

North America

Even in these challenging times, North America continues to set the pace in several key aspects of QA and testing

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In last year's report, we noted that North America (the US and Canada) was setting the pace in many aspects of quality assurance (QA), although it was making less progress in in test environment management (TEM). This year, we feel that that the adoption of cloud-based models has helped to address the TEM issue.

The focus is on business

The North America region provides a total of 20% of respondents to this year's survey, and we see a heavy commercial emphasis in their testing and QA objectives. Almost three-quarters (74%) of them said it was essential that QA contributes to business outcomes, and even more (77%) said that ensuring end-user satisfaction was critical. This is no surprise: customers in this region are known to be particularly demanding. Around two-thirds of respondents (67%) added that it was essential to support everyone in the team to achieve higher quality. This was higher than our survey average, but if anything, we would have expected the proportion to be higher still.

The views expressed about IT strategy as a whole are largely to be expected. The customer experience was rated highly, and for related reasons, we see that around two-thirds of North American respondents (65%) said that faster time to market was vital. A much higher proportion than this tell us the same thing in the field. However, the highest-rated response to this question was enhancing security (78%). With so much business going online in 2020, this is no surprise.

How well do North American organizations feel they are doing in achieving their application development targets? All the responses here were a little lower than average, in categories that included the completeness of testing, the sufficiency and availability of appropriate tools and methods,

and the clarity with which requirements were defined. The lowest figure was for the efficiency of testing in terms of speed and cost: only 29% of the region's respondents said they always achieved desired targets here. Our view here is not that North American organizations are doing less well, but simply that they are setting the bar higher for themselves, because of the size and nature of the market they serve.

Growth in agile – and progress

There has been significant growth in the adoption of the agile environment in North America. Last year, respondents told us 25% of their overall project or team effort was used for testing in agile. This year, that percentage stood at 32%, which is one of the biggest rises we have seen. Organizations are keen to put structures in place that will enable them to move fast.

However, this year's survey data suggests that organizations in the region face challenges in applying testing to their agile developments. Almost half (47%) said they had difficulties in aligning the tools they should use for automated testing, and almost as many (41%) said they didn't have a good testing approach that fit with their testing method. Over one-third (37%) said their agile teams lacked professional test expertise. These figures don't surprise us. Maturity is still needed here. It's not just about skills, but about mindsets: when working in this environment, greater familiarity with QA disciplines is needed.

For the first time this year, we asked our survey participants about the approaches they use to accelerate and optimize testing in their agile and DevOps environments. At first sight, it was surprising to note that for every option, North American responses were lower than survey averages. The tactics in question include shift-left testing, maximizing the

automation of test, and finding and removing redundant test cases. However, we reminded ourselves of the context. This is, after all, the North American market. The size, the scope, and the velocity of the workload are such that even a few percentage points below average are likely to represent greater effort than is being made in many other parts of the world.

This might also explain why North American figures are lower than average for the use of two quality metrics, which are the extent to which testing is covering code, and the extent to which it is covering risk. In fact, we also note that these two particular yardsticks have emerged only recently, and that for other, better-established metrics, including monitoring defect density and defect leakage into production, North American responses are ahead.

The region's respondents are more sanguine than most about the availability of the requisite testing and QA skills in an agile and DevOps context. For example, only 15% of them said knowledge of new test automation skills was lacking, when the survey average was almost double this (29%). The greater challenges were in the knowledge of CI/CD pipeline tools, and also in test environment, containerization, and test data skills, which in this latter case was also true last year.

Which criteria are the most critical for the successful adoption of agile and DevOps? For North American respondents, the most essential criterion was executive support, but in our view, this could have been higher still. The management of organizational change is more important than the technology stack that supports it – which is why it's also surprising that North America didn't also rate corporate culture more highly as a critical success factor.

Artificial intelligence, machine learning, and test automation

In other national and regional pullouts this year, we've seen a fair degree of enthusiasm for the use of artificial intelligence (AI) and machine learning in testing and QA, and that is also the case for North America. However, in our view, the difference is that in this part of the world, the enthusiasm is

backed by more effort and investment. High proportions of the region's respondents expressed satisfaction that their test strategies will work for AI, or that only small changes to the current test strategy would be needed. Indeed, smart analytics are becoming part of standard cycles. For instance, we see data gathered by internet of things devices in people's homes is being analyzed and interpreted using AI methods, and is then being fed back into insurance company business models.

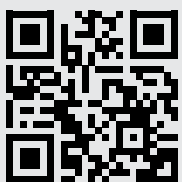
Test automation is also perceived to bring benefits, but in our view, the nature of that perception needs to change. Typically, test automation is measured in terms of speed – in other words, by the extent to which it can reduce time to market. Indeed, in this year's responses, we see 72% of North American respondents pointing to reduction of test cycle times as a benefit. In years to come, we expect to see the reduction of test costs grow in importance as a perceived benefit of test automation.

Market maturity

North America differs from many other geographies in another respect, and that's in its assessment of the impact of COVID-19. Whereas several other countries and regions have expressed determination to change their focus for testing and QA in a post-pandemic world, that's less the case here. Most of the North American figures are lower than average – for instance, for a determination to focus more on customer experience, for more and better collaboration tools, and for more performance validation.

We believe this indicates the maturity of the North American market. When there is already a high emphasis on customer experience and on performance monitoring, and when there is already widespread use of team working tools, there isn't really a need to express greater commitment.

Does this mean that, even in these challenging times, North America is still setting the pace in many ways? It would seem so.



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