

Practical uses for a Data Warehouse: Part Three Problem Solving

Sometimes it is a good idea to revisit your basic assumptions. So often, we blithely use terms, words, and acronyms without acknowledging the underlying ORIGINAL meaning. In George Orwell's novel entitled '1984', Big Brother (a behind the scenes evil power that controlled everything) was deliberately re-defining terms/words but with completely new and dissimilar meanings to suit his evil purposes. For example, an *execution* could be redefined as a *reassignment*. Today, we might call this Political Correctness (PC) carried to the extreme. Not every instance of re-definition has an evil intent. Advertising would be a less benign and possibly humorous example.

However, in business, science, and legal environments a consistent definition for terms/words is highly valued. In recent memory, several firms (Enron, Worldcom, and Arthur Andersen, among many) found themselves in serious legal and financial trouble because of their fast and loose re-definition of common business and legal terms. To carry the point a little further, there are things that are expected to have consistent values/calculations. For example, 1999 3rd Quarter Sales for the Clothing Division should be the same no matter who ran the report and the mathematical term π is always equal to 3.14.

So, one of the prime objectives of a data warehouse is to reconcile, document and present corporate data/information in a consistent manner. Why is this important? The consumers of this data/information/reports must trust what they are seeing. The another option is to deliberately re-define terms/words....., refer to Big Brother above. There are real consequences for lying. Many company officials now face subpoenas from Security and Exchange Commission (SEC) and worse!

Moreover, how can a manager do their job if the 'measure' of their success is constantly changing by definition? We would however, expect the value associated with this measure to change over time. For example, Sales for the Clothing Division may change period to period, but the Quarterly Sales amount is calculated the same way (by definition), quarter-to-quarter, and year-to-year.

Now, this brings us to the point of this article. One very practical use for a data warehouse is to assist a manager in problem solving. First we need to define our terms. **Definition:** A problem is an unwanted variance from a standard.

This means that a problem *is not* a sales goal, ROI, or some other 'hoped for/projected' values for a new product line. A problem is the unwanted variance from a standard (existing and known) process. For example, if seasonally adjusted Quarterly Sales for the Clothing Division increases by x% over the past several years, then a problem could be a 'marked decline' in the existing trend. What about a 'marked increase'? Don't managers by definition always want MORE! Exactly, but remember, there is a supply chain supporting the sales and 'marked variances' always create problems for supply

Practical uses for a Data Warehouse: Part Three Problem Solving

chains. Marked variances, as in this example, remain a problem despite the political spin (re-definition) given to them by anyone including company officials.

The wise reader (surely this must be you) will ask how they can go beyond simple problem identification and move into problem solving. Wait, you ask, isn't that what the manager is supposed to do, solve problems? Right you are, but don't you want to be known as a team player, a partner in the process, a mover and shaker, keep your job, and promote your data warehouse? The old story of the mail room clerk becoming CEO actually does happen!

Here are the basic steps for using a well-designed data warehouse to solve problems.

1. Identify a process to track.
Clothing Sales
2. Identify a process measure.
Quarterly Sales for the Clothing Division
3. Identify the components of the process measure.
Eastern Region Quarterly Sales
 - Southern Region Quarterly Sales
 - Midwest Region Quarterly Sales
 - Returns
4. Set a Standard
 - $\text{Division Sales} = ((\text{E. Region} + \text{S. Region} + \text{MW. Region}) - \text{Returns}) * 1.05$
 - Assumption: a 5% sales increase is a trend derived from historical data and IS NOT an arbitrary marketing goal.
5. Monitor the process measure for variances and relevancy. Don't continue to monitor or maintain reports about processes that don't matter anymore.
6. Feedback. Communicate to the manager how and when the process has varied (outside predefined limits) from the standard (a problem) or if you think the process measure is no longer relevant.

If you're smart, also analyze the probable cause of the problem or at the very least the process measure components that perpetrated the variance.

Now that you have formulated the question (What is the cause for the marked variance in Quarterly Sales for the Clothing Division?) the manager is able to investigate further and/or make their decision. Your job is done.

Practical uses for a Data Warehouse: Part Three Problem Solving

In conclusion, since it is very difficult to estimate ROI for many types of IT projects, it is in the best interest of the 'converted' to promote the increased usage and benefits of a data warehouse. One good measure is to attribute 20% of the gross value of a successful program directly to the DW.