Report_2 Immon vs. Kimball

Introduction:

Data warehouse is the data repository of an organization where their data is stored in a structured and organized manner. It communicates the picture of the organization and fulfills the need of the whole organization and not just an individual. Organizations widely use the data warehouses to perform analytics for strategic business decisions and support. If the data is not structured it would be difficult to make any sense out of it and it is of not much use. Therefore, Structuring the data is very important which is done by data modelling followed by appropriate data architecture methods. [1].The two prominent and widely used data architectures to build, design and implement a data warehouse are inmon's approach and Kimball's approach. The two approaches are summarized as follows:

Immon's Approach:

The of Immon's approach is to centralize the data from all the sources. Thus, it is also known as the Centralized approach or the top down approach. In this approach, the data is captured from different source systems followed by preprocessing steps of cleansing, standardizing and formatting the data to a structured form. Finally, the organized data is merged to the Data warehouse Repository. Further the Data warehouse is subdivided into data-marts which are specific to a business purpose. Depending on the scope of a business problem, the user can easily access the data through a Data-mart for further analytical purposes to make business decisions.

Kimball's Approach:

Also known as the bottom up approach, this approach starts with creating the Data-marts first to satisfy the analytical needs of a specific department to answer specific key business questions in the organization. This data marts then follows the staging area before ETL. The next step is integration of these individual data-marts for creation of a Data warehouse consisting of Dimensional Model with Fact tables and Dimension tables, also known as the star schema. The purpose of Dimension Modelling is to provide easy access to the end-users. Kimball defined 'Conformed Dimensions' as the key dimensions that are usable for different facts which are created only once and can be reused by multiple facts thus, standardizing the process across all the facts. Thus, conformed dimensions solve the granularity differences in the fact tables.

This paper outlines the difference and similarities between the two methods mentioned above. It includes a critique and discussion on an article based on the Immon vs Kimball debate concluded by best approach in my opinion based on the entire study.

Differences:

In addition to the respective approaches top-down and bottom-up approaches as we saw above, Immon and Kimball Data architecture methods have various other key differences which are significant to consider when choosing either of the methods for Data warehousing. The immon's approach is quite complex whereas Kimball's approach is simple. Both approaches differ in data modelling procedures where immon's approach is data driven or subject oriented and Kimball's approach is focused on a business process aiming quick delivery of results to end-users. This also implies that immon's approach is suited for a large team of specialist whereas Kimball's approach favors a small team or a general skilled staff. Speaking of time and cost, top-down approach takes shorter time for initial set-up while bottom-up approach takes longer time at the start but is comparatively easier. However, maintaining top-down data warehouse is easier than the bottom up approach which might be subject to regular updates. The initial cost for immon's approach is high but the cost decreases for further steps and for maintenance. On the other hand, the initial cost for Kimball's approach is low but the cost remains consistent for further steps and maintenance.

Similarities:

Both inmon and Kimball agree on centralizing the data at a point of time and support creating data marts to meet business requirements. In this process, both the approaches required staging and ETL. Also, both Methods give importance to the Time variable.

Article:

Best article: Nagesh V. Anupindi (2005), Immon vs Kimball – An Analysis, Information Technology books.

I liked this article the most because it compares both the approaches effectively in a clear and concise manner. The authors of this article have given compelling comparative analysis about the two approaches which includes methodology, structures and content which emphasizes on similarities, differences and common goal of both the methods in a very organized manner. It also gives historical practical scenarios of its application in the industry and real-world mentioning review statements about failures of implementing immon's approach. It shortly describes about the current challenges faced and the real problem to be solved shedding light on other overlooked aspects of Data warehousing like Process and Data Quality. Finally, after comparative analysis the authors have put forth the best approach in their opinion to be the Kimball's approach because of its success in practical implementation, in a very indirect and mild way. However, this article fails to discuss about the weakness of Kimball's approach like the redundancy problems and the likeliness of departments creating their individual solutions and not for the enterprise.

My Opinion:

Best approach: Kimball's Approach.

Factors I considered for making a choice are time, cost, flexibility, successful practical implementation and quick precise results for decision support. Setting-up data warehouse using immon's approach is time-consuming and expensive. This is inconvenient in today's fast-moving technology world to make real-time quick strategic business decisions and worse if the requirement is urgent. Also, Top-down method is comparatively rigid, and the lack of flexibility would add on to time and cost or even failure to come at a solution. Besides, Kimball's approach provides easy access to the users to query in the data and get quick responses to make business decisions. Also, Kimball's approach has a history of successful practical implementation in the real-world industry unlike the complexities in the immon's approach.

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