

WORLD QUALITY REPORT

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China

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IMPORTANT TRENDS

- DevOps is one of the hottest new trends in China and an increasing number of organizations are looking for talent which can help them upgrade from a legacy software development model to a DevOps model.
- The percentage of the IT budget being spent on QA and Testing fell from an average of 33% in 2016 to 27% this year.
- The rise of micro-services architecture has increased the complexity of testing and led to challenges in the adoption of automation in testing.

A distinguishing feature of the Chinese market is that different sectors are at different levels of maturity with regard to the QA and Testing function. In general, the retail, High Tech, e-commerce and multinational companies are ahead of the curve when it comes to the maturity of their QA and Testing practices. They are early adopters, and as such, help in the diffusion of new ideas, frameworks and technologies to the rest of the market.

In the last year, such companies have shown a lot of interest in the adoption of DevOps. Many of them are in the middle of shifting to DevOps and are still figuring it out. In contrast, agile practices are fairly pervasive, with most companies having some level of experience with one or the other agile framework. Apart from this, the rising adoption of hybrid cloud, challenges related to automation and omni-channel testing and a fall in the share of QA and Testing in the overall IT budget are some of the other recent trends in the Chinese market.

The fall in the proportion of the IT budget spent on QA and Testing is surprising, as it reverses a trend that has been building up over the last three years. Yet, this percentage which grew from 31% in 2015 to 33% in 2016, has fallen to 27% today. One of the reasons for this could be the increasing competition caused by the entry of a number of new players in the retail and e-commerce sectors. As a result, a number of the leaders have seen their revenues

drop and in response IT heads have been tightening QA budgets. Another reason for this drop could be the hesitation on the part of a number of companies around cloud transformation. Due to this, a number of big upgrades and application level projects are on hold and this, in turn, has an impact on QA and Testing budgets. However, the long-term trend is upwards and according to our respondents, the share of QA and Testing in the overall IT budget was expected to rise to an average of 33% within the next three years.

Another trend that is immediately noticeable in China, is the almost pervasive adoption of agile across sectors. According to our survey, the most popular agile methodologies in China were Extreme Programming (XP), Scaled Agile Framework (SAFE) and Scrum. While such agile methodologies are ubiquitous, there are still a few challenges in the proper adoption of agile. According to respondents, the top three challenges they faced when applying testing to an agile environment were, 'difficulties in re-using tests across sprints', 'lack of a good testing approach that fits with the agile development method' and 'difficulties in slicing test activities for more than one location for distributed agile'.

In contrast, DevOps is one of the hottest new trends in China today, and an increasing number of organizations are looking for talent which can help them upgrade from a legacy software

development model to a DevOps model. Our survey results show that China is ahead of the rest of the world when it comes to DevOps adoption. However, expert opinion suggests that Chinese organizations still have a long way to go when it comes to the maturity of their DevOps practices, as they are at the beginning of the cycle of adoption.

At present, the most popular DevOps practices in China are 'breaking down of large efforts into smaller batches of work', 'adoption of loosely coupled architectures and/or micro-services' and 'usage of cloud based test environments'.

The move towards DevOps is having an important impact on Testing Centers of Excellence (TCOE) as centralized TCOEs are increasingly being replaced by smaller, integrated teams which can handle a variety of tasks. At the same time, TCOEs are still being used for certain non-functional testing activities such as security and performance testing. According to our survey, the three most popular models for organizing testing activities were 'usage of crowdsourcing solution for quick test capacity', 'decentralized TCOE for improved agility and efficiency' and 'TCOE factory in an offshore location with high cost savings'.

Another trend seen in China is a move towards hybrid cloud. According to our survey, an average 17% of all applications (as against 19% worldwide) are using private cloud, 19% are using public cloud (as against 19% worldwide), 19% are using hybrid cloud (as against 18% worldwide) and 20% are using on-premise cloud (as against 20% worldwide). In the last one year, the financial sector has been moving towards hybrid cloud particularly for mobile applications, whereas the High Tech sector has been moving more and more of their applications to the public cloud.

One of the big challenges when it comes to QA and Testing in China is related to omni-channel testing. To some extent, this is driven by the uniqueness of the Chinese market and the mobile apps which are popular. Instead of FB, Twitter or Instagram, the most popular apps in China are Wechat, Mobile Baidu and Taobao, which have very different mobile application environments. For instance, Wechat comes with many built-in mini-applications which increase the complexity of testing it manifold. In addition, there are also challenges related to required skill sets and availability of tools. According to our respondents, the top three challenges when it came to testing mobile and multi-channel applications were 'not having the right testing process or method', 'not getting enough time to test' and 'a lack of mobile testing experts'.

Another challenge facing the industry relates to automation. This can be explained by the rise of micro-services architecture, which increases the complexity of testing. There are also problems related to the tools available as well as a dearth of QA and Testing professionals skilled in automation testing. This was also borne out by our survey. For instance, when asked about the challenges in achieving their desired level of test automation, Chinese respondents gave the highest weighting to factors such as 'challenges with test data and environment availability', 'not having the right automation tools' and 'difficulties integrating different automation tools together'.

To summarize, China is a unique market which is slightly ahead of the worldwide averages in terms of a number of QA and Testing trends. At the same time, it also faces a number of challenges, especially with regard to automation and omni-channel testing. We can expect to see these issues getting resolved as well as a greater adoption of DevOps over the next couple of years.



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