SITUATION

XDM replaces Legacy System

Agile Test Data Strategy with XDM

Generali Deutschland AG relies on UBS Hainer

With 9 million customers and a contribution framework of approximately 15 billion euros, Generali Deutschland AG is one of the largest and leading primary insurance groups in the German market. As part of its agile strategy, Generali has decided to modernize its test data generation and provisioning processes.

The existing test data management solution was technically demanding, complex to operate and maintain, and did not meet current architectural requirements. UBS Hainer won the contract to completely replace the existing solution and introduce XDM as a future-proof test data management application across departments.

The minimum requirements for this initiative included covering existing functionalities and meeting current architectural guidelines:

- Various insurance systems can be mapped within a single tool. During test data creation, users can select relevant systems and subsystems.
- Integration of all relevant data sources, including master and inventory data in SAP.
- Test data should be created based on production data, anonymized, and provisioned into specific test environments.
- Data versioning for generated datasets.
- Users define the scope of test data creation. Individual relevant datasets can be selected, with linked data being retrieved from multiple databases.
- Access control via a central authorization system.
- Using standard software instead of an in-house tool facilitates focus on our core business.

The Proof-of-Concept (POC) successfully demonstrated XDM's capabilities, and the accompanying pilot made test data accessible to testers and developers without assistance from administrators or test data managers. The successful pilot laid the foundation for broader productive implementation, with various product segment systems incrementally transitioning to operational use.

UBS Hainer not only provides the XDM tool but actively supports its implementation. We accompany Generali throughout the project with our expertise and experience from reference projects until rollout is complete.

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Challenge: 45 Insurance Systems with Individual Requirements

Across the entire corporation and multiple business segments, test data consumers need on-demand test data for 45 insurance systems. These insurance systems consist of multiple core applications, such as service provision, contract management, and partner management, as well as multiple shared database systems. On-demand test data means enabling every developer or tester to select sufficient, case-specific, accurate, and consistent test data at any time. XDM extracts the data from the production environment, anonymizes it, and quickly provisions it into the target environments.

Agile Approach: XDM allows Incremental Implementation for Rapid Proof of Value

For a pilot project, the largest and most complex insurance system—health insurance—was selected. The goal was to meet all requirements for this system as outlined above. Reusable Methods

XDM's row-level processing tasks form the core technology for test data provisioning. These allow repeated selection and copying of specific datasets from any number of tables across any number of database systems. Initially, selected tables with relevant relationships were mapped in XDM, and tasks were progressively expanded.

For anonymization, several methods were implemented in XDM to replace critical information, such as personal data, with synthetic yet realistic values. These methods are based on XDM standards, ensuring data consistency, conformity, and readability. They can be reused for other systems and are customizable for various use cases or target environments.

Repeatability and Ease-of-Use: The Datashop

A crucial requirement for (automated) testing is repeatability. To ensure reversibility, a corresponding delete task was created, combining the steps of "copy," "delete," and "write" within one XDM workflow.

This workflow can be executed by any user via an intuitive web interface called the Datashop, which allows users to easily select source and target environments from lists and define the business keys of objects to be copied for each run. The Datashop enables testers and developers to independently generate test data as needed, without requiring assistance from

a test data manager or administrator. Ultimately, Generali implemented multiple Datashops, each customized to the needs of various business units.

Versioning: The Icebox

Test datasets need to remain available for future use or re-provisioning in their original state—for instance, when preparing a test environment before a regression test. To facilitate this, the row-level processing task was extended with an optional backup step: data is read from the source per test data request and stored in XDM's Icebox.

Each execution is assigned a unique job ID, which allows clear identification during restoration. After completion, users receive this ID via email. Test data stored in the Icebox can be directly and repeatedly distributed across test environments as needed.

Seamless Integration: Test Data Reservation

When multiple testers work on the same system, conflicts may arise within the test environment. To prevent this, XDM offers the ability to reserve data for a specific tester for a set period once it has been copied into an environment. Additionally, data can be locked to prevent unintended modifications or distribution through test data provisioning. Since Generali is gradually replacing an existing test data management tool, XDM also processes reservations from the legacy system. XDM is capable of communicating with different external systems in various ways. In this case, an extended script was developed to check reservations in the old system and automatically transfer them to XDM.

Access Control

XDM comes with a predefined and easily expandable authorization model, which can be customized. During full deployment, XDM was integrated with Generali's existing LDAP-based access management system. User roles and access permissions are managed within the established access management framework, ensuring a seamless experience.

Incremental Expansion: Connecting Additional Applications

After a successful POC, the structures of 20 additional core applications were incrementally integrated into XDM. Since not every application is relevant to all tests, the Datashop allows users to copy data only for selected applications while maintaining consistency and relational integrity. Each application is assigned an "application model" that defines data relationships and ensures dependent data is always copied, deleted, or written correctly across

applications and databases.

Avoiding Rework via Configuration-as-Code

Following the initial deployment of fundamental features, an additional XDM instance was created to facilitate future integrations and minimize maintenance downtime for users.

Thanks to XDM's Configuration-as-Code principle, this integration instance was set up and configured within a day. Newly developed features are exported from the integration instance and stored in a Git repository. As part of the agile process, new increments are regularly transferred from the repository to the production system, allowing rollbacks to the last stable version at any time. This ensures that enhancements to XDM do not disrupt the productivity of developers and testers or hinder the software development process.

Conclusion: UBS Hainer and XDM Deliver Real Added Value for Generali

At present, the majority of Generali's insurance systems, along with their core applications, have been migrated to XDM. Already, the Datashops are extensively used by 310 testers and developers. Once the migration is complete, XDM will provide up to 500 testers and developers with access to on-demand test data.

The step-by-step productive rollout has made it clear how the workload per system decreases and how the excellent reusability of XDM components—through abstraction and parameterization—proves beneficial.

Thanks to XDM's adaptability, all specialized requirements have been successfully implemented. The primary effort lies not only in implementation but also in detailed project work with business units and the project team, closely supported by experienced UBS Hainer consultants.

Like Generali, we at UBS Hainer firmly believe that outstanding software quality is only achievable with the right test data. With this conviction, we will continue to invest in the ongoing development of our XDM tool to meet all future needs of our customers.