NORTH AMERICA

A region on a roll

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If there has been just one region of the world that has been setting the pace in quality assurance (QA) in recent years, we believe that region would be North America; and our own experience in the field tells us that the region's QA is continuing to mature. As adoption of agile and DevOps continues, so we see testing increasingly being decentralized and federated, not just into the rest of the software development lifecycle, but into individual lines of business. Now more than ever, quality is everyone's business.

We also see a growing emphasis on what we might term the horizontal elements of QA, such as test architectures and testing tools. In addition, we've watched as time to delivery becomes the most important QA metric in the region. As we shall see, it's a point that's reflected in this year's survey data.

Staying on target

Let's turn to those responses now. In terms of IT strategy, the emphasis was business-oriented, as we would expect, with enhancing customer experience as the principal area of focus. For testing and QA specifically, and unlike last year, the importance of various objectives was both high and fairly evenly weighted, with only a few percentage points separating protection of the corporate image (64% of North American respondents) from the highest two responses, at 69%. The first of these two high objectives was to support everybody in the team to achieve higher quality – exactly the "quality is everyone's business" point we just made. The second was to make testing and QA a smarter and more automated process. This represents a significant increase on the results for the same criterion last year.

The region seems comfortable with the overall progress it's making on achieving its application development targets. Almost two-thirds (65%) of respondents said the tools and methods they need for test activities are sufficient and available, and almost as many (63%) said activities across teams are well orchestrated and integrated – further evidence of the collective QA mindset. It was also notable that a much higher-than-average 59% of North American respondents said that end-to-end automation from build to deployment is in place. We see this as a sign of the extent to which both DevOps and continuous integration and continuous delivery (CI/CD) are growing in prominence.

The confidence extends to the achievement of testing targets for key applications. All responses were above average, and, as was also the case last year, the highest two of them were having the right QA and test expertise, and meeting quality goals. The rise in automation that we saw just now was evident here too: almost two-thirds of North American respondents said they always or almost always have the right level of test automation, against 57% last year.

Progress in agile, DevOps, and intelligent test automation …

The adoption of agile and DevOps continues apace in North America, and respondents are highly enthusiastic about various special approaches that can accelerate and optimize testing in these development environments. Almost two-thirds (63%) of them said they always or almost always test less during development, and focus more on quality monitoring in production. Almost as many (60%) said they maximize the automation of test. We feel both these responses corroborate our earlier observation that for this region, the most important metric is time to market – and on that point, it's encouraging also to note that agile and DevOps seem to be delivering significant improvements in this respect. Almost three-quarters (73%) of the region's respondents said they were achieving excellent or very good gains in speed to market.

What, we wondered, were the factors that are critical for success in agile and DevOps adoption? There were two noteworthy points in the responses to this question. The first was that productivity and monitoring tools, as well as the underlying technology stack, ranked highly. The second was that the character of the organization was deemed important, as evidenced in the quality mindset, in executive support, in the overall skill set, and in the culture and agility of the enterprise. Once again, we see signs of confirmation of our own experience in the field: one, tools are increasingly key; two, the high rankings given to all these factors are a sign of the region's maturity; three, the drive to improve skills is a constant; and four, perhaps most important of all, quality is the responsibility of everyone.

We've already noted an increase in the use of test automation in North America, and the proportion of respondents stating they have achieved benefits explains why. Two-thirds (66%) of them said they have better control and transparency of their test activities, which is something we also see in the field – and almost as many (64%) said they get a return on their automation investment. Other benefits included better test coverage, reduced test costs, and earlier defect detection.

… and in AI and ML

Progress is also being made in the use of artificial intelligence (AI) and machine learning (ML) in testing and quality assurance. Half of North American respondents (50%) told us their business owners trust the intelligence provided by the AI/ML platform, and 49% said their organizations were willing to act on the intelligence it provides. Relevant use cases included fit-for-purpose test data provision, automated root cause analysis, and fit-for-purpose test environment provision.

Staying with test environments, we expect to see a drop in North American on-premises implementations over the next year or two, as cloud-based and virtualized interface options grow in popularity. Overall, the region seems highly satisfied with its progress in this direction, and it's good, too, to see a much higher-than-average 58% of respondents saying the right test environments are available when needed – this used to be a big issue.

It would be interesting to know how many organizations in the region are aiming to bring sustainability into their test environment practices. This is a growing area of focus for many organizations, and is something we might perhaps address in future reports.

Ambitions in Intelligent Industry

We closed the questions in this year's survey with a new section on what we call the Intelligent Industry. It refers to an area of digital transformation in which organizations digitize the key industrial parts of their businesses. They're using embedded software, data, 5G, edge computing, smart technologies, automation, and the internet of things (IoT) to rethink what they do, and how they do it.

North American respondents were keen on this emerging area. For them, most of the key drivers were ranked highly, including increased productivity and efficiency, better agility and flexibility, and an enhanced customer experience. The driver ranked high by fewest respondents was cost reduction, suggesting that this is an area in which organizations are prepared to invest. Indeed, we also observed that a substantially higher-than-average number of respondents in the region said that, rather than upgrade their existing facilities, they would be creating a new test lab with 5G, IoT, and AI capabilities.

Confidence and enthusiasm

Once again, what we can say we have in abundance here in North America is confidence. What's heartening about this is that we haven't ever seen it tip over into complacency. If that were to happen, people and organizations would congratulate themselves, and stop trying. But this is a region that is always keen to maintain its forward momentum. We see it in the push for skills, in the adoption of new tools, techniques, and approaches, in the enthusiasm for innovation, and in the constant push to include QA in a lifecycle that brings better products to market, faster.

If there were no major surprises in North America this year, that's a good thing. Long may this trend continue.

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