Business Intelligence Verticals

Reprinted from DM REVIEW

# Take Two Terabytes and Call Me in the Morning

*Claudia wishes to thank David Gleason, Lisa Loftis and Joyce Norris-Montanari for their input to this article.*

**By Claudia Imhoff**

This month, *DM Review* is featuring business intelligence (BI) trends and applications in various vertical industries. This article covers how pharmaceutical companies have used BI for approximately the last decade. It is my pleasure to discuss the top trends in this important and sophisticated industry, which includes the early adopters of BI who have expanded its frontiers with their innovation and technological breakthroughs.

First, let's review some background on pharmaceuticals. The ultimate consumer of many pharmaceutical products is the person taking the drug or receiving the healthcare treatment. Generally, the consumers obtain prescriptions from their doctors or they buy over-the-counter products from a local drug or grocery stores. In a typical pharmaceutical transaction, there is little or no interaction with the manufacturer. Companies such as Abbot Labs, Eli Lilly, Pfizer, Wyeth or Merck frequently rely on third-party data providers for their sales and sales channel information. This external data documents information such as which doctors prescribe their drugs or their competitors' drugs; which pharmacies use generics; which distributors interact with which doctors, clinics or hospitals.

Altogether, this facet of their business impedes pharmaceutical companies from understanding and marketing to their ultimate customers. It's costly in a number of ways. They repeatedly spend vast amounts of time, money and resources on the purchase of their own data and that of their competitors from these data providers just to get a "feel" for whether their marketing efforts are working and where or how they should spend their marketing dollars.

In the past, the following questions were difficult or impossible to answer:

- Do manufacturer sales calls to doctors' offices make a difference in the prescriptions generated by the doctors? If so, how much of a difference?
- Do magazine ads influence consumers in determining the drug their doctor prescribes for them? If so, to what degree?
- What is the most effective way of influencing the distributors of new and old products as they deal with their hospital corporations, clinics or HMOs?
- How do the pharmaceutical companies interact with insurance carriers, HMOs or other influencers?

Along with these difficult customer questions come a whole raft of others concerning the development of "promising" new drugs:

- Which R&D compounds deserve the enormous amount of money and effort required to bring them to market?
- Are there demographic trends that indicate the significant diseases and healthcare problems the company should focus upon?
- How does the company shorten the development cycle while meeting FDA requirements?

Now let's examine how the pharmaceuticals are using BI to better understand their prescribers, the ultimate users of their drugs and future drug needs. Here are some of the trends we have seen in our decade of working with them.

## Reduced Reliance on Outside Vendors

Because of governmental restrictions limiting drug manufacturers from interacting directly with individual patients, pharmaceutical companies have had to rely on the third-party vendors who can legally gather this information from doctors, pharmacies, distributors, hospitals, etc. That, by itself, would not be a huge problem except that many pharmaceuticals have terribly fractured departments and IT infrastructures; and they end up buying the same data or slightly changed data from the same vendor many times over. Sales would purchase the data with a sales slant. Marketing would buy a set of the same data but with a mar-

keting spin, and customer service would purchase the data again but with their specific data requirements or format satisfied. Significant amounts of money and effort were being spent on buying basically the same data repeatedly with little or no reusability, consistency or synergy received. In addition, the purchased information wasn't always entirely reliable or consistent. Many times, IT folks were forced to spend significant resources to integrate it all.

Pharmaceuticals turned more and more to a BI environment to help them support and grow their own internal competence. They have built large data warehouse structures to house the third-party data and to integrate it with their own sales force and marketing information. The benefits are enormous. Not only have they been able to reduce the frequency and cost of buying their own data from the vendors, but they now have faster and more complete analysis as well as the ability to match prescription data that they purchase with their own sales and marketing data.

## Marketing Analysis

Pharmaceuticals are now able to perform sophisticated trending and data mining analyses with the integrated and consistent data garnered from their data warehouses. The establishment of a solid BI environment containing both internally generated and externally purchased data has allowed the pharmaceutical companies to do far more sophisticated types of customer segmentation analysis. Our experience has shown that often each department or group within a pharmaceutical company has its own way of segmenting customers, products and channels. For example, some departments segment customers as joiners versus leavers (new to using the company's products versus a previous customer that is no longer using the company's products). Others segment existing customers according to their profitability to the company. Another segment type used in departments is based on geographic locations. Each has a valid reason for their segmentation type, and each is now supported fully in the BI environments being created.

A second set of marketing analyses involves tracking the patterns of customer behaviors. Many pharmaceutical companies are becoming much more customer-centric. Many are creating databases that allow the affiliation of customers to other customers to be determined, much like the householding process of financial institutions. In its simplest form, this involves linking some of the prescribers to their formal institutions (hospitals, clinics, HMOs), but there is much more that is being implemented in these databases (e.g., the determination of prescribers who are also consumers, doctors who are also key opinion leaders, and consumers or doctors who are also VIPs in the institutional or payer databases).

In addition to these marketing efforts, many companies are now capturing detailed data about their total investment in a customer. This data may include the number of sales calls performed on each prescriber, all direct and indirect marketing expenses tied to the actual revenues they generated, the costs of samples left with each prescriber and the change (or lack of change) in subsequent prescribing behavior, medical support costs, educational expenses and their tie to the revenues being generated. The companies are now able to determine the real calculated client value or profitability, including not only sales and prescriptions written, but also tying this data to their influence networks (e.g., is this doctor a member of a hospital formulary board?).

The pharmaceutical companies are now able to use these analyses to calculate a customer-level profit and loss statement, giving them a much clearer picture of where and when they should allocate scarce sales resources. Now pharmaceuticals can apply the same CRM techniques used by more traditional direct customer industries to rank and prioritize customers (both prescribers and payers) to better focus their sales efforts and resources – all thanks to their implemented BI applications and environments.

## Understanding a Project (Product) from Inception or Discovery to Consumption

One of the more difficult problems faced by the pharmaceutical industry is determining which compounds of the millions under consideration deserve the enormous R&D effort required to move them from a research project to a commercially available drug product. All along the discovery process, there are check points, governmental reporting requirements, documentation and audit trail mandates that, if not followed to the letter, can cause significant delays in getting a drug to market or, worse, actually cause the project to be cancelled. Pharmaceuticals are using their BI environments to better consolidate the voluminous R&D data for governmental and regulatory reporting. These are not only reporting on the status of the R&D project, but also on the always sensitive research costs, so that the pharmaceutical can demonstrate the justification for new drug costs.

**Pharmaceutical companies now turn to their BI environments to capture, coordinate, maintain and disseminate crucial information – not only for usage by their internal sales, marketing, customer service and financial people, but also for the myriad of external entities requiring access to this information.**

The results of the clinical trials and other R&D data must be consolidated and reported to prove the superior efficacy of a pharmaceutical company's products over its competitors' products and over generics to governments as well as to the prescribing customers and, possibly, insurance companies. The data is used to justify the usage of this product instead of a cheaper generic or to prove why insurance companies or consumers should pay a possibly higher cost for their drugs.

## Help with New Product Launches and Mature Brand Tracking

A new drug launch requires a sophisticated program that represents fully integrated online and offline information as well as help sources. The program is designed to drive compliance with worldwide safety requirements, capture and maintain communications with consumers, and provide a critical audit trail of information on the compliance and communications. The pharmaceutical companies are using their BI sources of information to determine where, when and to whom they should offer their expensive educational courses about their products. They use this intelligence to educate the public as well regarding the overall perception of the pharmaceutical company itself. This is to offset any misconceptions or negative perceptions that may exist about the pharmaceutical industry as a whole and the individual company in particular.

Pharmaceutical companies now turn to their BI environments to capture, coordinate, maintain and disseminate crucial information – not only for usage by their internal sales, marketing, customer service and financial people, but also for the myriad of external entities requiring access to this information. These companies recognize that if the public knows more about specific drugs, their efficacy, possible side effects, etc., there is less likelihood that the drugs will be misused or used inappropriately. Education is a big item in every pharmaceutical company's marketing efforts for brand awareness.

There are many other usages for the pharmaceutical industry's BI environments such as faster month-end reporting and closing, supply and demand chain performance analyses, merger and acquisition consolidations, but these are common to almost any industry. We focused on the trends that are unique to pharmaceuticals. Additionally, we focused on only those pharmaceuticals that we feel have recognized the importance of their BI environments and put forth the funds and resources needed to implement it.

There are certainly a number of issues that still face this highly competitive and technologically sophisticated industry such as a dramatically changing sales culture and organization, ever-shifting governmental requirements and constraints, and changing waves of consumer demographics. For each of these changes, the pharmaceutical company that has created and implemented a solid BI architecture, including a data warehouse, operational data store and set of dependent data marts, has created a sustainable and maintainable environment that will serve the company well into the next decade. These companies are reaping the significant benefits from their efforts and will continue to be at the top of their game.

*Claudia Imhoff, Ph.D., is the president and founder of Intelligent Solutions (www.IntelSols.com), a leading consultancy on CRM and business intelligence technologies and strategies. She is a popular speaker and internationally recognized expert and serves as an advisor to many corporations, universities and leading technology companies. She has coauthored five books and more than 50 articles on these topics. She may be reached at cimhoff@intelsols.com.*