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Dimensional Excellence Build it or Buy it?

Executive Overview

Large organizations need to manage and align the dimensions that classify and categorize their operational, transactional and analytical systems. Without alignment, analysis and reporting cannot be reconciled with confidence across the enterprise. Deploying an effective enterprise dimension management system is a challenging process with serious risks. Such a system must be scalable and flexible and should meet current and perpetually evolving future business requirements. Those future requirements should be assimilated through simple configuration, rather than requiring complex custom coding. The true total cost of ownership favors the adoption of a proven, configurable, best-of-breed tool for which the costs and implementation timescales are predictable, and through which risks are minimized.

Dimensional Excellence

Almost all enterprise systems provide individual functionality to create and update the dimensions that they consume, but these tools are not designed to align dimensions across a heterogeneous systems environment, and in many cases they are intended for use only by seasoned IT veterans.

Dimensional Excellence describes the goal of an enterprise to effectively and efficiently manage its enterprise dimensions as core assets across multiple systems. Since these dimensions are carefully crafted to describe how an organization chooses to classify and to analyze ‘value’, it seems reasonable to assume that an enterprise should ensure that these dimensions are aligned, accurate, and leveraged to their fullest extent. Usually, this includes providing a single ‘system of entry’ and ‘system of record’ in which business experts are responsible for the maintenance of their own hierarchies.

What are enterprise dimensions?

Enterprise dimensions classify transactional and analytical data. They reflect how an enterprise measures its value, and are usually shared across multiple business functions and systems. They often include multiple alternate roll-up hierarchies for a single dimension.

Examples of enterprise dimensions might be:

- Charts of accounts
- Organization or cost centre structures
- Legal entity & ownership hierarchies
- Product hierarchies

Assessing the Maturity of Dimension Management Processes

Before embarking on Dimensional Excellence initiatives, an organization should first reach an objective assessment of its current capabilities, and its goals and justifications for improving those capabilities. To aid this assessment process Oracle has developed a Dimension Management Maturity Model (DM3) that helps define the capabilities of an organization to manage its enterprise dimensions. A primary goal of the DM3 is to facilitate objective discussions between business and IT experts within

What is Data Governance?

WhatIs.com refers to Data Governance as “... the overall management of the availability, usability, integrity, and security of the data employed in an enterprise. A sound data governance program includes a governing body or council, a defined set of procedures, and a plan to execute those procedures.”

an enterprise. The highest level of maturity in this model requires effective data governance, with dimension maintenance delegated to the relevant business experts. An effective enterprise dimension management solution – whether built in-house or purchased - should support moves toward achieving this level of maturity.

DIMENSION MANAGEMENT MATURITY MODEL					
Characteristics	1 - Scattered	2 - Home-made	3 - Centralized	4 - Aligned	5 - Governed
Maintenance process	Scattered, local processes for each instance of each application	<i>Ad hoc</i> spreadsheets and MS Access DBs for specific domains	Central repositories force synchronization for groups of systems	Central repositories recognize varied needs of participating systems	Unified, controlled environment for all changes
Maintenance responsibility	IT, for each silo application	Business users, but IT needed to integrate changes.	Technical administrators (business or IT)	Central functions (eg. Corporate Finance)	Local business experts ('data stewards')
Dimension alignment	Mis-alignments surface as reporting inconsistencies	Some point-to-point integration using 'black box' ETL	Complex point-to-point integrations	Central integration 'hub' using 'open' ETL processes	Single 'system of entry' ensures alignment
Data governance	Not possible	Limited governance for some subject areas	Centralized control enforced by tools	Central functions apply governance	Governance delegated to business experts
Workflow processes	No consistent workflows	Inconsistent workflow for each solution	Multi-step approval processes	Complex workflows to ensure data quality	Simplified request & approval mechanism
Indicators	<ul style="list-style-type: none"> • Fear of regulatory non-compliance • Duplicated effort • Frequent reporting reconciliation issues • Responsibility for changes unclear • <i>Ad hoc</i> processes to support mergers 	<ul style="list-style-type: none"> • Duplicated effort, but business experts involved • Reporting inconsistencies & reconciliation issues • Simple audit trails possible 	<ul style="list-style-type: none"> • Some duplicate maintenance (eg. between EPM & ERP systems) • Local business rules enforced • Compliance enforced by complex processes 	<ul style="list-style-type: none"> • Centralized & complex workflows lengthen close cycles • Automated Integration with major enterprise systems • Rapid assimilation of acquisitions 	<ul style="list-style-type: none"> • Enterprise-wide alignment • Intrinsic compliance • Fully devolved governance • Full audit trails • Business rules enforced automatically

How to Achieve Dimensional Excellence

There are three main routes by which enterprise dimensions can be aligned:

- **Enforce:** Business processes can be wrapped around existing manual update procedures to ensure that changes to critical dimensions are synchronized across multiple applications.
- **Build:** An organization's IT department may choose to build a bespoke application to maintain, synchronize and deploy enterprise dimensions.
- **Buy:** A tool can be purchased and configured to align dimensions across participating systems.

Of course, many organizations grow their processes and systems organically, so a hybrid approach that combines some (or all) of the above routes is a temptation.

Enforce

Striving for dimensional excellence through the enforcement of tight business process may achieve short-term gains, but many desirable outcomes (such as complete audit trails, versioning models, security, and change control) will remain elusive. Many people are involved in a manual dimension maintenance process, and there is limited ability to roll-back a set of changes, or quickly to reconcile inconsistencies in critical dimensions. In order to be even partially effective, manual processes often require burdensome workflow processes.

Build

Building an in-house dimension management utility often seems achievable and cost-effective at first glance. But critical components of a scalable, enterprise-wide dimension management solution can require a complex design and programming effort:

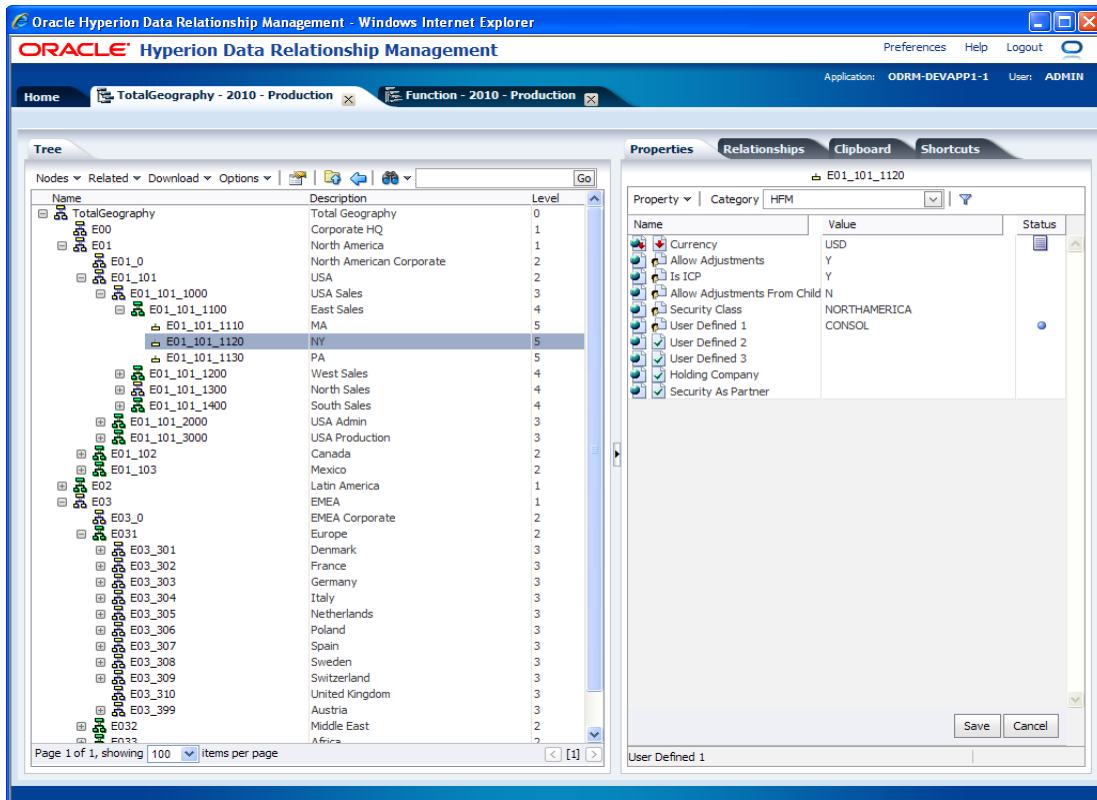
- User interfaces should be designed for use by business experts, not IT gurus.
- The technical solution must be configurable to respond to dynamic business rules and interface requirements. If business rules and interface requirements are hard-coded in a solution (often a tempting, easier development route), then there will be continued ongoing IT expense as business requirements evolve and change. Small changes to hard-coded business rules may trigger a complex set of test and QA procedures that may frustrate efforts to shorten financial close cycles.
- As an enterprise evolves there will be a need to deploy aligned enterprise dimensions across new applications. This may require additional custom coding for an in-house solution, coupled with additional test and QA procedures.
- As mergers and acquisitions are completed, the quirks and business rules of the acquired organization will need to be identified and assimilated into the dimension management utility. This may trigger design reviews and extensive additional custom coding.

Buy

Purchasing and configuring a flexible dimension management tool (such as Oracle Hyperion Data Relationship Management) has an unambiguous, up-front cost. As a mature product that has been in the market for over 10 years (with over 250 customers), the fundamental dimension management functionality is included as a set of core features. Other business requirements can be accomplished through configuration of (rather than via customization). ‘Out of the box’ functionality includes:

- Rich, granular security model.
- Versioning models, change control and audit trails.
- Native support for multiple alternate roll-up structures.
- Sophisticated formula engine for derived attributes.
- Automatic enforcement of complex business rules.
- Query and comparison engine (to support analysis and blending of hierarchies during M&A activity).

- Support for cross-dimensional mappings.
- Support for a wide range of interface formats, including the automated generation of balanced trees or generational structures from simple, ragged hierarchies.
- Integration with enterprise workflow tools.
- Flexible data model that is domain and technology agnostic.



Evaluating the Build or Buy Choice

As in any software evaluation, choices must be made (often subjective) based upon how well each option matches the current and future business requirements, and upon the total cost of ownership (TCO) of each option. Secondary decision factors usually include a risk analysis upon the probability of success or failure of the chosen option, and the potential impact of a failed or incomplete implementation upon critical business processes.

Dynamic Business Requirements

For an enterprise dimension management tool, it is normal for the business requirements to be in perpetual flux. For example, following the acquisition of a smaller company, a need may be identified for new business rules to help consolidate two charts of accounts. So business users need to be able to

define and maintain those rules without resorting to custom coding and the delay and costs involved. An important evaluation criterion should be the ease of configuration of a tool to support dynamic, perpetually evolving rules.

Extensibility & Scalability

It is likely easier and faster to design and build a system in which all business requirements are hard-coded. That said, although an extensible, scalable, and parameter-driven system is initially more complex (and expensive) to design and to implement, the ongoing maintenance and enhancement costs will be much lower and predictable. Development costs for a configurable, extensible in-house dimension management application can easily exceed a million dollars. By comparison, purchased tools have an attractive and predictable TCO compared to extensive (and ongoing) in-house development efforts.

Scope Creep

The business experts may not approach the concepts of Enterprise Dimension Management holistically. Their requirements may blossom over time, typically starting from a core set of simple requirements. For example, the desire for better mapping tools (to map one G/L account to another, or to automatically calculate the appropriate parent account for a new G/L account) will initially appear to be most appropriately built as an in-house development effort. But such requirements are often just an indicator of a broader desire for a complete dimension management solution, for which the full in-house development costs may be an order of magnitude higher. When the complete business requirements eventually emerge – perhaps several years later – they may be inconsistent with the foundational design decisions made for the first phase of an in-house development effort.

Risks

The risks associated with an in-house development effort are often underestimated:

- Basic risks include the possibility of exceeding development budgets as requirements evolve, and of missing go-live deadlines.
- More serious risks include the possibility of abandoning development efforts after hidden complexities emerge. Implementation efforts expended up to this point will have been wasted, and other initiatives that were dependent upon the home-grown application may be put at risk.
- By purchasing a tool, these risks are minimized. The functional capabilities of the chosen tool are clearly defined. For mature products, best practices, references, and third-party partner support are available accurately to predict the costs and timescales for configuration and implementation.

Indicators of a Complex Dimension Management Environment

Every organization has a unique character, but there are some common indicators of a need for higher maturity for dimension management, for which a purchased solution offers a lower risk and a predictable TCO:

- For highly regulated industries, such as financial services or telecoms, critical hierarchies must be 100% correct and aligned across multiple technology platforms, in order to drive accurate, regulatory reporting.
- Acquisitive organizations have a regular need to integrate charts of accounts, cost centers, organizational hierarchies and legal entity structures from acquired or merged companies.
- With complex heterogeneous technology infrastructures there is usually a need to share common dimensions across diverse platforms, each with their own restrictions.
- Multi-national enterprises are characterized by a mix of group-level and local systems, supporting multiple global reporting requirements. Subsets and supersets of core dimensions need to be aligned on a regular basis.

Conclusion

Enterprise dimension management is a core, mission-critical process within and across any large organization. In-house development efforts for a solution are rarely cost-effective or scalable. Risks to the business are increased. Purchasing a mature, stable product such as Oracle Hyperion Data Relationship Management minimizes risk at a predictable total cost of ownership, and provides a scalable, cross-platform foundation.



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