How to Meet the Diverse Needs of Digital Transformation Using QA Testing

To be competitive, business enterprises need to meet their customers' requirements and expectations, create business value, and register growth. It has become important for such enterprises to reimagine their technology and business landscape. This is done by leveraging technologies, streamlining operations, fostering new cultures, and delivering superior customer experiences. As new technologies such as AI, data science, the Internet of Things, big data, blockchain, and others come into being, digital transformation has received a greater fillip by organizations spread across the globe.

According to research by aimultiple.com, spending on digital transformation globally is likely to touch $1.78 trillion in 2022. Digital transformation is not only about harnessing technology but working on diversity. Here, diversity is underpinned by three pillars: people, data, tools, and techniques. Let us understand them separately.

Digital transformation and diversity

The three pillars of digital transformation, namely, people, data, and techniques, can be strengthened using software quality assurance. Let us understand them in some detail.

People: With AI around, there is a need to involve a diverse population (read: decision-makers) to create AI-based algorithms. Here, diversity entails gender, age, race, experience, geography, skill set, education, perspectives, and more. So, when diverse teams draw insights from data to make decisions, the chances of their experiences, limitations, and prejudices getting in the way are reduced. People from various backgrounds with common skill sets of problem-solving, decision-making, and analysis can give new perspectives on unique business situations. Any testing services company can dip into such a talent pool to find solutions to unique business challenges.

Data: The capabilities of **software testing services** in testing data using AI and ML depend on the quality of data. Remember, data is not only about structured tables comprising numbers and texts, but anything that could be digitized. For instance, data can be the movement of customers in a retail store, obtained through analyzing the heatmaps. AI uses real-time (or past) patterns of data to predict the future. At the same time, trends can be predicted for new products with no sales history whatsoever. This is done by applying computer vision algorithms to the images of new products and old ones from the database.

Tools and techniques: To create algorithms that do not perpetuate racial or gender biases, diversity in the use of tools and techniques should be there. For instance, conventional classification techniques tend to erase all kinds of gender identities except those based on stereotypes and physical appearances. It is advisable to use open-source tools as, by nature, they tend to be diverse because people from all backgrounds work towards enhancing them.

Thus, with the diversity of people, data, tools, and techniques, businesses can transform their processes - from manual to automated, intuitive to predictive, and analog to digital.

How can QA services meet the diverse needs of digital transformation?

The diverse needs of digital transformation for every enterprise can be met by applying a range of testing a la **QA services** as mentioned below:

The first thing to ask before delving further into a world driven by quality assurance services is whether the software applications or products are aligned for digital transformation. There can be multiple challenges for any business embracing digital transformation. These can be related to the interoperability of the connected systems and the maintainability of the software product or solution. It is observed that businesses often end up spending money on rework arising out of changes in product design or functionality. To stop this drain on resources, any testing services company should automate its test procedures to reduce the quantum and

frequency of errors. Besides, it can expand the test coverage and accelerate the time to market.

Effective testing implemented by any software testing company during the development of a product can reduce the cost of rework and improve quality. Let us understand how the software testing process can accelerate the goals of digital transformation:

DevOps testing: DevOps has emerged as a reliable methodology to achieve greater speed of development and delivery, reliability, and security of products or solutions. With continuous integration and deployment, the focus is on achieving rapid release cycles and business agility. It involves continuous integration, testing, deployment, and monitoring.

Cloud testing: With more and more organizations migrating to the cloud, the need for testing cloud solutions is increasing. It entails testing the reliability and performance of web applications deployed in such environments using simulated real-world web traffic. It involves performance testing, security testing, load and stress testing, compatibility and interoperability testing, disaster recovery testing, multi-tenancy testing, and system acceptance testing.

Conclusion

In addition to the quality assurance services mentioned above, there are IoT testing, Cognitive QA testing, chatbot testing, and others. Testing has become a critical function to ensure the quality, reliability, and better user experience of the product in the market. In a competitive market, achieving risk mitigation and releasing faultless solutions for digital transformation is the need of the hour.