BIDW
Test Automation

"End to End Automated
Data Validation Simplified"

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Connected World.
Connected Experiences.

Introduction

In today's world organizations are facing challenge in timely delivering Business Intelligence and data warehouse projects because of long testing cycle and manual validation process. 100% data testing is a big challenge due to the heterogeneous nature of data with large volumes in warehouse and reports.

Based on our experience in implementing various data warehouse and business intelligence projects we have come up with an automated solution for data validation of BI/DW systems at every stage. These automated validation includes data quality, integrity, completeness, correctness and consistency.
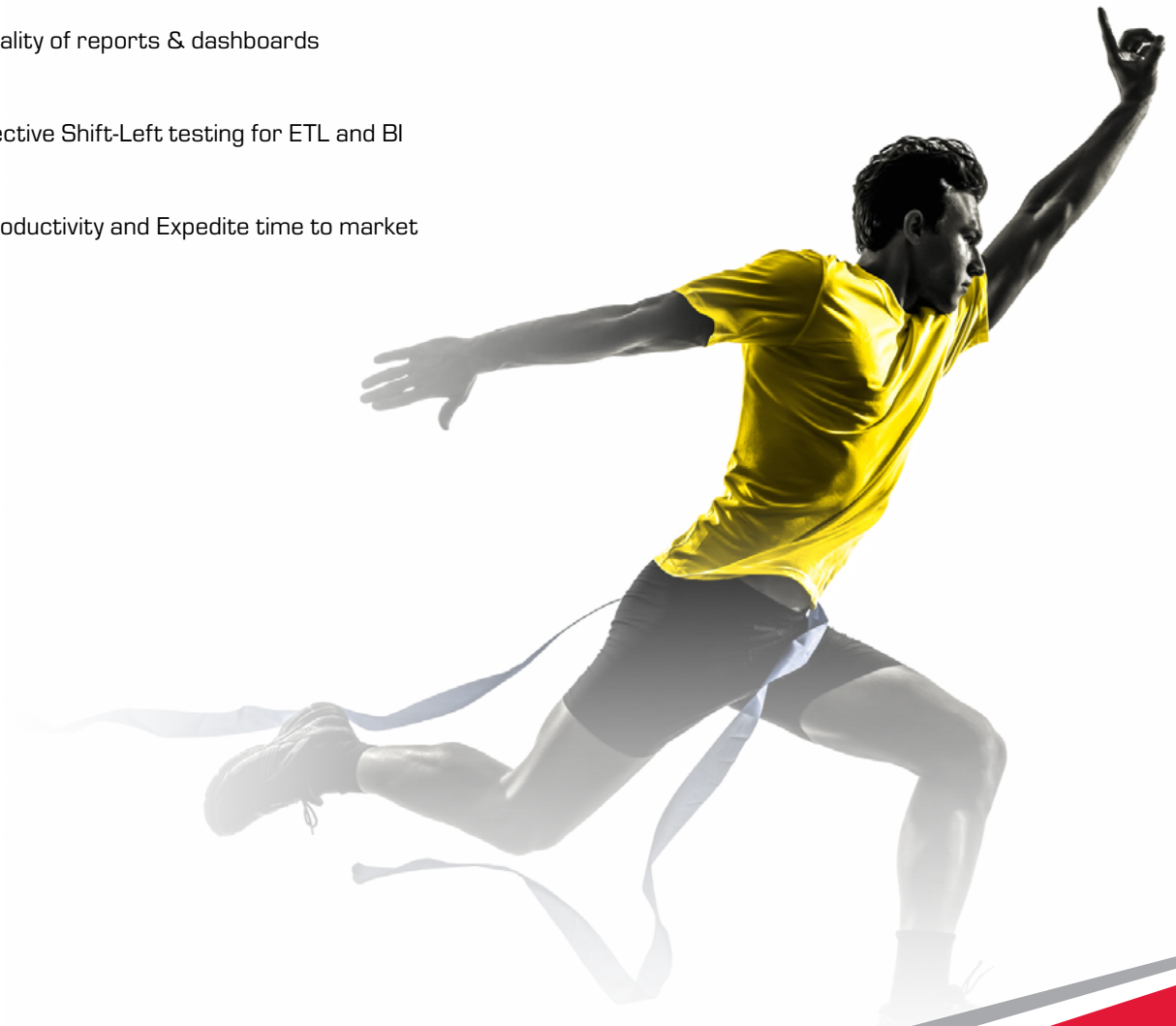
Why BI/DW Test Automation

Company CXOs are using Business Intelligence & Analytics to make critical business decisions with the assumption that the underlying data is accurate but organizations are losing huge revenue due to poor data quality. Data quality and integrity can be compromised when data is created, integrated, moved or transformed between various data sources. Poor data quality not only leads to sub-optimal decisions; it also opens the door to regulatory risks.

Due to various data formats and huge data volume manually testing all the data is not possible, increasing chances to miss data related issues. To catch these problem at an early stage an automated way of data testing is much needed.

Advantages

- 100% Test Coverage and Data Validation

- Zero Programming and Increased Re-usability

- Improve quality of data in each layer

- Cut down testing cost and minimize test cycle time

- Automate integration and regression testing

- Improve quality of reports & dashboards

- Employ effective Shift-Left testing for ETL and BI

- Improve Productivity and Expedite time to market

Business
Challenges

- Large volume and complex data formats

- Heterogeneous data sources

- Ineffective, time-consuming and costly due to manual verification

- End to End Coverage of the DW Lifecycle

- Multiple Technologies/Applications (ETL and BI platforms)

Approach

TechM delivers a fully automated lifecycle approach to BI and DW testing, ensuring greater data integrity and right data movement throughout the data life cycle.
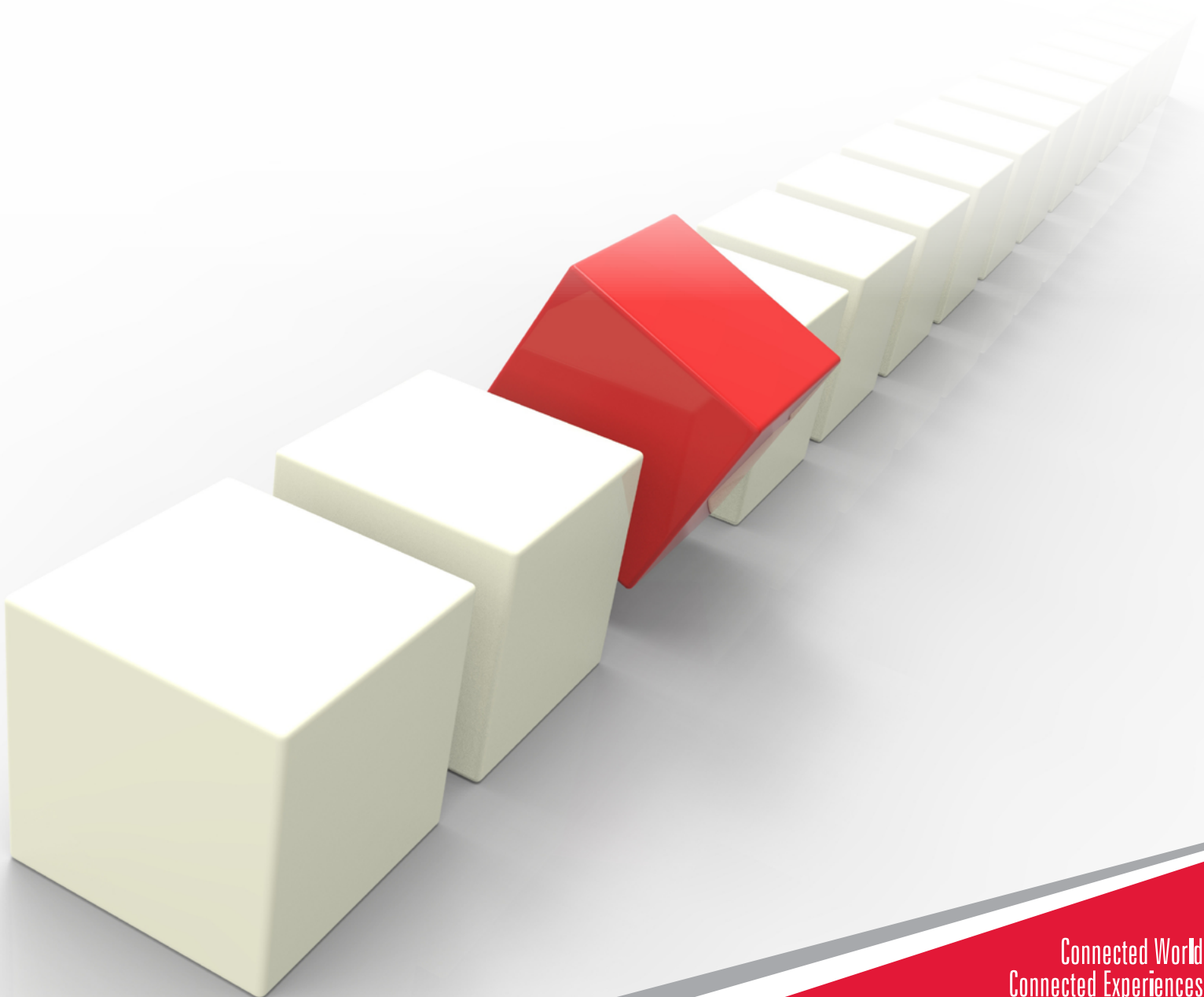
Testing starts from data extraction stage to eliminate data quality errors and further continue with multiple validations on complete data load which accelerates the testing process. This solution overcomes the obstacles like different data formats, huge volume and business logic complexity which reduce test efficiency at each stage of data processing.

This automated validation process not only verifies the data completeness but also ensures the data quality during data extraction, transformation and loading process.

Differentiators

- Easy to setup and implement test automation at every stage

- Unique Visual Test Case Builder with drag & drop capabilities

- Pre-build test cases for data quality and referential integrity

- Command line integration for CI/CD

- Automatic query building capability
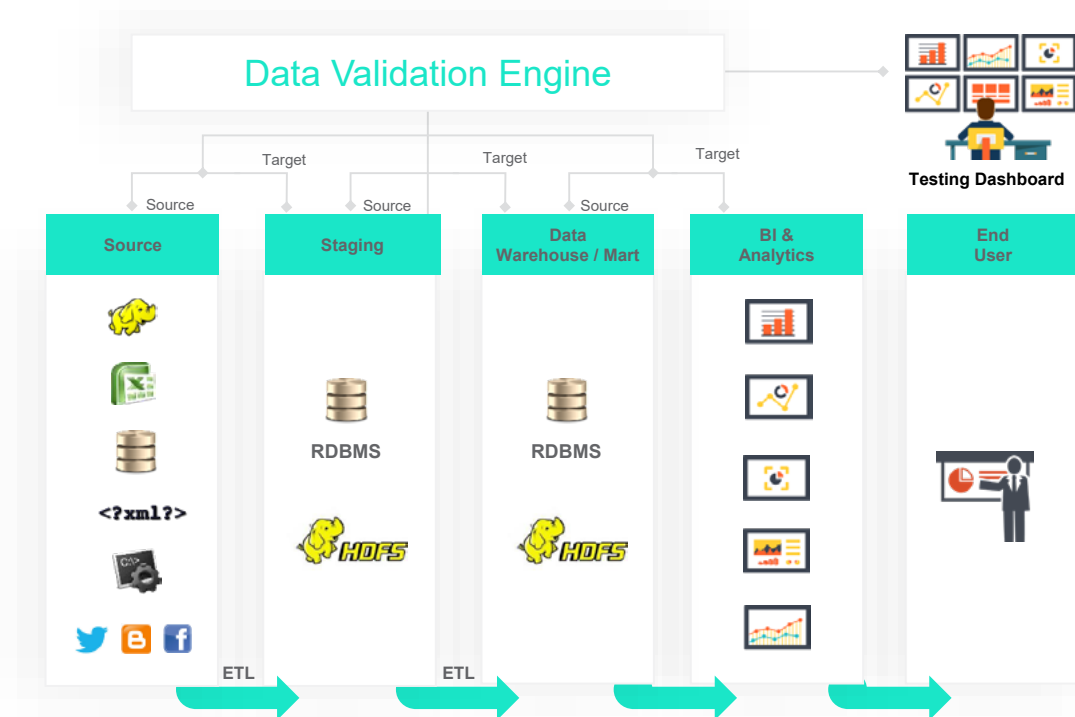
Architecture

How It Works

Data Validator connects to source and pulls data

Data Validator connects to target and pulls data

Compare source and target data in workschema

Display validation results in report and dashboard

Data Validation Engine

Target | Target | Target

Source | Source | Source

Source	Staging	Data Warehouse / Mart	BI & Analytics	End User

RDBMS

RDBMS

HDFS

HDFS

Testing Dashboard

ETL | ETL

Client Case Studies

A leading co-operative society running big retail business in England Done End to End Test Automation where data load from legacy systems to the ODS & then subsequent staging areas. This involved ETL testing, data quality testing in a very agile environment with stringent time lines.

Leading Healthcare Service Company– Automated the data ingestion testing of XML/JSON and other data sources with business transformation validation in target HIVE tables under Data Lake .

A leading Telecom Service provider – By leveraging BI/DW automation solution with Data Validator the team could

successfully automated migration testing and Improved the data quality across data flows.

Tech
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