A Functional Approach to Enterprise Data Management in Business Warehouse

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A Functional Approach to Enterprise Data Management in Business Warehouse

Pat's specific knowledge of BW is related to a broader vision he has for Enterprise Data Management. So, he has agreed to explain how he conceptualizes the functioning of BW from the “top down,” starting with the overall principles of data architecture, and eventually honing in on how E

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  - How is our data being utilized across these systems?
  - Do we make an effort to reduce redundancy across platforms?

- Our primary concern, Data Warehousing, or precisely, SAP BW
  - How does BW fit into the data architecture?
  - How do we feed data into our BW Data Warehouse layer?
  - How do we make information available within our data architecture?
  - Have we identified our integration points across the data architecture?

We should not be thinking in terms of reporting and/or end user requirements. We are still concentrating our efforts at a much higher level. We want the environment and the high level requirements, such as described above, to drive our decisions as to where data will be stored and retrieved. In terms of reporting we should look to define reports as being operational or analytical in nature. We can't make decisions regarding report derivation based on where the data may be located within the model—meaning just because one tool such as an operational/transactional tool has the data within its database doesn't mean we will look for that system to deliver the report. In reality, we will consider the type of report required, user access to the tool set, and the level of end-user retrieving the report. Lastly, we might consider where the data may be sourced. However, it is more likely we will be considering how to get the data into the correctly identified system in order to develop the reporting and analysis. Going forward, we may begin to consider identifying the subject area definition of our complete dataset. This may seem like an extraordinary task, however, in reality it should be quite painless.

A crucial point in subject area definition is typically reached in the blueprint and design phase of a given project. It is at this point that we can make great progress in defining the internal working data model in BW that allows freedom of integration in the current project as well as in later projects. Using the considerations mentioned above, as well as best practices established in creating data warehouses, should yield a comprehensive design approach that will look somewhat like the following outline.

- Multi-layer data warehouse model within BW

  - Data staging layer that includes a somewhat normalized view of our data.
  - Operational Layer that includes normalized detail data.
  - Analytical layer that includes highly normalized summary data

While this is a simple theoretical model, I have used a very similar approach with great success on several projects. While this approach does require a certain amount of customization, it more than pays for itself when it's extended to other areas of the project or corporate entity. This approach also yields a more manageable system landscape by abstracting the different functional roles of data warehousing within the confines of their respective layers. The end result? An increase in the number of prospective integration points and a lowering of the maintenance overhead.

Data Subject Areas

At this point, we may begin to consider partitioning our data into subject areas. This will greatly enhance our perspective of what our architecture may resemble after the initial design. This can easily be done by considering our functional areas in either R/3 or our legacy transactional system. Breaking these functional areas down by actual subjects is the final step in building the subject area definition. These definitions can then be circulated amongst the stakeholders and system ownership to settle expectations and confirm conceptual design structure. Figure 4

identifies a fictional definition of subject areas resembling a manufacturing, sales, and invoicing environment. Keep in mind that there could be more or fewer subject areas for any specific data environment or architecture and that Figure 4 merely reflects the theoretical aspect of subject area definition. The main point here is to create this definition using real subject areas while considering how they will fit together in your overall environment as well as BW. Once the subject areas are in place, we may paint a more functional picture by detailing the functional data considerations within each subject area.

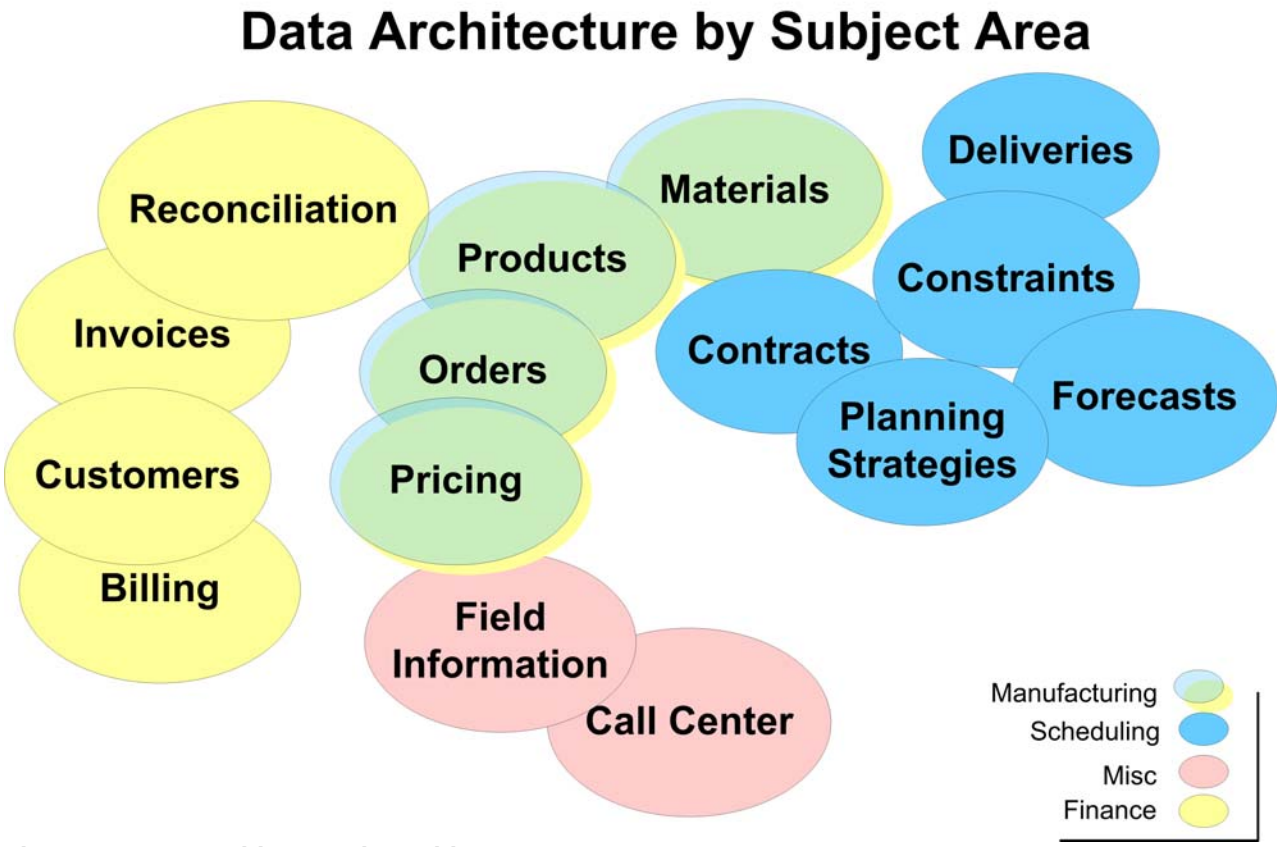

Figure 4: Data Architecture by Subject Area

As you may notice from Figure 4, there will be some degree of overlap. This overlap is expected and merely represents the actual overlap in the data environment as it relates to the organization. The actual exercise of subject area definition and its overlap may bring a difference of perspective regarding your actual data and the systems of origin. Keeping those concepts in mind will allow your organization to refine the subject area definitions to the point they can be used to construct the conceptual data model for your overall data architecture.

The subject area map and subsequent definition of functional characteristics within the subject area provide an immeasurable amount of worth when trying to understand the relationship of the different data points coming together in your project. When properly defined, it also provides the how and why. In my last project, this well-detailed subject area map made its way outside the confines of our project and wound up in the hands of the CEO and CIO. Eventually, the subject area map was incorporated into several executive steering presentations. To describe this as an invaluable tool is almost an understatement; from my perspective it is absolutely required.