Test Data Management (TDM)

Improving testing effectiveness and reducing the time and cost of providing high quality, safe test data through a coordinated and easy-to-manage process

Implementing a solid test data management (TDM) strategy and using industry tools can result in time savings and, ultimately, cost savings by nearly eliminating the manual work involved in identifying, transforming, deploying, and maintaining reusable sets of test data.

What is the core business issue?

Our prior experience with assessments for large, complex engagements indicate certain test data challenges. However, not-so-large or complex engagements also face many of these same challenges. These challenges include:

- **Lack of Data Variety:** A lack of variety of data prevents testing of edge cases or one-off instances that may cause defects. While edge cases can be added to test data manually, this can be a labor-intensive process.

- **Lack of Production Data:** A lack of production-like data and data volumes can prevent a test team from reproducing the volume required to do sufficient Performance and Load testing. Performance testing can be critical to discovering issues earlier in the testing lifecycle for modules and hardware that do not scale as expected. Using production environment data (masked appropriately) provides real-life examples for test teams to replicate.

- **Human Error:** Manual data creation is labor intensive and prone to human error. Manual data creation can also cause delays to testing, as data needs to be recreated for each test cycle or iteration.

- **Data Security Risk:** Leveraging a production database for testing needs without properly masking personal identifiable information (PII) and other sensitive data may add exposure risks because many non-production environments are not as properly secured as production environments.

- **Data Integrity Risk:** Manually bringing over production data to a testing environment (or from another source to another target) can create potential error points if referential integrity and parent-child relationships are not preserved in the process.

- **Storage Growth:** Using a full dump of production data in a test region when it isn't needed contributes to storage growth, especially when added to the existing data already in the test region.

- **Non-Standardized TDM:** TDM team siloes across the project, partial automation of test data management processes, and ad-hoc test data requests brings in overhead to the testing organizations.

What is Deloitte's Point of View on TDM?

Deloitte's Point of View on a solid TDM strategy includes the following five critical components:

- **Deep Industry Knowledge and Experience:** Harness deep industry knowledge in broad identification of test data requirements. These requirements can then be utilized to identify the source, data subset policies, and data synthesis needs

- **Holistic TDM Processes:** Publish clearly defined data management workflows, policies, and procedures for the creation, load, and protection of test data. Define metrics to measure data health in each environment and use reduced volumes of production data when a full load is not needed.

- **Effective Data Sub-Setting and Masking:** Use data subsets which contribute to effective testing as it enables usage of real-life data sets (preserves referential integrity from the source) only on a smaller scale. The use of data masking is to maintain data security by protecting PII and other sensitive data.

- **An Efficient TDM Tool:** Opt for automated TDM tools to reduce the manual process of creating test data and reduce the chance of errors. Reuse subset criteria and masking policies on multiple and different sources. Identify the table relationships and where the sensitive data is fast.

- **Dedicated TDM Team:** Dedicate resources to manage and accommodate the project's test data needs. It is recommended that this very important task not be added to the load of testers or the development team.

Creating More Value

The Independent Testing Services – TDM offering establishes a value-based solution for our clients that can:

- Provide a balance of industry depth and low-cost test data management resources, leading to lower cost of managing and accommodating test data needs

- Provide high quality, safe test data to the needed target environments in a timely manner

- Provide a flexible delivery model for delivery of test data management services

- Reduce risk around data security, data integrity, and human error

Getting It Done

Deloitte's TDM services consist of two main categories: Advisory Services and Delivery Services.

Deloitte's considerable experience with the various TDM vendors, TDM practices and processes, and industry knowledge contribute to valuable advisory services. These same strengths translate to our delivery services resulting in more time being spent on quality testing instead of an otherwise unnecessarily stressful test data strategy.

Advisory:

- **Tool Evaluation and Selection** – Deloitte is ready and able to assist with your TDM tool selection. Our experience with multiple different vendors allows us the opportunity to provide candid and unbiased feedback on each prospective tool's fit.

- **TDM Team Organization and Planning** – Having resources dedicated to managing and accommodating the project's test data needs is a full-time job. We are prepared to help in personnel, role, and process planning for the TDM team.

- **Proof of Concept** – After a tool is selected, we can help build and demo a proof of concept against a select amount of data to demonstrate general capability and benefit.

Delivery:

- **Tool Hosting, Installation, and Setup** – Using Deloitte's internal Solutions Network, we can host, install, and set up the chosen TDM tool. This saves your organization the need for additional hardware and infrastructure.

- **Identifying Where Sensitive Data Lives** – Deloitte can help identify what sensitive data you have in your possession and where it lives. Completing data discovery may help confirm sensitive data for some organizations, while it may help avoid a compliance issue down the road for others.

- **Sub-setting, Masking, and Transferring Data** – Deloitte can help define and implement sub-setting criteria to reduce the size of data moving from production (or the source) to the target region(s). We will also help mask sensitive data prior to moving it to the target region(s).

- **Compliance Reporting** – Deloitte can also help in creating reports that show proof that no PII is being kept in the target region(s) after it has been masked and moved there. It's important (and may be an audit requirement) to have proof of this fact.

Deloitte also offers an unmatched range of capabilities across consulting, financial advisory services, tax, and risk management worldwide. We realize the importance of combining deep technology experience with practical business strategy. This integrated approach leads to services designed to help our clients in their efforts to accomplish their testing phases and their projects while staying aligned with their overall business strategy.

Let us get started

For further details or a demonstration of how our data quality framework can help you, please contact:

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