# Building an Agile Data Environment: WhereScape RED and WhereScape 3D

## WhereScape

# Summary

## Catalyst

Data warehouses are an integral part of enterprise information management strategies and often form the backbone for organizational analytics. While a wealth of best practices and standardized approaches to constructing stable data warehouses exist, building a new data warehouse (or remodeling an existing one) remains an arduous task. Warehousing projects that start from scratch often become untenable due to time, cost, and complexity constraints. In addition, continuously shifting analytic goalposts and the increasing variance in the nature and volume of data (big data) further lowers the return on investment (ROI) from data warehousing projects, making it difficult for management sponsors to sign off on them.

WhereScape helps enterprises reduce the time, risk, and effort involved in building or remodeling their data warehouse. The vendor provides a suite of applications (RED and 3D) that automate significant portions of the data warehouse lifecycle – from design, planning, and implementation to operation and renovation. WhereScape also helps organizations implement an automated data integration strategy to make the most of combining their data warehouse assets with big data.

## Key findings

- Works with most existing data warehousing products so that customers do not have to forsake their investment in their chosen database technology or ETL tool.
- Automates repetitive and mundane parts of building a data warehouse, reducing time to business value and increasing ROI.
- Can work with both SQL and NoSQL databases (through SQL wrappers, such as Hive for Hadoop).
- Does not offer analytics or presentation-layer capabilities beyond Microsoft Excel integration.
- Offers auto-documentation of entire data warehouse lifecycle and operational source systems.

## Recommendations

While organizational business intelligence is mainly limited to structured data (using SQL) today, the analytics market is fast moving towards a blended model, where structured enterprise data and semi-structured big data are equal contributors to the final analytic outcome. No one side replaces the other completely; instead, a harmonized SQL and NoSQL environment potentially delivers more than the sum of the parts. This has profound implications on how and where data is stored and queries run. A rigid schema and one monolithic data warehouse may actually deter a truly blended model. Instead, IT must be agile enough to quickly build fit-for-purpose logical data environments that can handle data stored at multiple places, execute federated queries, and arrive at results faster than before.

Organizations that are looking to modernize, build, or maintain an agile data warehousing environment – without protracted design and build cycles – should consider WhereScape RED and 3D. Given that WhereScape works with a variety of data sources (including SQL-based access to big

data platforms), it is also recommended for organizations that want to blend a wide variety of data sources, both structured and unstructured, for analysis.

## Value proposition

In Ovum's opinion, solutions such as WhereScape can help enterprises rapidly change their existing data environments without the high cost and complexity that such projects normally involve. In addition, the use of WhereScape can also significantly reduce the expenditure incurred on IT services such as deployment, design, and implementation. Using WhereScape to remodel data warehouses ensures that data structures stay current and that warehouses are better placed to integrate newer data sources and integration methodologies – a critical capability for big data. Importantly, WhereScape's capability to produce automated documentation, which updates as changes are made, increases transparency and reduces operational and compliance risk.

# Solution analysis

## Functionality

WhereScape RED and 3D form a data warehouse automation suite that allows users to automate critical aspects of the data warehouse lifecycle from design through implementation, operation, and renovation. WhereScape 3D is a data warehouse design tool that produces project design documentation and an implementation-ready design through the process of source and target exploration and modeling; usability and data legibility; and scoping, sizing, and costing activities. It is compatible with WhereScape RED for automated buildout, or can be used for input to a manual build or a third-party tool set.

WhereScape RED is an application for agile data warehouse development and management. It can be used in conjunction with commonly used database platforms to build data warehouses, including Microsoft SQL Server and APS/PDW, Teradata, IBM DB2 and Netezza, Pivotal Greenplum, and Oracle and Exadata. WhereScape is extending its current processing solution on Hadoop/Hive. The vendor's initial approach is to provide Hive-based ELT via RED so customers have the ability to move data from their data warehouse into HDFS/Hive and from HDFS/Hive back into the data warehouse.
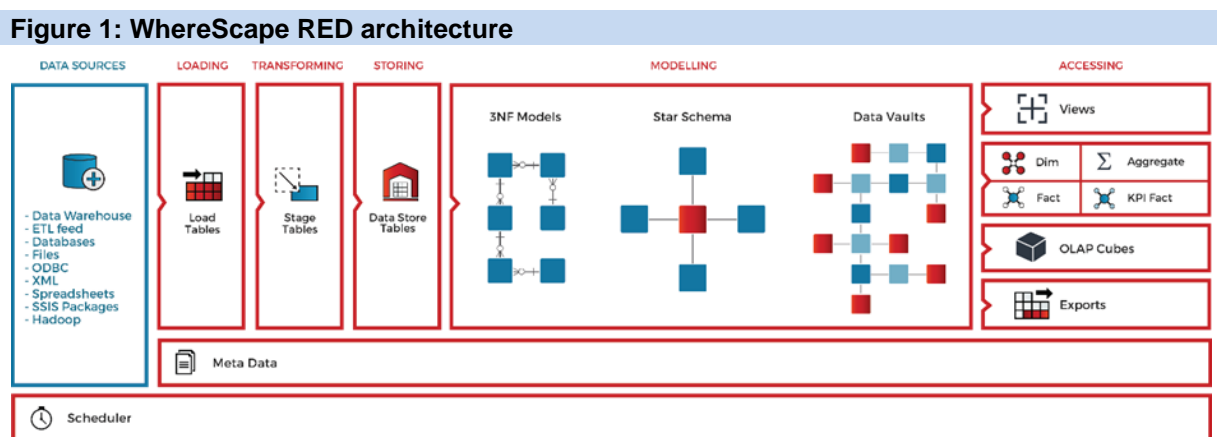
Beyond the planning phase, building or redesigning a data warehouse with WhereScape RED starts with data ingestion. By utilizing the customer's database management system (DBMS) as an extract, load, transform (ELT) engine, RED instructs the DBMS to extract data from online transaction processing (OLTP) systems, flat files, and big data platforms such as Hadoop (through Hive/HDFS). Where possible, RED also takes advantage of database-specific features or tools, such as optimized database loaders. Adhering to an ELT approach helps WhereScape's customers optimize their chosen database technology rather than investing additional resources in skills or hardware.

Once the data is ingested, the solution helps developers natively transform, store, and model data per business needs. The solution builds an integrated transparent metadata repository for all code, audit, and workflow components, with full versioning, code promotion, impact analysis tools (trackback and track-forward features), metadata search, and automated documentation and data lineage production. The metadata repository acts as the cornerstone for the entire ELT process through integrated dependency management and scheduling. This enables the production of consistent, fully version-

controlled code, allowing for change-impact analysis through an auditable workflow. Existing models built with other platforms can also be modernized and imported directly into the modeling phase.

Automation of mundane data warehousing steps helps WhereScape deliver significantly shorter time to value. Automatic code generation, optimized for each DBMS platform, and automation of elements such as surrogate keys, indexes, and data description language(DDL), combined with the flexibility to customize and enhance the generated code, enables developers to focus on understanding and implementing business rules instead of technology.

Once the modeling and build phase is complete, data can be set up in a number of ways for access, including cubes, views, aggregates, and exports. WhereScape does not provide its own analytics or presentation layer tools beyond Microsoft Excel integration.

**Figure 1: WhereScape RED architecture**



Source: WhereScape

# Go-to-market strategy

WhereScape, through its suite of products, targets a wide range of organizations, including large global enterprises. The vendor has customers in a variety of vertical markets, although the solution is not inherently vertical in nature.

The vendor's complementary technology partnerships include Microsoft, Teradata, Oracle, IBM, and EMC. It also partners with system integrators (SIs) and service providers such as Sopra Group, CGI Group, UD4D, Affecto, C5 Alliance, Knowit, Cerion, Automade, Deployments Factory, Solvistas, and Teknion.

Perpetual licensing is based on the number of named users and the target database. Customers need to renew their subscription every year. Annual maintenance is provided at 20% of the license cost, providing access to live technical support as well as an online forum, product updates, user groups, and documentation and other resources. WhereScape typically has one major release every six months, with patches and updates distributed as needed.

# Deployment

## Multinational truck manufacturer

A multinational truck manufacturer needed to combine sensor data with operational data to generate compelling offers, provide greater customer service, and improve profitability. Truck sensor data

enables it to truly understand every aspect of each individual truck. It can now monitor truck components, precisely where the truck has been driven to, how fast it was going, and even how aggressively it was driven. Sensor data combined with operational data (such as make, model, and service history) allows it to build a very detailed profile about each truck. By using the right information management tools the company can produce offers that have a high statistical chance of being profitable.

With WhereScape it built an agile analysis and data management strategy. It automates the planning and building of data into its IBM Netezza enterprise data warehouse – which makes it significantly faster than traditional methods. WhereScape enables the company to get value from the sensor data and it shortened times to market; it is able to deliver analytics solutions 10 times faster than before.

WhereScape is also helping the truck manufacturer with the integration of all of its information management systems. As an organization, it needed to move from a series of independent data marts with their own modeling techniques to a fully integrated data warehouse with a single global modeling standard. WhereScape has helped it switch from an ad hoc technical approach to a model-driven approach.

The truck manufacturer's main IT benefits of using WhereScape are data consistency and integrity of its overall data environment. It has five sites working on the same data warehouse; WhereScape helps it ensure all of these sites are working efficiently and in the same manner. Additionally, system maintenance changes can also be achieved much more quickly than before.

### Global investment management company

A global investment company with more than $58bn in funds under management was experiencing less-than-satisfactory results with its initial efforts in constructing a data warehouse. The company evaluated all the data warehouse tools available in the marketplace and spent development cycles creating ETL templates from small data sets, but the whole process was becoming increasingly difficult to manage and change as data sets grew. The company also found that at the end of a development sprint it was too difficult to undo anything that was wrong.

After nearly a year of what was characterized as a "painful development process," the business discovered WhereScape RED. Using RED, the company built, documented, and maintained the entire data warehouse lifecycle with agile Scrum development methodology and philosophy. WhereScape RED enabled the company to run monthly sprints (which can be easily changed at the end of a sprint if business requirements change). The project started with a team of three Scrum-certified Agile developers and has now grown to six people. The company found value in WhereScape's Agile development approach, which enabled iterative development cycles within its monthly sprints and daily 15-minute standups.

# Data sheet

## Key facts about the solution

**Table 1: Data sheet: WhereScape RED**

| Product name | RED and 3D | Product classification | Data warehouse automation |
|---|---|---|---|
| Version number | 6.8.4.0 | Release date | n/a |

| Industries covered | All | Platforms supported | Microsoft SQL Server / PDW / APS; Oracle / Exadata; Teradata; IBM DB2 and Netezza; and Pivotal Greenplum |
|---|---|---|---|
| Relevant company sizes | All, but focus on mid to large | Licensing options | Per target database and per user |
| Languages supported | English | Routes to market | Direct, reseller, OEM consortium, and consultancies |
| Deployment options | On-site and cloud | URL | eu.wherescape.com |
| Company HQ address | Auckland, New Zealand | European HQ address | Reading, UK |
| North America HQ address | Portland, Oregon, US | Asia-Pacific HQ address | Singapore |

Source: Ovum

# Appendix

## Methodology

- Extensive briefings with WhereScape.
- Secondary research from annual reports, government departments, trade bodies, and industry regulators.
- Continuous ongoing research into business and technological developments in the analytics sector.

## Further reading

*2015 Trends to Watch: Business Intelligence and Enterprise Performance Management,* IT0014-002945 (October 2014)

*Ovum Decision Matrix: Selecting a Business Intelligence Solution, 2014–15,* IT0014-002923 (July 2014)

## Author

Surya Mukherjee, Senior Analyst, Information Management

surya.mukherjee@ovum.com

## Ovum Consulting

We hope that this analysis will help you make informed and imaginative business decisions. If you have further requirements, Ovum's consulting team may be able to help you. For more information about Ovum's consulting capabilities, please contact us directly at consulting@ovum.com.

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