

**Adaptive Metadata Manager™ (MM)** is a web-based repository that is designed for use in metadata management and provides the capability to capture the data definitions from data modeling tools, relational databases, XML schemas, COBOL Copybooks, and other sources, and the detail of the transformations that occurred – for example loaded from definitions in extract-transform-load (ETL) tools. The metadata captured from all these sources is managed in a role-based environment that provides each metadata role (data modeler, report developer, business user, data steward ...) with exactly the capabilities and access privileges that are appropriate for their needs. Adaptive MM facilitates governance, compliance and transparency of the metadata management process.

## Metadata Repository – Why is it needed?

‘Metadata Management’ is the process of managing an organization’s data assets in the context of how they are used by systems and business processes. This enables effective changes to the data assets to be made and the full impact of changes to be understood.

Organizations realize the need for a metadata repository when they have reached the limit of process and data modeling tools and/or home-grown Microsoft® Office Access databases and spreadsheets and recognize the need for an open, enterprise scalable repository. Adaptive MM fulfils the needs for an enterprise-scale metadata repository:

- To **manage** a large amount of disparate **technical and business metadata**, providing different end-to-end views to a variety of user roles
- To collaborate on updating and managing the information, **facilitate re-use**, and **manage change**, especially through future **planning of different scenarios** and timescales
- To construct end-to-end **visualizations of the information flows** from any point (e.g. origin, final report, any intermediate point), in a form suitable for both business and technical users
- By Business Analysts looking for the **"single point of truth"**, including the necessary collaboration, workflow, and governance to ensure their metadata is reliable and maintained in a proper fashion

- To **support** initiatives such as **SOA**, and **regulatory compliance** that require a comprehensive, accurate and accessible repository for managing enterprise metadata in the context of business and technical requirements
- To **spot redundancy** or use of inappropriate versions of the information
- To **assign value to information** by seeing how it contributes to the business. This allows further decisions to be made with respect to contingency/risk, accuracy, timeliness and cost of the information
- **Enforce data ownership** and accountability to ensure the integrity and quality of the data.



## How Adaptive Metadata Manager works

### Harvesting & Integration

Adaptive MM provides a wide array of integration options with most popular database management systems, data modeling and system modeling tools – or even home-grown systems based on Microsoft® Office Excel or Microsoft® Office Access. It uses meta-modeling standards to import, transform and export metadata with tools and metadata sources. Adaptive MM also uses a transformation technology based on the Meta Integration® Model Bridge to import information from many 3<sup>rd</sup> party tools and data sources using their native format.

Some of the tools and data sources supported include:

- Relational database schemas
- XML Schemas
- COBOL Copybook files
- Data Modeling tools
- Any UML® or CWM® compliant tool
- Business Intelligence tools
- IDEF1X tools
- OLAP tools

Adaptive MM can capture the data transformations that take place – for example, via data marts or data warehouses and through to user screens and reports – through its market-leading support for the Common Warehouse Metamodel (CWM) standard from The Object Management Group® (OMG®). Support for this standard also enables mapping from business (logical) definitions through to the technical database definitions, so that understanding of flows can be translated back to business terms for business users.

#### **Automated Workflow**

Adaptive MM provides an automated and extensible workflow which manages the flow of changes through the different metadata roles, and controls visibility to changes until they are approved. The workflow is controlled by item type specific state transition models that define lifecycle states, events and transitions.

#### **Collaboration**

Adaptive MM provides a complete collaborative environment for both technical and business people to work together to identify and address issues:

- **Threaded discussion groups** can be established and run on any metadata element
- Recorded **assessments** for any metadata element for review and auditing purposes
- **Event Subscriptions** and **automatic notification** using corporate email system.

#### **Versioning and Comparative Analysis**

Adaptive MM Repository provides versioning and configuration management capabilities that track changes at the fine-grained object level. Workspace configurations can be defined at the level of granularity required by the user and full support for version branching and merging is provided. A flexible context and release mechanism controls which versions are accessed, without the user needing to be aware of versioning. This enables users to work on specific change tasks within a workspace that will not be visible to the general users until the task is completed, approved and merged into the main branch.

Data models or schemas that have multiple sources can be imported into different workspaces and then comparisons can be performed across the workspaces to understand what the differences are. This powerful comparative analysis capability is essential for managing metadata changes in a complex real-world environment.

#### **Analysis and Reporting**

Adaptive MM provides dynamic, on demand display of reports in the web browser window to support analysis

and validation. In addition, information can be extracted from the repository and populated into a simplified set of relational tables. These tables can be accessed through a direct SQL interface or 3<sup>rd</sup> party reporting tools such as Business Objects™, Microsoft® Office Excel and the Eclipse-based Business Intelligence and Reporting Tools (BIRT) to produce custom reports. This capability can also be used as a “metadata mart” by performing multiple extracts for different groups, at convenient (off peak) times, to populate their own database (metadata mart), on which each group can use their reporting tool of choice.

#### **Feature Summary**

- **Role-based user interface** including navigation maps, views, item types and classification schemas tailored to the needs of each metadata role
- Explicit and **extensible data stewardship** and **stakeholder roles**, and enforcement of access control policies
- **Automated workflow** for change approval enforces metadata policies and governance
- **Harvesting** capabilities enable automatic capture and integration of logical and physical data models from data modeling tools, database schemes from databases, XML Schemas and data definitions from other tools and sources
- Manage logical and physical data models and definitions in an enterprise-scale repository supporting **versioning** and **configuration management**
- Capture **complete data lineage** including: ETL tools, adapters, application-to-application, services, file transfer, reports, and manual data entry/review
- Dynamic **graphical visualization of complex data lineage** relationships to quickly see the big picture as well as focus on specific details
- **Link data elements** to software – including data access and applications, database deployment, processes, and KPIs (where the data is part of a measure)
- Capture **data quality** – rules, targets and actuals

#### **Benefits**

- A comprehensive **understanding of metadata lineage**, using a powerful view mechanism to allow aggregated visualization of the lineage of data across disparate systems, applications, databases and tools
- Discover and **manage “collisions”** - inconsistencies of metadata from multiple data sources
- **Traceability from taxonomies** of business concepts and terms to logical data models, and physical data schemas
- Workflows to **automate the lifecycle of metadata** to engage the appropriate data stewards and stakeholders at each point
- Enable business users to **understand** what the **data sources** are for information in end user reports
- Understand the **impact of changing a data element** – what other data elements, reports and queries are affected
- **Identify opportunities for reuse** of data assets through sophisticated search mechanisms and queries that leverage logical traceability and data lineage relationships and dynamic result filtering based on classification, ownership, modification date and lifecycle state
- Effective **management of purchased data feeds** by discovering what information is needed, how it is used, and where there are redundancies in data sources.