

Tech Notes

Why Data Warehouse Projects Fail

Using Schema Examination Tools to Ensure Information Quality, Schema Compliance, and Project Success

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According to a 2003 Gartner report, more than 50 percent of data warehouse projects failed, and the ones that survived were delivered very late with extremely high costs. In a 2007 study, Gartner predicted once more that 50 percent of data warehouse projects would have limited acceptance or be outright failures as a result of lack of attention to data quality issues.

DATA QUALITY IS NOT ENOUGH

Data Quality is one of the hottest topics in any IT shop. Although very important, Data Quality is far from being enough because decisions are based on information, not on data. Having quality data does not assure quality information. To have quality information, it is necessary to have quality data, but this is not sufficient on its own. We need more.

IT IS ALL ABOUT THE DATABASE SCHEMA

Information is produced by an application program that accesses data in a database, usually a relational database such as Oracle, DB2, Sybase, SQL Server, etc. The core of the database is the database schema, wherein are stored all the data definitions, the relationships between the data, and the business rules.

The quality of the information depends on 3 things: (1) the quality of the data itself, (2) the quality of the application programs and (3) the quality of the database schema.

Joe Celko (www.celko.com), a very well known expert and consultant in relational technology, states that without a quality database schema, it is very difficult to:

- Achieve good program performance and
- Deliver quality information

When developing any database application, we must always ensure the database schema has integrity and consistency – and no flaws. This must be done when the schema is created, and every time it is changed. If the database schema has flaws, the information will be flawed and the Data Warehouse projects will fail.

MODELING TOOLS ARE NOT ENOUGH

Database schemas are normally created using a modeling tool such as ERwin®, ER/Studio®, or PowerDesigner®. These tools validate the data model for completeness of the model, but they do not have the intelligence to “debug” the data model.

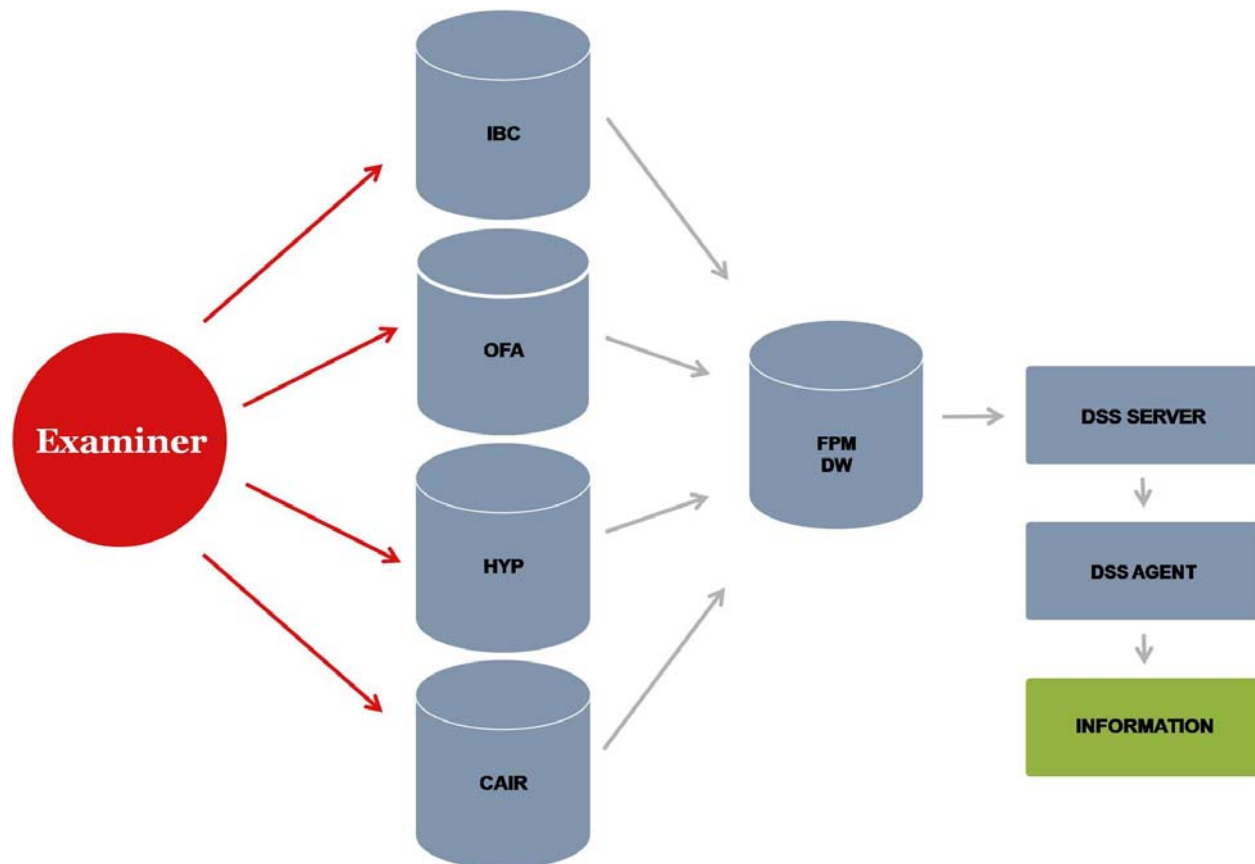
QUALITY OF FEEDER SYSTEMS

Data Warehouse projects depend on feeder systems. If the database schemas of the feeder systems have flaws, the information produced by the data warehouse will not have quality. This is the major reason why data warehouse projects fail. The database schemas of the feeder systems must be validated for consistency, integrity and compliance to the rules of the relational technology before a data warehouse project is initiated. This is where Embarcadero® Schema Examiner™ comes in.

SCHEMA EXAMINER

Schema Examiner was created to fill this gap, providing a means to “debug” the schema. Schema Examiner provides over 50 diagnostics to assure the schema adheres to the relational model, is consistent and has integrity. Schema Examiner can validate the data model, a set of SQL/DDI scripts or the database schema directly. Schema Examiner can also compare schemas, indicating the differences.

Manual validation is impossible due to the size and complexity of today’s database schemas.



A SUCCESSFUL DATA WAREHOUSE PROJECT

A corporation in the telecom business contracted with one of the major consulting companies to develop a large data warehouse project. The cost of the project was \$10 million. After the project was in production, they discovered that the quality of the information was not good; many answers were inconsistent. They considered to re-do the entire project or even scrap it.

Their committee suggested the hiring of a consultant. The consultant used Schema Examiner and after a couple of weeks of analyzing the feeder systems, he made several suggestions

based upon the findings of Schema Examiner. Once the recommendations were adopted, the results improved dramatically and the project was a total success.

The client has stated that the success of the project was due to the use of Schema Examiner.

They immediately purchased an enterprise license and made it mandatory to use Schema Examiner in all their IT projects, internal or external.

The project used 4 Oracle feeder system that were “debugged” using Schema Examiner; they were also compared to each other to discover inconsistencies. Below is a graphical representation of the project.

SUMMARY

- About half of all Data Warehouse projects fail due to poor data quality (Gartner Group)
- Data Quality is not enough - decisions are based on information quality, not on data quality
- A flawed schema impacts negatively on information quality
- Database schemas must be validated for compliance with the rules of relational technology
- Modeling tools validate data models / schemas for completeness, not for compliance
- Data Warehouse feeder systems schemas must be validated for compliance
- Schema Examiner validates schemas from feeder systems and compares them to verify inconsistencies



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