Design Tip #155 Going Agile? Start with the Bus Matrix

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Many organizations are embracing agile development techniques for their DW/BI implementations. While we strongly concur with agile's focus on business collaboration to deliver value via incremental initiatives, we've also witnessed agile's "dark side." Some teams get myopically focused on a narrowly-defined set of business requirements. They extract a limited amount of source data to develop a point solution in a vacuum. The resultant standalone solution can't be leveraged by other groups and/or integrated with other analytics. The agile deliverable may have been built quickly, so it's deemed a success. But when organizations lift their heads several years down the agile road, they often discover a non-architected hodgepodge of stovepipe data marts. The agile approach promises to reduce cost (and risk), but some organizations end up spending more on redundant, isolated efforts, coupled with the ongoing cost of fragmented decision-making based on inconsistent data.

It's no surprise that a common criticism of the agile approaches for DW/BI development is the lack of planning and architecture, coupled with ongoing governance challenges. We believe the enterprise data warehouse bus matrix (described in our article "The Matrix: Revisited") is a powerful tool to address these shortcomings. The bus matrix provides a master plan for agile development, plus it identifies the reusable common descriptive dimensions that provide both data consistency and reduced time-to-market delivery in the long run.

With the right mix of business and IT stakeholders in a room, along with a skilled facilitator, the bus matrix can be produced in relatively short order (measured in days, not weeks). Drafting the bus matrix depends on a solid understanding of the business's needs. Collaboration is critical to identifying the business's core processes. It's a matter of getting the team members to visualize the key measurement events needed for analyses. Involving business representatives and subject matter experts will ensure the team isn't paralyzed by this task. You'll likely discover that multiple business areas or departments are interested the same fundamental business processes. As the business is brainstorming the list of measurement events, IT representatives are bringing a dose of reality about the available operational source data and any known limitations.

Once the matrix has been drafted, the team can then adopt agile development techniques to bring it to life. Business and IT management need to identify the single business process matrix row that's both a high priority for the business, and highly feasible from a technical perspective. Focusing on just one matrix row minimizes the risk of signing up for an overly ambitious implementation. Most implementation risk comes from biting off too much ETL system design and development; focusing on a single business process, typically captured by a single operational source system, reduces this risk. Incremental development can produce the descriptive dimensions associated with the selected matrix row until sufficient functionality is available and then the dimensional model is released to the business community, as we describe in Design Tip #135: Conformed Dimensions as the Foundation for Agile Date Warehousing.