



CASE STUDY

Data Warehouse Accelerates Compliance, Powers Business Intelligence at Insurance Company

Challenges

An insurance company began building a data warehouse as the keystone in its MAR compliance program. After a rocky year and a half, the effort completely stalled and the company retained Princeton Consultants to get it back on track.

In reviewing the partially built data warehouse, Princeton Consultants found that the design would make it difficult for business users to create certain key reports. Furthermore, the users would probably never gain confidence in some crucial data held in the warehouse. These outcomes flowed from a decision to emulate the source systems' data structures.

Another, more critical, challenge emerged. Enterprise data warehouse construction is always complicated by unanticipated obstacles, and there needs to be a methodical approach to contingencies, or project failure is a real possibility. A new design and plan were required.

Design Approach

Companies across all industries build data warehouses for a common set of reasons. Data control and accuracy were the main drivers for our client, in this case prompted by a MAR compliance program. Princeton Consultants designed a data warehouse to enable control and accuracy, and to preclude severable notable business problems.

MAR compliance is at risk when data inaccuracies have a material effect on financial reporting. Such inaccuracies accumulate when there is poorly documented data dispersed among various source systems, and lack of central business oversight over changes to these systems.

Even if problems do not rise to that level, inefficiencies clog operations due to repetitive, manual corrections to the data, the involvement of IT in routine reporting, and performance hits to operational systems at month-end and other milestones. A final, strategic risk is the inability to implement a modern business intelligence platform and to scale up analytics.

Princeton Consultants follows Ralph Kimball's well established methodology, shaping requirements, the data model, and the individual data marts comprising the warehouse around

business processes. The guiding principle is that the end user is the business user, who should find it easy to use the warehouse. The design that propels this approach is organization of the data by facts, the quantitative measurements of business operations and outputs, and dimensions, the slices used to produce those measurements. For example, annual revenue is a fact, but it is desirable to slice it by quarter, month, or day, by region, sales channel, store, customer, or other dimensions.

Properly executed, the dimensional approach to data warehousing results in fast queries and a comfortable analytical environment for business users. After its review, Princeton Consultants reset the client's approach to the data model, providing a solid foundation from which to execute future project milestones.

Planning Approach

Enterprise projects are notoriously difficult to bring in on time and on budget. To obtain solid data for estimates, Princeton Consultants examines areas such as:

- Number of sources. A successful business will expand, requiring more automation and greater storage. Data sources proliferate until, typically, an executive compares the advantage of combining data sources to the risks and inefficiencies of continuing as-is. Here is the challenge, however: the more sources, the more required repetitions of the complex steps of ETL.
- Heterogeneity of systems. As businesses grow, they invest in more and more technology. Some systems will remain in place for decades, while others will represent the latest and greatest. An enterprise warehouse may have to accommodate different technologies and wildly different design principles.
- Inconsistent levels of maturity. Individual departments often build their own technical solutions to operational needs. Important data is commonly lodged in databases that are not technically suited to serving as enterprise-strength sources for a daily ETL process. Discovery of such sources is inevitable and, at the same time, difficult to plan for without simply adding large amounts of contingency time to the project plan.
- Faulty and inadequate data. The upside to creating a single data model for enterprise data is a revolution in reporting and analytical capabilities, but the downside is that a lot of faulty data will be uncovered and need to be fixed.
- Data definitions. It is vital to involve business stakeholders and SMEs in a warehouse project that they can support by validating business rules, helping project team members to understand the reporting needs, and rigorously defining existing and new data. Initially, there can be the misconception that data flowing through operations is settled, agreed, and understood by all. Lengthy deliberations may be required.

Princeton Consultants' initial project-sizing assessments complemented the more linear estimates, based on items such as counting the number of source fields to be modeled, and they informed the architecture and led to conclusive delivery timeframes.

Execution Approach

Princeton Consultants elected to release a series of ready-to-use datamarts—the total of which comprise the warehouse—at regular intervals, rather than build the whole warehouse for release at the end of the project. The first two datamarts, which contained the core claims, premium, and lives data, were in production and in use by the business only four months after project initiation.

Princeton Consultants employs a rapid-delivery model, releasing usable products incrementally to the business over the lifespan of the build and implementation—an approach that is compatible with the Kimball architecture. In addition, we collaborate with our end users throughout the project so that they have an ongoing hand in shaping the outcome and develop expectations in line with the project's scope and goals.

Results

Business users now easily find the data that they need and create reports with confidence, due to the re-architecture of key tables in the data model. The insurance company is preparing a new BI platform that gives leadership the ability to create custom dashboards. A cornerstone of the critical MAR compliance effort is in place. The path is set for a new, market-leading customer report, and the company is preparing additional valued-added business initiatives.

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About Princeton Consultants

Princeton Consultants is an information technology and management consulting firm with offices in Princeton, NJ and New York, NY. Founded in 1980, the firm has delivered more than 1,500 projects for many of the world's largest, most successful and innovative companies.