

North America

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Important trends

- Up to 79% of the North American IT executives interviewed for the World Quality Report 2015 say customer experience is an important IT strategy priority.
- The region spends 41% of its IT budgets on QA and Testing, the highest in the world, and IT executives expect it to surpass 44% by 2018.
- Cloud, mobile solutions, analytics and front office (customer channels) take up 73% of the QA and Testing budget allocated to new development in North America. This is about 3% more than the global average invested in digital projects. The region has the highest number of Chief Digital Officers (58%) driving these projects.

Supported by the gradual improvement in macroeconomic indicators, North American organizations are investing precious dollars in outcome-based and transformational IT. To drive the transformation, they are spending on software (customized and off-the-shelf), integration services and consulting talent. A priority area for much of this investment is Digital Transformation for improved customer experience — all sectors, from Railways to Retail, appear to be investing in social, mobile, analytics, and Cloud (SMAC). Up to 79% of the North American IT executives interviewed for the World Quality Report 2015 say customer experience is an important IT strategy priority.

Media and public reaction to the recent security breaches is also compelling organizations to review their security detail. With 84% saying it is an important aspect of their IT strategies, this is higher than all other strategic IT priorities. More specific to Quality Assurance (QA) and Testing, a sizable 79% see protection of the corporate image as an important objective of their QA and Testing programs. The objective receives a mean score of 6.17 (on a scale of 1-7) in the region, second only to the scores from the Nordics (6.2).

Organizations are now paying more attention to risk-mitigation, and data residency laws are extremely stringent in this region. Nearly 47% of those interviewed perform penetration testing, a form of ethical hacking aimed at unraveling vulnerabilities. This is above the global average of 39% performing such tests. North America also leads in dynamic application security testing; 68% of respondents test code as it runs on the servers.

Senior leaders from North America acknowledge their security concerns and see value in recruiting top experts. They are turning to niche players for most of the specialized security tests on critical application portfolios — 42% of the research participants reach out to external security testing teams on a project basis. This is 10% more than the proportion of Western European executives opting for

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external teams, and 12% more than the global average.

Overall QA and Testing activity is rising exponentially and claiming a sizable proportion of the IT budgets of North American organizations. The region spends 41% of its IT budgets on QA and Testing, the highest in the world, and IT executives expect it to surpass 44% by 2018. This far exceeds last year's share of 30%, which was expected to reach 33% by 2017. Although there is a lot of attention for new transformational work, budgets are split evenly between maintenance and new development. Legacy modernization continues to take up a substantial part of the whole.

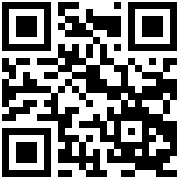
As the economy improves, business leaders are in-sourcing key IT profiles to retain the knowledge (processes, data) within the enterprise, albeit at high costs. These roles were earlier assigned to low-cost near-shore or offshore locations. The net result is an exponential growth in compensation packages across the spectrum of roles and responsibilities. There's no perceivable shortage of experienced talent in North America, although attrition is high and retention is expensive. These events must also be viewed in the context of increasing investments in Digital Transformation, which requires skills that aren't yet widely available. Staffing and HR costs consume 30% of the QA and Testing budget in North America. Year-on-year comparisons may be misleading, however, as the region allocated only 30% of its IT budgets to QA and Testing in 2014, while HR costs were at 36% of that proportion.

Research participants also report a growing interest in adopting a blend of traditional and relatively new application development and testing methodologies. This includes efforts to enhance the structure of testing organizations in order to better align with business needs, such as speed-to-market, flexibility and cost efficiency. Up to 74% use agile methodologies — the highest adoption ratio in the world. Of these, 56% say they use functional automation and agile lifecycle management tools. The region is



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also witnessing the emergence of a new role within the QA and Testing organization, given the adoption of agile and DevOps: Software Development Testing Engineers. These engineers are driving the testing agenda earlier in the application lifecycle. However, survey respondents don't subscribe to a standard definition of agile; some are simply accelerating development and testing cycles within the confines of the traditional waterfall approach.

Challenges in adopting agile methods stem from process definition, integration of test automation and lack of relevant expertise. Up to 42% (the highest worldwide) of the IT executives see the lack of professional expertise in agile teams as a major challenge in applying testing to agile development. Nearly 33% cite difficulties in testing in a distributed environment, while 29% lack a good testing approach that fits with agile. And, 29% say their inability to apply test automation at appropriate levels acts as a barrier in applying testing to agile development. This latter challenge is down from 56% last year. The region leads in automation — nearly half of the test cases in North American organizations are automated. Better detection of defects is the primary driver of automation, with 82% having realized this benefit.

At 82%, adoption of DevOps principles is fairly widespread across North American organizations. And yet, on the DevOps maturity curve, North America lags key comparable regions. Globally, 26% and in Western Europe, 30% of the IT executives interviewed say 70-90% of their projects use DevOps principles. In North America, just 21% claim such maturity with DevOps principles.

In their quest for maximizing value, organizations continue to industrialize their approach to testing. Some 26% of the executives interviewed already benefit from a Testing Center of Excellence (TCOE), managed either internally or by a third party.

An equal proportion plans to develop one within the next two years. A further 10% say they plan to start an agile TCOE. In particular, the adoption of agile methodology has driven up the preference for a decentralized TCOE. Up to 73% of the North American participants (the highest worldwide) say decentralization is an important element in their TCOE plan. In turn, this has created a demand for standardization of testing, improved governance and management of testing capacity across streams.

Cloud, mobile solutions, analytics and front office (customer channels) take up 73% of the QA and Testing budget allocated to new development in North America. This is about 3% more than the global average invested in digital projects. The region has the highest number of Chief Digital Officers (58%) driving these projects. In addition, several firms separate digital projects from core IT as business seeks more control of customer engagement initiatives. As a result, it is getting increasingly difficult to track testing spends on Digital Transformation in North America. The trend perhaps explains the year-on-year drop in mobile testing in the region. Up to 16% of the executives interviewed say they don't do mobile testing, unlike last year when this figure was as low as 10%.

Escalating costs and the complexity of test data and test environment management have led North American firms to invest in cloud-based test environments. Up to 45% of the cases in the region are tested in the Cloud, with functional testing for cloud services and customer facing applications leading the trend. This is an improvement of 8% over 2014 figures for testing in the Cloud. Up to 47% say they maintain permanent test environments, and 45% cite maintenance of multiple hardware, middle ware and systems under test as challenges in provisioning test environments. However, organizations in the region have clearly identified improvements in the area of test environment as a potential to increase efficiency and velocity of testing.