WhereScape®

Toyota Financial Services
Drives Digital Transformation
with WhereScape

Toyota Financial Services

Industry:
Automotive/Finance

Location:
Cologne, Germany

Employees:
300

Solutions:
WhereScape® 3D,
WhereScape® RED,
Snowflake

Highlights:

- Moved 95% of infrastructure into the Snowflake cloud data platform

- Switched modelling style to Data Vault

- Harmonised all reporting countries onto a standardised XML format

- Moved from Pentaho hand-coded ETL to automated ELT with WhereScape RED

" *At seven months into the project we can say it really worked out. We have been able to really quickly develop an initial MVP for our first country and that was really good. The automation and the changes we needed to do were rapidly applied. We had to remodel a few things and that was done within a day with the automation in WhereScape.* "

Carsten Griefnow, Senior BI Manager,
Toyota Financial Services

About Toyota Financial Services

Toyota Financial Services was founded in 1988 and had 12.6 billion in assets as of 2020. The company offers finance and leasing business on new and used Toyota and Lexus cars as well as people-centred mobility solutions. The bank is part of the Toyota Motor Corporation, headquartered in Toyota City, Japan.

The Challenge

Toyota Finacial Services group BI team in Cologne has nine team members and receives financial reporting data from offices in nine countries around Europe. The BI team must collate that information in its data warehouse to give a single source of truth that represents a measurement of the bank's financial performance.

The challenge was that each country has its own data model. They sent data in different formats, at different times and with different frequencies, varying from daily to monthly. The group BI team was then using relational databases in IBM Informix with a harmonisation layer for regulatory reporting, a system that wasn't scalable or time-efficient. All systems were on-premises and the team was using a Pentaho ETL tool and a hand-coding methodology.

The group BI team was looking for a new solution to standardise the data model, renew the technical infrastructure and implement a unified methodology

for each country to deliver its data in a standard XML format and on a daily basis. The group BI team would then only need to do the sourcing once and reapply for each country.

The team initially considered staying on-prem with a new database using Pentaho and Oracle, but was then challenged by the general management to seek a future-proof cloud solution.

The team sought proofs of concept with vendors to explore different ways in which they could achieve their goals. The challenge was to rebuild one of the company's interfaces from a calculation engine. Solution providers were given the data and were tasked with proving they could speed up the ETL process and harmonise the data so it could be uploaded into the interface.

The Solution

One company Toyota Financial Services invited for a proof of concept was Infomotion. The consultancy's recommended data ecosystem favours WhereScape Data Automation software to build and manage data warehouses in conjunction with Snowflake's cloud data platform and data vault modelling. The Infomotion team created a table that fitted into the calculation table seamlessly. Their competitor was using AWS' own ETL tool, but they didn't even get halfway through the project and couldn't present a result that was fit for purpose.

The technological advantages to using WhereScape were obvious, but often a change in mindset and ingrained habits is needed to embrace automation. Senior BI Manager Carsten Griefnow was in charge of a team of developers that used WhereScape at a previous employer, but the transition from SAS hand-coding methodologies had not been smooth and the company did not realise the benefits of automation.

When he moved to Toyota, Carsten was initially hesitant when he discovered they considered using WhereScape. But his mind was made up when he saw the results that came after an initial bedding-in phase, as developers saw the advantages in speed in using

an abstracted GUI and a code generator over working directly with, and manually writing source code.

"We had a lot of heavy SAS users at my old company. With the experience, knowledge and thinking of SAS, they expected WhereScape to be a point-and-click ETL tool and their processes didn't work out. I was skeptical about using WhereScape at Toyota, but with the right people and skills onboard it has worked well.

"WhereScape is majorly different from a classic ETL tool. You need to switch your mindset to understand what you're looking for. I have multiple countries doing the same process over and over again, so is there a way of automating it where you can streamline it to do the development once, then reapply it for every country in the same way? This is where WhereScape comes into play. With classic ETL tools, you would have to do parallel runs of the same program."

Daniel Bredfeldt, a consultant from Infomotion that worked on the project at Toyota, tells us how the experience was for a developer like him to switch to WhereScape. "I was working with ETL tools like Informatica Data Services for the last eight years, so it's a bit different. The first country would have been easier to do it by hand, but the extension of the whole loading process is super easy with WhereScape and I really like that it's all done in one program."

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Consultant at WhereScape partner Infomotion

The Results

Within the first seven months of their project, the Toyota Financial Services team has moved 95% of its infrastructure onto the cloud with Snowflake, and has designed and built a data vault using WhereScape 3D and RED.

Carsten said: "At seven months into the project we can say it really worked out. We have been able to really quickly develop an initial MVP for our first country and that was really good. The automation and the changes we needed to do were rapidly applied. We had to remodel a few things and that was done within a day with the automation in WhereScape. The data vault modelling was really quick to build from scratch and do all the loading. We had to remodel a few parameters and do a couple of reruns, but the deployment process was smooth in comparison to other tools."

Daniel adds: "The DDL in Snowflake is deployed by WhereScape with seamless integration between scheduling the task and the loading of the tables. That and the automated documentation are really great. That was a pain point in almost every project I've worked on. Before, I spent maybe five percent of my time on documentation and it was never finished."

Every action taken in WhereScape is recorded in a metadata repository. This means the whole project can be documented at any point, with full data lineage and impact analysis. This also gives the ability to roll back and forward if required.

Carsten explains how this works in practice. "One of the big advantages is the data lineage, which is inbuilt. That helps me as the manager to show people where the data came from, how it is sourced, what steps have been taken and what kind of manipulation has been done to the data before it goes into the reporting.

"I really like the impact analysis and automatic tracing. That is becoming more and more important as you have to report end to end what did you do with your reporting data. We're handling regulatory reporting here and we need to be able to trace it back right to the source. That's one of the reasons we forced the countries to use standardised XML, because we can ask the team in the country that sent it where they mapped a certain field from so we can do the full data lineage back to the core systems."

As well as the more immediate benefits that Data Automation has demonstrated, the Toyota Financial Services team sees its project with WhereScape and Snowflake as an investment that will pay dividends in the long term.

Carsten explains. "It's hard to say how much we will save because on-premise is a different model but in the long term, when you have to replace the servers and get more compute power in, that's where you're going to start saving. We put WhereScape into an AWS account in the cloud as well so that's one of the main reasons we will save money. Snowflake is purely in the cloud so we can adjust the compute power and speed as and when we need."

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