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BI Packages Testing Engine

Chaitanya Narayanam

M.Phil, MSC(IT)

Test Manager, TQA, Hitachi Consulting
Hyderabad – India

Abstract: *This paper provides solution for those who are testing manually the Business intelligence (BI) applications and data warehouse (DW) applications. This will test the importing data quality and Extract Transform Loading (ETL) mechanism. This is an automated solution. This need some simple customizations for validating the ETL Rules. This automation solution will solve all issues and problems of manually testing teams at one shot. This also helps the Business rules validation of Reporting mechanism. This will become a User acceptance testing (UAT) for any commercial BI packages. Test engine tests ETL rules, Business rules and importing data.*

Keywords: *ETL, Data warehouse, Business intelligence, manual testing, User Acceptance Testing, commercial BI Packages, Business Rules, ETL Rules and importing Data.*

I. INTRODUCTION AND HISTORY OF BI PACKAGES TESTING ENGINE

This paper is providing solution for Business intelligence packages testing. Usually Business intelligence is readily available in the form of packages Viz. Informatica, Oracle Warehouse builder, Cognos, Teradata and etc. They are expensive and organisations need to invest so much money initially. However they need some customizations so development is also required after purchasing. The organization which are not interested to invest money they will choose to purchase the data base packages Viz. Greenplum, MS SQL Server etc. and then they will invest money for developing on them.

Basically packaged applications and non-packaged applications need testing. Currently, QA teams are dependent on manually preparing SQL Queries and executing them. In Case QA member not aware of the domain properly then these Queries are error prone. Results are not making satisfactory to the product quality. Importing data quality is again a problem. Sometimes data may be in millions audits and complete quality check is not achievable, these instances sampling is the technique for testing the data quality. However these tests are not up to mark and not validating the complete set of data.

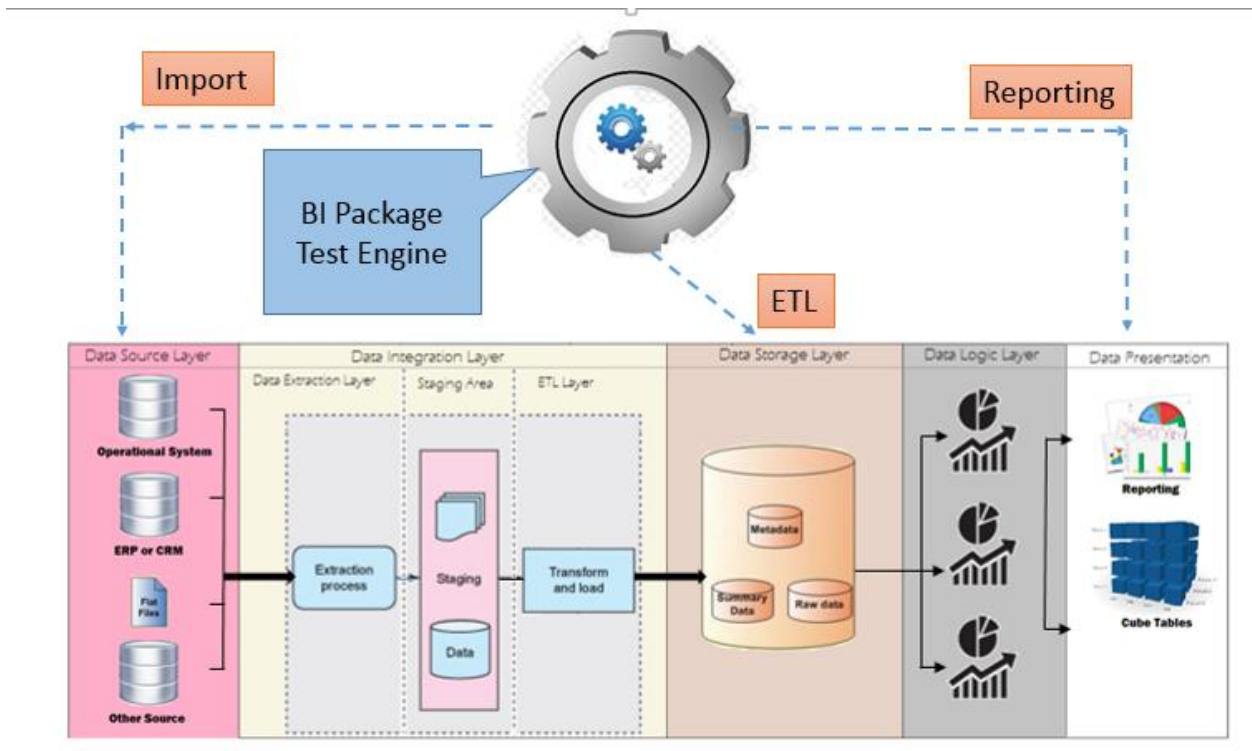
All these issues are solved by using the BI package test engine. This solution give rid to the data quality testing of the business testing packages. This will be the helpful for those who are using the manual SQL queries to test the data quality and the ETL mechanism rules validation.

II. BI PACKAGES TESTING ENGINE

Below table explains that each Business Intelligence (BI) Item area how much skill is required for a Quality Analyst to test the Business Intelligence Applications. Test Engine Automation Column explains that a QA with a low testing skill also he can test the Business Intelligence Applications. Whereas Manual Testers need high SQL writing skills along with the SQL result set analysis skills. Manual Testing may lead to leakage of defects as QA won't have adequate SQL joins preparations skills.

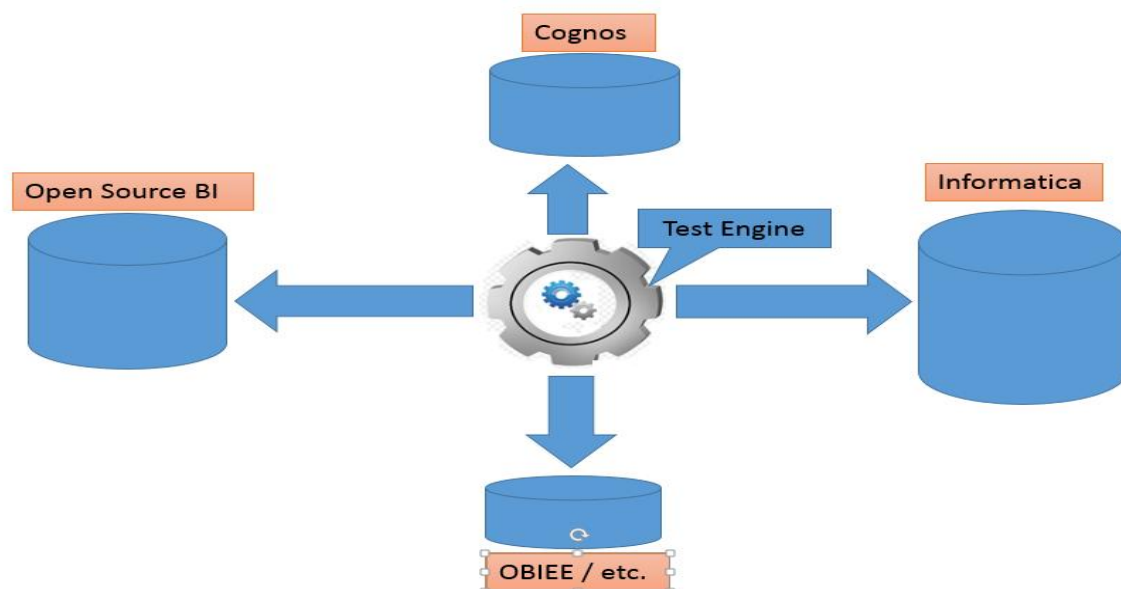
BI Item	Manual	Test engine Automation
Import Mechanism	Unix Language skill required	No Skills required just need to run package with parameters
ETL Mechanism	Complex Joins and ETL knowledge	Basic SQL and Customization and selection of parameters
Business Rules Engine	Complex Joins and domain knowledge required	Basic SQL and Customization and selection of parameters

BI Testing Package engine schematic diagram is as shown below figure.



BI Package Test Engine will service the import mechanism, ETL Process and Reporting layer testing. This Test engine will test the manually prepared BI Application, Informatica packages, Cognos, Teradata etc. Testing Quality will be high with this package as it is an automated solution.

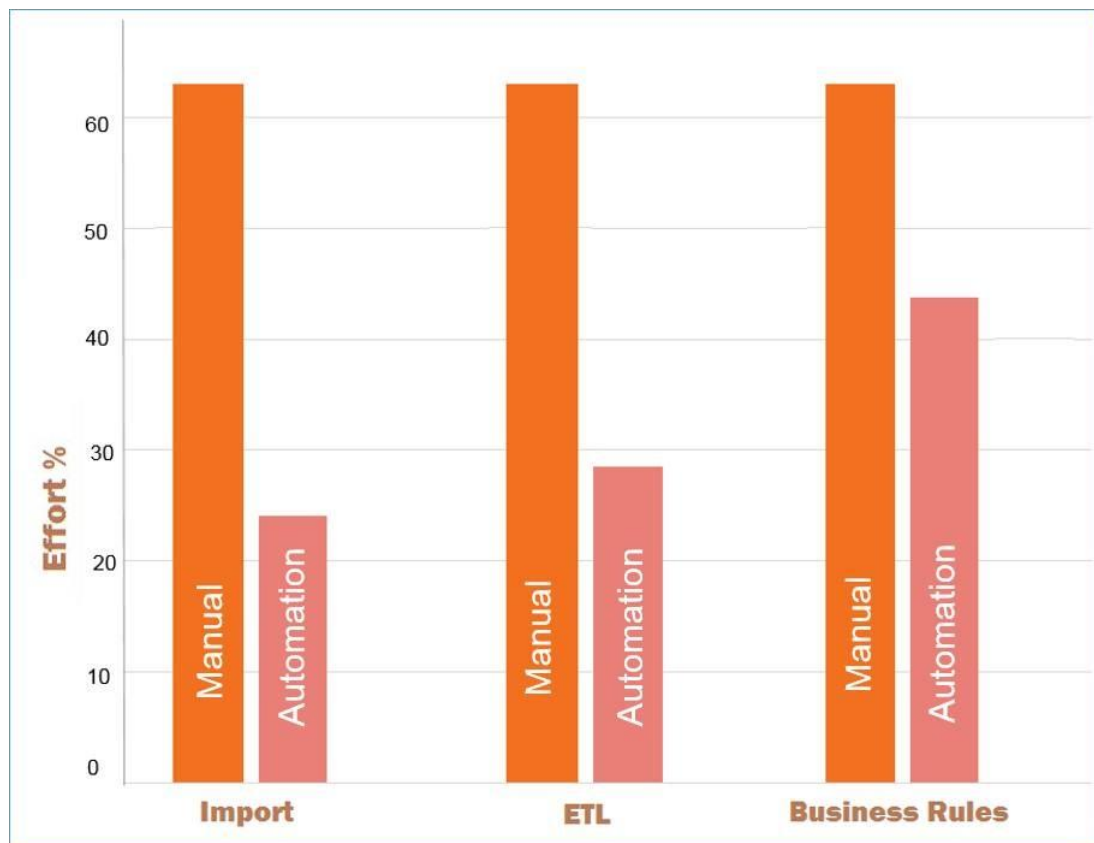
Test engine is plug and play with any type of BI Packaged Applications. Accommodating the plug and play facility it need data base connectivity to that particular package from Test engine.it is useful as follows



BI Package Test engine will be available based on domain only. Customizations and parameterizations are common for every commercial package and simple to use.

III. MANUAL TESTING VS TEST ENGINE AUTOMATION

Below graph explains about the test execution effort of the manual Testing and automation Testing with Test Engine.



Business intelligence item-Import area:

Automation effort is almost equal to 30%. Manual testing effort is based on sampling and automation is 100% validation of the data from the integrated data files.

Business intelligence item-ETL area:

Automation effort is almost equal to 40%. Manual testing effort is based on sampling and automation is 100% validation of the data from the target table vs source data files. Each and every ETL rule will be validation will be happen in automation with the simple parameters selection at front end UI facility.

Business intelligence item-ETL area:

Automation effort is almost equal to 60%. Manual testing effort is based on sampling and automation is 100% validation of the data from the target tables versus target / fact table data. However each KPI will be tested with the help of all business rules. Direct KPIs and calculated KPIs will be tested with fact table data.

IV. CONCLUSION

BI Testing package engine will solve the manual testing team painful problems and this will be very easy to use. Domain based test engines are need to procure then every domain test engine will perform User acceptance testing for the packages Viz. open source BI Package, Informatica, OBIEE, Cognos, Teradata, Oracle Warehouse Builder, Green plum made BI applications, MS SQL server Made BI applications, etc. Metadata using package engine will prepare the Base SQL to test for all packaged applications.

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