The future up close

WORLD QUALITY REPORT

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NORTH AMERICA

Tracking the disruptions shaping the American quality landscape

Ambitious, relentless, powerful - as far as IT is concerned, there is never a dull moment in the NA market. This year too, we see interesting trends emerge in its Quality Engineering (QE) landscape.

Zooming out – the macro view

The pandemic's significant impact has affected every business, and we are not surprised by the slow growth rates and reduction in customer spends this year. However, this trend has been the most visible in the consumer products, retail, telecom, media, and services sectors. Whereas manufacturing, life sciences, energy utilities, and chemicals seem to have witnessed significant growth in the same period.

The uncertainties that followed the pandemic increased cost pressure, driving organizations to look for ways to cut costs, maximize value of their investments and ensure business assurance. This could be why we started to see more businesses bring renewed focus on testing.

The way businesses function has also changed. Traditional large Delivery Center of Excellence (DCoE) constructs have given way to more agile pods and teams, emphasizing collaboration between development and quality assurance. The concept of nearshoring has gained traction, with organizations exploring options to reduce costs while maintaining a similar time zone for their operations. Newer operational models such as the Hybrid TCoE (Testing Center of Excellence) or the Product-Centric model that integrates automation with DevOps practices were introduced and are now being actively used.

There has been a renewed interest in data and cloud, and a visible shift towards a DevOps culture that demands agile provisioning processes. This has further fueled the adoption of technologies like telemetry, migration to cloud, and automation of processes.

Eventually, this reliance on data and cloud has made way for the widespread adoption of the next big tech – AI (Artificial Intelligence).

Zooming in – what's really holding our attention?

While we saw AI taking giant leaps last year, this year Gen AI has disrupted traditional business models, driving organizations to ideate, experiment, and further zoom in on digital transformations. Currently it is seen as a low hanging fruit, just ripe enough to be picked.

Organizations are eager to leverage Gen AI capabilities in various business units, apart from the Financial Sector, which has been exercising caution towards active adaptation of AI. But testing efforts currently underway will make a compelling case for AI in the coming years.

However, this exponential digital growth (be it cloud, data, AI) exposed businesses to several security risks.

A key example of this is the Microsoft attack of 2021 which was one of the largest cyberattacks in US history, affecting over 30,000 US businesses. Or the one at Facebook that

coincidentally also occurred the same year exposing 530 million users!

These incidents amplified the increasing prioritizing of security testing to safeguard organizational systems and customer data and further boosted the growth of Site Reliability Engineering (SRE). We expect SRE processes and tools to gain further prominence in the coming year, especially in the Financial Sector due to keen interest from insurance companies.

In fact, Security Engineering is becoming a critical skill for Quality Engineering, as security testing is being integrated into the development lifecycle. We see how Performance Engineering is now evolving into SRE, encompassing Chaos Engineering and Observability.

One hat, many roles

With all these changes at hand, the skill set profile of Quality Engineers has transformed not just in NA, but globally. While "full-stack engineering" was a term that has been around for a while, it has become 'real' only now. Automation skills are considered essential, with a shift towards software quality engineering, which is a move away from manual testing. Data skills and SAP (Systems, Applications, and Products) expertise are in demand, reflecting the increasing importance of data quality in the AI-driven world. We also see a lot of focus on environments, especially around test environment management, and functional testing in the QE space. The convergence of hardware and software in industries like automotive and telecommunications is blurring the lines between traditional quality engineering and product engineering. This shift necessitates a comprehensive approach to testing and compliance.

Quality engineers are being seen as custodians of compliance, especially in highly regulated industries such as life sciences. The validation of systems and processes to meet industry-specific standards will become increasingly important.

Amidst these transformations, the hype that arose around the Metaverse in 2022 diminished. Instead, we see organizations exploring Mixed Reality for training, auditing, claims processing, and other applications.

There has also been more awareness about sustainability. Even though green engineering and sustainability initiatives are not yet a dominant trend, organizations are engaging in conversations to reduce their carbon footprint while improving efficiency.

In a volatile global market like today's, the burden on QE is ever increasing. We are definitely intrigued to see how some of these trends will shape up in the coming year and what the future of QE will look like.

Survey Watch

84%	Organizations are actively using AI to optimize their testing processes
96%	Organizations include cloud and infrastructure testing as part of the development life cycle?
77%	Organizations say that 21-40% of their digital core testing is automated
78%	Organizations say that it is very important to test the impact of failure events on applications running on cloud especially using Chaos Engineering

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