Tesco

Agile Data Warehouse Development: Realising Business Value Quickly at Tesco

Using WhereScape RED, Tesco successfully created an integrated reporting application for global promotions in six months, smashing the previous three-year development forecast.

Background

Tesco PLC is the second-largest retailer in the world and a global company operating in dozens of countries. Tesco is facing new business challenges and opportunities, and is especially concerned about how the company manages its discount programs. Tesco needed a global view of its data to coordinate management information.

An Aging Data Warehouse

At the heart of management reporting, the data warehouse acts as the official system-of-record for Tesco. The company had been working on a long-term development plan to renovate the data warehouse using traditional waterfall methodologies. In the meantime, dozens of ungoverned databases sprung up, acting as separate sandboxes to generate specific outputs, all without a blueprint.

Andy Ruckley, Head of Technology: Data & Information Platforms, Tesco PLC

initiated a review of Tesco’s management information systems, including infrastructure, architecture, data models, hardware, processes, interactions, and business uses for data. Ruckley found many pockets of excellence. He also found problems that are typical of older data warehouses. There were over a hundred playpens (or sandboxes) where data was dumped “to have a look at it,” resulting in 20 terabytes of duplicate data.
A New Approach Needed

Over the years, the data warehouse would periodically run out of capacity. The usual solution was to buy newer equipment, which was an enticing option when funding was available. Once installed, the logical and physical data architecture of the old data warehouse was simply lifted-and-shifted onto the new platform.

Ruckley concluded that Tesco should avoid long project cycles with big development teams. Instead, Tesco needed to start fresh with the right data model across all functions, spanning all regions worldwide. A new approach was also needed to renovate the data warehouse incrementally, enabling business value to be delivered continually throughout the development process.

Ruckley found several companies who had successfully pursued agile data warehouse development, allowing them “to turn around projects more quickly and model the business more accurately.” Ruckley was particularly interested in “how companies transitioned their data warehouse into a fit-for-purpose capability,” using the Teradata platform with WhereScape’s data warehouse automation tools.

Key Pain Point

One of the company’s greatest pain points is the amount of money Tesco spends on promotions. Was Tesco gaining or losing money on promotions? The company wanted additional insights into “how products were selling by brand, location, and price point” from a global perspective. When Ruckley showed management the prototype of the promotion analysis, they became engaged and wanted to use the prototype immediately.

Ruckley initiated a proof-of-concept consisting of a single sprint, which went well. A plan was formulated to conduct the initial project from February to May of 2014. The strategy was to put a “working solution” in front of business users every four weeks. Three teams of six to seven persons performed sprints on four-week cycles. The results of one team’s sprint were used as the input to the team in next track.

Each team in the three tracks specialised on performing specific functions of Tesco’s Discovery- Build-Release layers:

• Data Driven Design layer
  The Discovery phase is “scouting ahead” to lead the team to a business solution. WhereScape 3D is used to profile the source data with WhereScape RED rapidly building the prototypes on Teradata.

• Integrated Data layer
  The logical data model is designed in WhereScape 3D to support the output of the Discovery phase. WhereScape RED is then used to generate the tuned physical data model on Teradata with supporting SQL procedures for applying business rules and populating with history.

• Access/Presentation layer
  The Access Layer is where the data is made available to the business users. MicroStrategy is the primary tool to present the Teradata views and tables that are designed and built using WhereScape RED.

Success Factors

1. WhereScape enabled the sprint teams to manage the data architecture and model key concepts, while sharing the current status with version control. WhereScape 3D is used to profile the data, while WhereScape RED

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does everything else, such as lineage and ETL. We generated more than 300 views from the business policies.”

2. Agile methodology requires quick turnarounds for trying and testing alternatives. The combination of WhereScape and Teradata provided this responsive infrastructure. “WhereScape allows us to model a concept, press GO, generate the DDL code, and test the physical structure as to whether it actually works. And, it is all documented! WhereScape adapts well to agile. You can easily change things. It does not impose limitations on the agile process.”

3. Data architecture design is a blend of art and science, with many shades of gray. WhereScape was used as a learning tool that enhanced the skill level of their team members. “Some had never used the WhereScape tool. WhereScape allowed us to quickly create a model and then test it, so that we could learn the implications of design decisions. We are continuing to learn. Other tools do not allow for the quick cycles necessary to enable this learning.”

About WhereScape

The pioneer in data warehouse automation software, WhereScape empowers organizations constrained by time, money or lack of resources, to deliver business value from their decision support infrastructure – including enterprise data warehouses, business facing data marts, and big data solutions. WhereScape has global operations in the USA, UK, Singapore, and New Zealand. www.wherescape.com