Big Data and Analytics Test Automation Solution (BITS)
Quality Engineering and Transformation
In today’s highly competitive business landscape, data is the new oil, and the right information delivered at the opportune moment will help take game-changing decisions. That's why companies across the globe are looking to leverage big data and integrated analytics to unearth hidden insights about their products, operations, customers, and new business opportunities. However, this vision is impeded due to a lack of cleansed and structured data in enterprise systems. Inevitably, this leads to a loss in terms of possible new efficiencies and makes technology implementation an unnecessarily long process. In other words, poor data quality hurts business health and makes automating test processes a major challenge.

Tata Consultancy Services (TCS) offers Big Data and Analytics Test Automation Solution or the ‘BITS’ platform to help companies answer queries around different data formats and outline data-driven solutions. The solution ensures superior data quality even as it moves across the business value chain – from collection to processing, from tests to insight generation. Using TCS BITS, enterprises can achieve highly accurate analytical models designed for their unique use cases and objectives (through an entirely turnkey solution) and look forward to tangible results.

Overview

Companies are constantly trying to reinvent their operations and business models via fully ‘data-driven’ approaches. However, this is easier said than done; most of the data pouring in from diverse and disparate streams require careful cleansing, reformatting, and extensive conversions before they can be meaningfully utilized. In an attempt to complete tasks like these in-house – often without the prerequisite infrastructure or technical capabilities – enterprises take on massive costs and FTE burden. What is needed is an end-to-end solution that can manage foundational data management tasks, preventing ‘garbage in, garbage out’, preparing the available information for tests and insight generation.

TCS’ BITS platform is powered by our alliance with Oracle and comes bundled with MySQL plug-ins (in addition to other formats). The solution is envisioned as a holistic and automated answer for today’s most pressing data quality challenges. Customers can dramatically cut down on processing timelines and speed up their analytical modeling roadmap with our ready-to-use tool. Further, BITS delivers reusable automation scripts for smarter testing and validates existing analytical models to ensure accurate insights into the business. Tangible results include up to 60% higher test productivity and up to 20% lower costs.

Our Solution

The TCS BITS platform offers the following salient features:

- **Data Quality Analysis and Heterogeneous Data Comparison** - spans a wide variety of file formats, RDBMS, NoSQL, report formats, and big data stores to ensure the correctness, completeness, standardization, and compliance of the data

- **Re-usable Test Automation Suite** - expedites the testing process and prevents effort duplication; also includes a scriptless test case design capability to jumpstart test automation

- **Data Anomaly Identification** - provides exhaustive reports on data mismatches, data duplicates, missing data, extra data, data standardization, data transformation, data integrity, and compliance errors

- **Analytical Model Building** - simulates the analytical model building process with different training data sets and testing data sets, helping to pick the best model according to business needs

- **Analytical Model Validation** - validates analytical models for overfitting and underfitting, garnering organizational confidence in the model’s predictability; generates reports on the effectiveness and efficiency of predictive analytical models

- **System Integration** - integrates continuous quality assurance processes with an agile continuous development methodology
Benefits

Organizations can expect the following key benefits by using TCS BITS (see Figure 1):

- **Improved Test Coverage** - increase in test coverage via measurable improvements in data quality, achieving up to 100% test coverage
- **Faster Time-to-market** - shortened timelines around testing as well as business insight generation releasing products/services up to 20% faster
- **Reduced Costs** - lower overall costs by eliminating preventable spends on data quality management, saving up to 20% of organizational costs
- **Higher Test Productivity** - deploy end-to-end automation across their quality assurance lifecycle, data preparation requirements, and analytics model creation workflows boosting productivity by up to 60%
- **Versatile Usage** - utilize an industry- and tool-agnostic solution to optimize data processes in various scenarios
- **Greater ROI** - enhance data quality from the get-go, reducing incident rates and bugs realizing more returns from technology investments

The TCS Advantage

By partnering with TCS, businesses can leverage the following differentiators:

- **Rich Domain Experience** - TCS brings years of experience in the testing automation space, with several projects involving quality assurance for data and analytics across industry verticals
- **A Comprehensive Platform** - BITS is a script-less, technology-agnostic platform that is scalable for variable data volumes, heterogeneous data formats, and unique analytical algorithms.
- **Customizable Applications** - TCS adopts an automation framework design approach that is easily customizable/extendable to accommodate new data formats/data storage technologies.
- **Market Leadership** - first-of-its-kind platform offering quality assurance across data and analytics, without any technology compatibility issues
Awards & Recognition

To know more
Visit the Quality Engineering page on tcs.com
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About Tata Consultancy Services Ltd (TCS)
Tata Consultancy Services is an IT services, consulting and business solutions organization that delivers real results to global business, ensuring a level of certainty no other firm can match. TCS offers a consulting-led, integrated portfolio of IT and IT-enabled infrastructure, engineering and assurance services. This is delivered through its unique Global Network Delivery Model™, recognized as the benchmark of excellence in software development. A part of the Tata Group, India’s largest industrial conglomerate, TCS has a global footprint and is listed on the National Stock Exchange and Bombay Stock Exchange in India.

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