

WORLD QUALITY REPORT

2017-18 NINTH EDITION

United Kingdom

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IMPORTANT TRENDS

- 61% of UK respondents have seen a rise in the share of QA and Testing in the overall IT budget over the last four years.
- The biggest trends in QA and Testing are the move towards automation, the impact of digitalisation and the continued shift towards agile and DevOps.
- Challenges exist with regard to test data management, data security, test environment management and a shortage of skill sets.

For the UK, Brexit is the biggest news of 2016. It has generated a tremendous amount of uncertainty, with organisations unable to understand its full implications till further clarity emerges out of the current round of political negotiations. As a result a number of large, transformational IT projects are currently on hold. This has impacted the investments being made in QA and Testing as well, a function that has until recently been going through a period of transition in the UK.

Currently, the biggest trends in QA and Testing are the move towards automation, the impact of digitalisation and the continued shift towards agile and DevOps. In addition, there are important challenges with regard to test data management, data security, test environment management and a shortage of skill sets.

At an overall level, the share of QA and Testing in the IT budget has been rising in the UK. As many as 61% of our UK respondents have experienced this rise within their own organisations. When asked about what was driving this rise, respondents gave the highest weighting to factors such as 'business demands for higher IT quality', 'increased need for co-location' and an 'increased number of developments and releases'. Expert opinion also points to the increasing complexity of applications and challenges related to test environments as important contributors to this rise.

With regard to individual trends, the adoption of agile and DevOps is increasing across sectors. According to our survey, the most popular agile methodologies in the UK were Scrum, Dynamic Systems Development Method (DSDM) and hybrid models. The

Scaled Agile Framework (SAFE) is also rapidly gaining in popularity. When asked about their greatest challenges in applying testing to an agile environment, respondents gave the highest weighting to 'difficulty in slicing test activities for more than one location for distributed agile', 'lack of appropriate test environments and data', 'lack of an appropriate testing approach that fits with the agile development method' and 'difficulty in re-using and repeating tests across sprints/iterations'.

More and more organisations are adopting DevOps. According to respondents, the most common DevOps practices used in UK organisations were 'usage of loosely coupled architectures and/or micro-services', 'virtualisation of environments' and 'continuous monitoring used along with predictive analysis'.

Experts also pointed to challenges faced by organisations in the end-to-end integration of agile and DevOps across their business processes. Many organisations find that while they have been able to adopt these methodologies for their customer facing operations, integrating these ways of working with the multiple downstream interfaces is proving to be more challenging. This is particularly true for industries like finance and banking, which have legacy IT systems and strict processes (including regulatory obligations) in place, that make it harder to adapt to agile and DevOps ways of working.

The adoption of agile and DevOps is also having an impact on the way in which testing activities are organised. With testing activities split among a number of different teams, vendors and locations, there's a clear trend towards de-centralisation. This was

also confirmed in our survey, which found that the hybrid Testing Centre of Excellence (TCOE) is the most preferred model for the organisation of testing activities in the UK. This was followed by 'test excellence centres' and 'captive TCOE in a build-operate-transfer model'.

The biggest trend in the UK market today with regard to QA and Testing is automation. Our survey results show that automation seems to be particularly popular for activities such as generating and executing functional test cases as well as generating test data. Currently, however, there is no one-size-fits-all tool on the market and as a result, companies are being forced to invest in a number of different tools. However, the consistency, the standard and the re-usability of these tools is a challenge and with companies unwilling to throw out their existing investments, it is becoming harder and harder for them to derive the complete benefits of automation. In response to these trends, major suppliers and the more trusted brand names have also been making their solutions more compatible with other products. According to our respondents, the main challenges with achieving their desired level of automation were 'difficulties in automating due to multiple development lifecycles', 'challenges with test data and environment availability' and 'difficulties with integrating different automation tools together'.

Another big trend, caused by digitalisation is that of omni-channel testing. According to our respondents, when testing mobile applications, they focused mostly on efficiency/performance, certification of application and functionality. When testing mobile devices and multi-channel applications, it is the ability to quickly test the numerous permutations and combinations of devices and operating systems possible which is a big challenge. Per our survey, the biggest challenges when testing mobile and multi-channel applications in the UK were 'not enough time to test', 'not having the right testing process/method' and 'not having the devices readily available'.

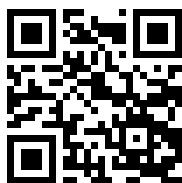
The above are the most noticeable trends in the UK today. Apart from these, there are also significant challenges. Chief among these are the rising concerns around security. This also showed

up in our survey, for when asked about the objectives of their IT strategy, UK respondents gave the highest weighting to 'enhance customer experience' followed by 'enhanced security'. This concern with security is driven both by stringent regulations as well as the impact that security breaches can have on a brand in today's connected world. The release of the General Data Protection Regulation (GDPR), which will be implemented early in 2018, has brought such concerns into greater focus.

In fact, the pending release of the GDPR has also added to the challenges around test data management due to its data privacy requirements and the heavy financial penalties for non-compliance. This is an area that is already becoming more and more complex due to DevOps and agile models as well as the move to the cloud. In addition, with the GDPR also applying to test environments, organisations may be forced to rethink their current test data management approaches. Similarly, test environment management is another area which many organisations are struggling with, as they look for ways to speed up and automate environment provisioning and deployment.

Another overarching challenge is that of finding QA and Testing professionals with the right skill sets, a concern that is likely to be exacerbated by Brexit and the prevailing political anxiety. The increased use of agile and DevOps and the formation of smaller, integrated teams means that testers today need to have a much wider variety of skills than earlier. More and more organisations today are looking for Software Development Engineer Testers (SDET), as well as those skilled in automation and omni-channel testing and there is an urgent need to retrain the workforce to meet these requirements.

Finally, the increasing alignment between business and IT, a move towards hybrid cloud and a rising trend around testing of Internet of Things (IoT) products are some of the other trends which help complete the picture for QA and Testing in the UK. Looking to the future, we can expect technologies such as cognitive and robotic automation and Artificial Intelligence (AI) to emerge as major trends over the next 3-5 years.



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