

WORLD QUALITY REPORT

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EIGHTH EDITION

North America

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IMPORTANT TRENDS

- At 37%, the proportion of the IT budget spent on QA and Testing in North America is the highest among all regions surveyed. The global average is 31%.
- In North America, 31% of all test cases are automated as opposed to 29% globally.
- North American organizations reported an average 35% of their applications running on private cloud against the worldwide average of 30%.

An extremely competitive marketplace, a high degree of innovation, technology driven business disruptions, and regulations that aggressively protect consumer rights: all of these combine to make North America one of the most customer-centric markets in the world. Objectives such as end-user satisfaction, brand image protection and a positive customer experience are paramount for businesses in this region (US and Canada). This, along with technology driven trends such as digital and analytics, explain the evolution of the North American QA and Testing market.

The region stands out from other markets for the proportion of the IT budget spent on QA and Testing. At 37%, it is the highest in the world, six percentage points above the global average of 31%. Further, its IT leaders expect this to go up to 44% over the next three years. This predicted increase can be explained by a number of factors, primarily the need to deliver products, features and capabilities to the end-user faster, in a way that does not jeopardize the consumer experience or the brand image. This focus on time-to-market and agility is driving increasing investments in automation across the delivery lifecycle, especially in test automation. North American respondents interviewed for the World Quality Report 2016 survey indicated that on average, 31% of all test cases in their organization were automated as opposed to 29% globally.

Another important trend is the increasing adoption of agile and DevOps in the region. The basic principles of agile and DevOps are

increasingly being employed across sectors, although with varying levels of customization in keeping with specific organizational requirements. This is leading to an increasing adoption of best in class tools for automation. The region's firms no longer see test automation purely as a labor or cost reduction exercise but as a speed and agility enabler. An increasing number of them are adopting shift left testing so that quality is a part of the entire development process, rather than being a separate activity carried out at the very end. Thus, the spending on automation is much broader than just test automation and is, instead, focused on automating the entire lifecycle. A key contributing factor for the increase in level of automation is the maturity of the tools and technology available from niche vendors and the Open Source community.

Despite the increased investment, organizations in this region seem to be slightly behind the rest of the world in their adoption of DevOps which supports the need for higher near-term spending in QA. Against a global average of 39%, just 18% of North American IT leaders interviewed for the World Quality Report 2016 survey indicated that more than 50% of their projects utilized DevOps principles.

An important trend in North America is a move towards the hybridization of the Testing Center of Excellence (TCOE). This is driven by two competing needs: the first being the need to manage risks and provide governance at the enterprise level;



and the second being the requirement of delivering products and services faster by adopting agile and DevOps philosophies. These competing factors are driving organizations to maintain centralized control over enterprise level decisions such as test environment strategy (e.g. leveraging cloud technology), tooling (e.g. lifecycle automation) and quality policy and standards. Adoption of DevOps and agile philosophies are resulting in organizations moving away from centralized testing teams to de-centralizing the day-to-day testing activities by embedding testing team members within development teams.

There is also a high degree of concern over security issues in the North American market. Security is seen as a must-have and an essential part of good operational practice. In our survey, the region's respondents ranked enhancing security as the most important aspect of their IT strategy. This is also reflected in the fact that 53% of our North American respondents reported performing dynamic application security testing as opposed to 49% worldwide. In addition, 45% respondents reported performing static application security testing in their organizations. This highlights the fact that companies are taking steps to ensure security of application and data early in the development lifecycle. As only half of all organizations report performing routine security scans, we see continued investment and adoption of fundamental security scanning in the near term.

Cloud adoption is also on the rise in North America. As per the World Quality Report 2016 survey, North American organizations reported an average 35% of their applications running on private cloud against the worldwide average of 30%. Adoption of public cloud is slightly higher than the global average (24% vs. 23% worldwide), while the adoption of hybrid (16% vs. 18% worldwide) and on-premise cloud (14% vs. 15% worldwide) is marginally lower. This adoption of private and public cloud is set to grow

with North American respondents estimating that 45% of their applications will be based on private cloud and 27% will be based on public cloud three years into the future. This increasing adoption of cloud will allow testing organizations to leverage the same configurations as production and set up test environments quickly, thus increasing the efficacy as well as speed of testing processes. This, in turn, is likely to facilitate an increased adoption of agile and DevOps.

Over the last few years, North America has seen an increase in customer experience testing for multi-channel applications. In trying to provide a consistent experience across various channels, such as voice, mobile device, or browsers, organizations today are grappling with a number of challenges. When asked about challenges to customer experience testing when it came to omni-channel applications, North American respondents gave the highest weighting to 'Identifying the end-user expectations and requirements' and 'Implementation/usage of test tools for customer experience testing'. Such challenges are only expected to intensify in the coming years, especially as adoption of the Internet of Things gains pace.

To summarize, emerging technologies as well as the extremely competitive and customer-centric nature of the markets are reshaping the QA and Testing function in North America. These two forces help explain trends such as the adoption of agile and DevOps, hybridization of TCOEs, testing automation and the concern with security.

Looking to the future, we can expect these trends to intensify further. We also expect certain new trends such as those related to testing of IOT products as well as the use of predictive analytics in testing to become much more important.



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