TATA CONSULTANCY SERVICES

Building on belief

Cloud adoption and BFSI institutions' readiness to test

Banking, Financial Services and Insurance

Abstract

Banking, financial services, and insurance (BFSI) institutions are rushing into cloud adoption, preparing to cater to a complex technology footprint. This footprint is built with varied interdependent landscapes – from legacy to cutting-edge digital applications – to meet the constantly changing need for personalized customer experience, banking digitization, regulatory requirements, and globalization. All these preparations come unstuck when it comes to testing due to the lack of appropriate and comprehensive insights.

These insights include the dependency of cloud adoption on the test estate, such as processes, tools, data, and environment. BFSI institutions also need insights into related test assets requirement coverage matrix, test methodologies, test cases, test scripts, test results, test baselines, and others. This begets the question: with such a lack of clarity, are BFSI organizations really prepared to test their cloud adoption? This white paper delves into understanding key inputs BFSI institutions need to be ready with to get going on the testing front as they gear up for cloud adoption.

Cloud adoption and testing – a variant outlook

The complex nexus of interdependent BFSI applications running in harmony is highly susceptible to malfunctions during or after cloud adoption, even with a small mistake. These malfunctions can lead to interrupted customer experience, which, in turn, puts business and reputation on the line. Robust, high-quality testing prevents or minimizes such malfunctions.

Successful testing of any BFSI cloud adoption initiative, such as core modernization, contact center transformation, claims transformation, among others, depends on the availability and accuracy of required inputs. This information covers the change and its impact on and around the business functionality and technology landscape (architecture, data, and infrastructure). Along with the cloud adoption journey, BFSI customers face an estate replete with variance in their readiness with such information, especially related to documentation, test assets, and more. Testing and quality engineering (Test.QE) is closely related to such variance and its impact. As a result, the unavailability of known and required inputs, along with the lack of foresight into the unknown ones, create significant risk for timely delivery, quality, and cost for any program or initiative.

Test.QE is also directly associated with the BFSI organization's infrastructure. While BFSI cloud adoption involves shutting down one infrastructure and establishing a new one in the cloud, it would be sub-optimal to run both in parallel. This introduces two key challenges for Test.QE – one, short cutover window, which translates to limited testing time, and two, no rollback options, leaving no room for mistakes in testing. The success of Test.QE stems from discovering and gathering all required inputs in advance to ensure preparedness, which overcomes these challenges.

Criticality of comprehensive and correct inputs for Test.QE

The nature of the cloud adoption strategy of BFSI institutions would drive the magnitude of coverage and preparedness required from Test.QE. Complexities of BFSI institutions push for cloud strategies such as re-factor, re-architect, or re-platform instead of a simple lift and shift migration. In essence, a robust and context-ready definition of Test.QE is crucial for the success of cloud adoption.

Further, inputs required for successful testing range across the business, applications, test assets, test data, test environment, interfaces, and third-party integrations. These inputs also cover identity and access requirements, security, performance, data protection, data privacy, data localization, regulatory and compliance requirements, and more. However, more often than not, inputs are either not available or available with low accuracy in a majority of BFSI organizations. Both scenarios pose a significant risk to the effectiveness of the Test.QE function and impacts the confidence in testing during cloud adoption. This risk is further aggravated by the ineffectiveness of the Test.QE function, which results from avoiding expensive rollback during cloud adoption. As such, business and IT leaders are forced to compromise on test coverage, further increasing the possibility of failures creeping past test stages.

The lack of a frame of reference for capturing the relevant inputs in a structured format or standard guidelines for validating the inputs received or both make the input or information collection people dependent. This void also introduces the risk of missed or misleading inputs or both. For instance, a functional testing subject matter expert (SME) may overlook the need for information related to performance and security requirements. These risks, when realized, have the potential to slow down test progress and, many a time, become a roadblock.

Test.QE readiness insights for cloud adoption

Currently, there is a definite need for guidelines that cover a comprehensive input range needed to define, design, and test cloud adoption in the BFSI arena. A standard Test.QE readiness guideline for BFSI would be instrumental in defining a context-ready Test.QE function to help avoid the risks emanating from the lack of information.

Defining the Test.QE readiness framework for cloud adoption testing

Besides covering the range of information, the relevance and applicability of such information in terms of application complexity, migration strategy, cost or time, business drivers, and other factors must be thought through. Further, given that each BFSI institution is unique in its ways of using technology, it is important to customize and contextualize the framework for the institution to gather the Test.QE insights.

To ensure that the information is comprehensive, it could be broadly categorized into five groups: strategy and planning, test automation, test data and environment, testing baselines, cloud services and infrastructure components, and subsequent sub-categories (see Figure1).

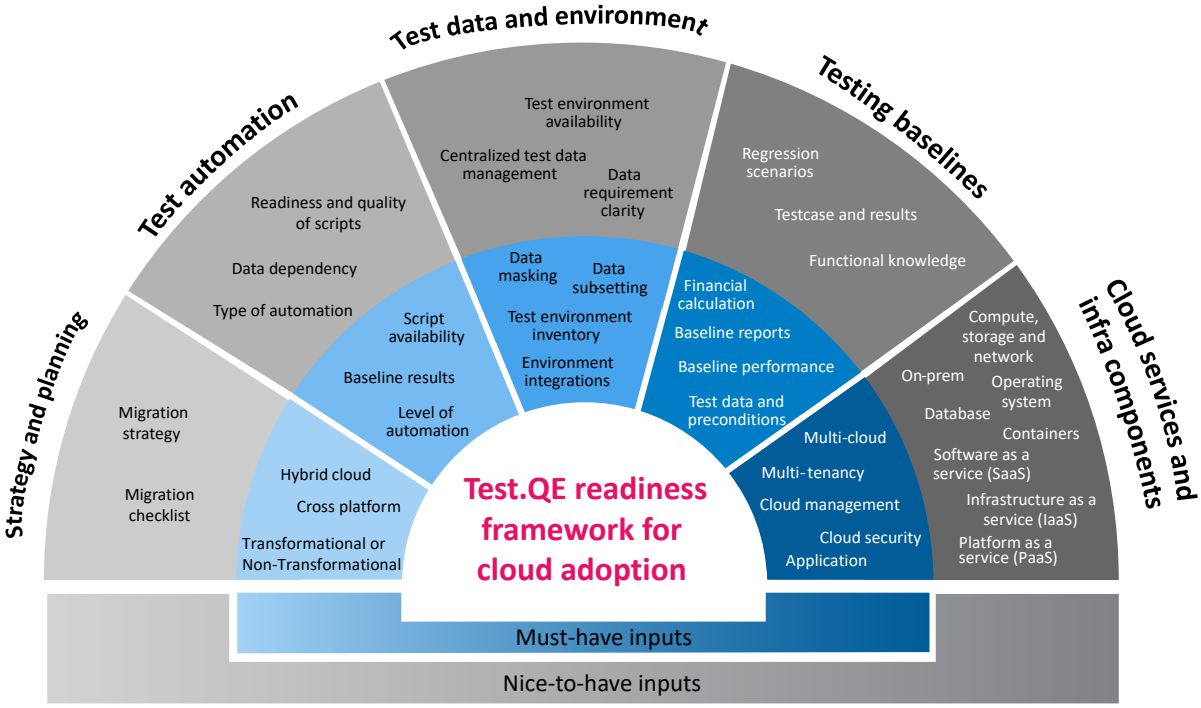

Figure 1: Categories and subcategories for readiness check of Test.QE

1. Strategy and planning

This includes the availability of adequate information and understanding of the cloud adoption strategy, nature of the cloud migration, availability of application and technology information, and more.

2. Test automation

Test automation is a key enabler to achieve the speed of test execution and accuracy of testing. The focus would be on maximizing the utilization of the existing test automation assets.

3. Test data and test environment

The efficiency of Test.QE ecosystem is dependent on robust test data and environment functions. Successful execution of the complex BFSI user-journey testing during cloud adoption requires fit-for-purpose test data and the availability of integrated test environments. Deep knowledge of data, source of data, and the process to obtain test data is unavoidable. Similar is the case for the test environment function, where knowledge of application connections and interfaces, third-party integrations, batch or data or access dependencies, and many more factors play a crucial role.

4. Testing baseline

For the majority of non-transformational cloud adoption, the primary focus for Test.QE is to compare the test results against prior baselines. As a result, the availability and currency of baseline information are critical for the success of testing. Testing baseline is a broad area covering all aspects of the test life cycle for both functional and non-functional testing. An early indication of the availability and currency of baseline information gives an opportunity to add and update missing or outdated information.

5. Cloud services and infrastructure components

Cloud adoption Test.QE is not only limited to testing of the applications getting moved to or hosted on the cloud but also extends to infrastructure, security, identity and access management (IAM), monitoring, performance, and more. Test.QE scope, degree, and type varies with cloud

service types and cloud infrastructure components. Inputs such as infrastructure configuration, infrastructure codes, multi-cloud and multi-tenancy considerations, and customization requirements are needed for the test team to define their strategy accordingly.

Applying Test.QE readiness insights in BFSI

There are several use cases for the Test.QE readiness framework in the BFSI industry, including personalized insurance and core modernization (see Figure 2).

BFSI use cases	Application of Test.QE readiness insights framework for cloud adoption
Core modernization	Deep understanding of the existing business functions and availability of test assets are essential for successful testing of core modernization.
Data syncing across customer, risk, finance and products	Syncing the data across customer, risk, finance, and product systems in the cloud is essential to enable personalized customer experience. Definition of the best-fit Test.QE function relies on deep understanding and availability of fit-for-purpose test data across multiple systems.
Personalized insurance	Rapid digital transformation in insurance is accelerating cloud adoption to customize products, tailoring to personal needs. The quality of testing here depends on the availability of test assets pertaining to policies, rating engines, claim process and historical data.
Contact center artificial intelligence (CCAI)	Successful testing of CCAI implementation depends on understanding of the existing call use cases, applications and variation of test data for wide user scenarios.
Underwriting and artificial intelligence (AI)	Application of cloud-enabled AI in underwriting process facilitates accurate risk profiling by analyzing huge volume of data from social media, public sources, and analyst reports. Here, successful testing depends on integrated test environments and test automation assets with amplified test coverage.

Figure 2: Illustrative BFSI use cases

To leverage frameworks such as the Test.QE readiness framework, BFSI institutions should initiate some preliminary steps to understand the business and technology objectives of cloud adoption and expectations from Test.QE. They must gain an initial understanding of what Test.QE means and stands for, in a specific BFSI institution's landscape, given their context. This is followed by analyzing the change and its impact for identifying required test types and the level of testing for each type. It is also important to identify test focus areas for IT and business for unified test planning and execution.

Let us get started

A meticulously structured, comprehensive, and contextual Test.QE readiness framework for cloud adoption would be instrumental in avoiding the risk of diminished customer experience, accuracy in spending, and elimination of business downtimes along BFSI institutions' complex cloud adoption journey. A simple upfront exercise will enable not only the Test.QE arena but also the entire organization to confidently answer the question – is the organization really prepared to test their cloud adoption?

Many BFSI institutions have already embarked on their cloud adoption testing journey, yet wondering if they are going in the correct direction. These institutions must pause and course-correct by building the required insights in a structured manner before it is too late. If they have just started or planning to start, the time is now – they can leverage the framework to build the right fit test strategy considering all inputs relevant for them.

About the author

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Soumyasachi (Somya) Mahapatra is a senior automation advisor in the Technology and Transformation Advisory function with the Banking, Financial Services, and Insurance (BFSI) business unit at TCS. He is an accomplished leader with over 18 years of experience in project delivery and program management, sales and business development, advisory, and consulting. His areas of expertise include cloud quality engineering, transformation, automation strategy definition, large-scale enterprise automation implementation, automation program management, and COE setup. He holds a bachelor's degree in Electrical Engineering and a master's degree in Business Administration from Utkal University, Odisha, India.

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