

ENTERPRISE
DATA MODELING
FOR BUSINESS
INTELLIGENCE
APPLICATIONS

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INTRODUCTION

“Data Modeling is a key contributor to enterprise Metadata Management which in turn provides a broad support to effective Data Management.” - Trends in Data Management, 2019

In a recent data management trends report, 70% of respondents feel that their organization considers data a strategic asset. No matter where your data came from -- legacy systems or acquisitions and mergers -- there are core functions that can help break down the data silos and better inform business decisions by utilizing data as a strategic asset.

Executing an effective business intelligence workflow requires effective data management. You need to know where you've been and what you have to know where you're going. And in reality, most organizations don't do a good job of utilizing their data because they don't know what their data means.

Ideally, a data architect with a focus on business intelligence will start with data models to document what data the organization has, where it resides, how it's used, and who owns it to generate accurate analytics. It's virtually impossible to navigate the complexities of the data landscape if you don't have a data modeling tool to create representations that everyone can understand.



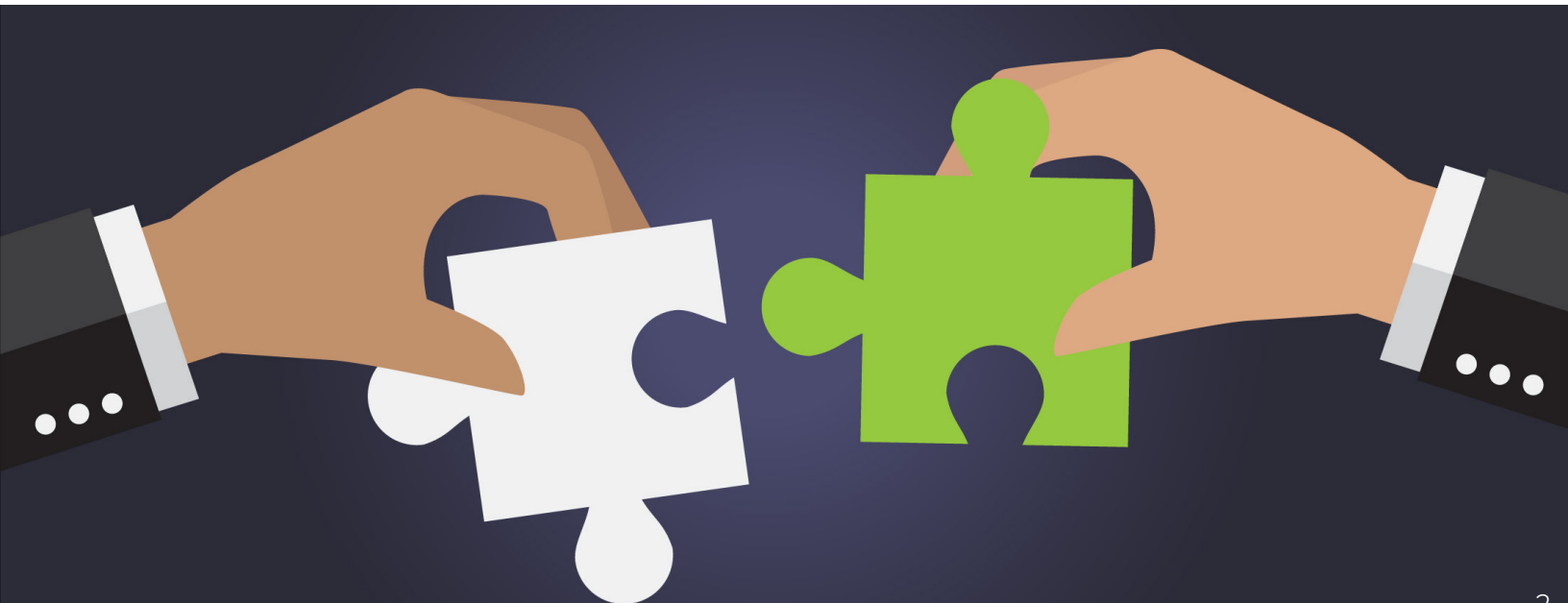
DATA MODELING IN THE ENTERPRISE

Even with less than half of the respondents reporting definitive engagement in a data modeling solution, the top use cases in enterprise environments for data modeling continue to trend upwards. Focus for organizations is increasingly around metadata, data governance, and data lineage -- the core functions of developing an effective business intelligence environment.

Businesses are seeing an increased need for business process models and system architecture diagrams, with a requirement for improved data flow that is aligned with business objectives rising more than 50%. Data modeling provides the foundation for processing data through an organization with usability in mind.

Frequently the sources of data in an organization are unclear. With effective data modeling, all organizational data can be categorized and structured with applied metadata. This allows users to manipulate data in the data warehouse in ways that apply to business need and bring value to business decisions.

By defining metadata characteristics and applying them as new information enters the organization, data lineage and governance can be maintained moving forward.



DATA MODELING FUNCTIONS FOR BUSINESS INTELLIGENCE

Sourcing

Data modeling initiates the process of identifying the diverse data sources and building a picture of your operational data. What data assets do you have? What does that data mean? What is its value to the analytics initiative? Understanding the quality and source of data helps inform definitions of context, no matter the data pipeline, to define the structure of outputs using visual data representation.

Preparation

Data modeling helps design a warehouse to include relevant data by creating an efficient and performant structure for the data warehouse that maps to the appropriate schema. With modeling, data is broken down into multiple submodels, which are then weaved into data warehouse tables, making documentation easier to keep up with as the organization matures. In return, you will facilitate better communication, which means better collaboration and ultimately better results.

Data Mapping

Helping to document mappings and transformation logic for ETL to the warehouse, as well as helping to understand any existing warehouse structure and meaning, will further interlace the schema into the data warehouse and make relevant data more readily retrievable in context, as needed -- building a data catalog where assets are modeled to understand their content.

Data Lineage

In the context of the enterprise data landscape, data lineage is critical in mapping data architecture and effectively rounds out the knowledge about data sources, connectivity, and flow to help data stewards in enforcing compliance with data policies and delivering governance. Models depict the relationships, while lineage shows how data travels through the business, giving you the background to understand the relevance of the data being used for business decisions.

Socialization

Having soundly structured data allows for exploration of available data by asset or by information content by browsing the Business Glossary, making data more accessible and understood. Ease of use and speed of access correlate directly to the agility of the enterprise by virtue of having visibility for both technical and business stakeholders into the way that information is defined, and how it flows across the extended information enterprise.

Collaboration

Modeling classifies data assets for inclusion in the warehouse, giving greater understanding and context to enterprise data through team collaboration on an enterprise glossary of business definitions. Data modeling and lineage support a variety of key operational data stewardship activities to attribute data in context and manage the governance characteristics of data in motion across the team. With the ability to cooperate on glossaries, terms, and metadata, the entire team can ensure they are using a common vocabulary that facilitates communication and improves data quality across the organization.

VALUE OF DATA MODELING FOR BUSINESS INTELLIGENCE

Better Definitions

Creating concrete definitions of business data requirements starts early in the development process and modeling can correct any changes equally early. A good data model will improve data quality and reduce development costs, minimizing unknown or unanticipated requirements during the development process.

Reduced Maintenance

Conservative estimates assert that maintenance costs account for 50-80% of development budget expenditures. The earlier that errors are caught and future corrections can be anticipated, the greater the budgetary savings, including planning for future deployments.

Accelerated Development

By deploying a functional data model, developers are able to spend valuable time on forward-looking projects core to improving business processes, rather than error correction and ongoing data mapping due to a lack of automated controls. Using consistent schema and structures enables faster development and improved data quality across applications.

WORK WITH A PARTNER

Working with a solution provider offers capabilities not native to the data landscape. Inherently, implementing a modeling solution has tremendous ROI. However, managing the environmental complexities of various data sources and defining data models can be cumbersome and costly.

A majority of organizations report that determining an enterprise strategy is their greatest challenge in facilitating and implementing new data management practices. A solution provider can help demystify the process of developing optimal data requirements and definitions -- offering a starting point for developing a strategy to focus on the rules that govern relationships across the elements.

ER/STUDIO FOR BUSINESS INTELLIGENCE

In the enterprise, data is the competitive advantage. Through implementing an effective data modeling solution, businesses save time, money, and resources by optimizing the utilization of the data they already have. Understanding a business's data provides the insights to develop and inform organizational strategy.

You already have the data. The next step is working with a partner who can make sense of that data and turn it into actionable insights to guide business decisions.

ER/Studio will help you define and standardize on the information that your analysts need. It can catalog available data assets and classify them against that information model to help locate required information. It can then help you design the warehouse and ETL operations to make that data available to BI tools. Throughout this process, knowledge can be published to the wider organization to understand and collaborate on it.

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