increase the velocity of test cycles. New processes and technologies were necessary to support the development of high quality software. Change was needed across Development, System Integration (SI), and Quality Assurance (QA) teams.

Key to this transformation was pretesting, executed throughout the development cycle. Pretesting catches errors earlier, cuts time between releases and improves overall software quality. For Sky, this meant shifting left its testing, by running multiple test suites across the development cycle. This sets a clear quality benchmark, while providing early visibility into build quality, before it is accepted by the QA team.

Sky introduced continuous integration best practices to product development, drawing on the influences of Agile, XP and Lean. They deployed the most modern tools for development, integration and testing of software to enable an agile and test driven development environment. A vital component of this change was the automation of manual processes. Sky historically relied almost exclusively on manual testing for its set-top boxes. Sky now looks to build automation in at the start.

Shifting left has also meant the SI and QA team’s role is to work closely with the various middleware development teams, authoring test scripts, validating releases, generating development and release builds and driving the generation and closure of bug reports. Test Engineers are integral to ensuring the quality of the integrated builds and collaborating with engineering teams to triage bugs. New, best-in-class tools were required to enable closer collaboration across Development, SI and QA and Sky selected Accenture StormTest to support and embed these changes.

Using automation to test earlier and more effectively

Sky relies on StormTest as its test automation platform using the product to streamline QA processes, and validate each generation of digital receiver and associated software releases. StormTest had been highly effective for Sky’s standard definition platform; however the introduction of high definition and the addition of an Ethernet connection to the Sky box, has taken demands on test automation to a whole new level.

Sky typically now has up to four major software releases per annum, with each release involving approximately 200 builds over the course of the year for each platform. Sky releases builds continuously, and at any point in time there are as many as three builds running in parallel with different configurations, across five platforms. Automation must work on every one of those builds. Teams across development, SI and QA rely on StormTest to help them address this massive challenge.

With functionality moving forward on a daily basis, to keep pace with the rate of change, Sky’s Automation team has adopted techniques such as paired programming to both improve the quality of the code, and reduce script review cycles. By collaborating closely, change is facilitated—meaning results can be provided at the click of a button, so there is a continuous feed into development as code is being developed. This avoids downstream problems, improving quality and speeding up release cycles.

Across the complete software stack, teams are sharing information, and regularly taking proven test methods into new parts of the business. Communication between teams is improved through the sharing of video logs, screenshot captures, and test results.

“Teams now consider how code will be tested as it is being developed.”

Brian Myburgh
Propelling quality and rapid innovation

Sky’s deployment of StormTest has streamlined test cycles and improved product quality. Automation enables testing to run 24x7, which has contributed to reducing the release cycle, on a like for like basis, from eight weeks to three weeks. Sky has automated approximately 5,000 tests addressing functional and non-functional requirements, sanity, reliability and parental controls. For example, through automation, Sky:

- Reduced non-functional requirement testing from eight to three person days per two week test cycle.
- Executes continuous testing of 6,500 combinations for parental controls over a seven day period
- Eliminated the need for virtually any manual effort to execute stability testing

Sky’s deployment of StormTest has also contributed to year on year reductions in both customer calls and service visits.

Sky transformed product delivery processes inside and out, from a traditional waterfall development and test approach towards an Agile and test-driven environment. The company’s adoption of modern delivery practices is empowering Sky to deliver breakthrough technologies to market, quickly. This innovation, wedded with an unremitting focus on quality, is propelling Sky’s growth in an industry experiencing constant reinvention.

By the Numbers

Sky’s deployment of Accenture StormTest has:

- Increased software releases from 1 every 1-2 years up to 4 releases per year
- Enabled more than a 40% increase in the level of testing with constant resources
- Automated testing to run 24x7
- Reduced the release cycle, on a like for like basis, from eight weeks to three weeks.
- Contributed to year on year reductions in both customer calls and service visits

“We never release anything that isn’t better than the previous version. With StormTest we know we have a reliable automation platform.”

Brian Myburgh
About Accenture Digital Video

Accenture Digital Video is an Accenture business unit focusing on helping companies build successful digital video businesses by enabling them to capture new growth opportunities while maintaining profitability in their traditional business in a rapidly changing market. Working closely with clients, Accenture leverages a portfolio of highly relevant integrated business services enabled by open technology platforms to deliver successful video business outcomes; from thinking to planning to doing. A global industry leader, Accenture Digital Video has a 20 year track record of advancing video technology and business innovation, supported by a global workforce of more than 2,000 dedicated professionals helping clients succeed in a complex, volatile landscape. Visit us at www.accenture.com/us-en/accenture-digital-video

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