NewVantage Partners

71 Eliot Road
Arlington MA 02474
781.643.9235 tel
781.643.1081 fax
www.newvantage.com

NewVantage Partners Life Sciences CIO Breakfast
Executive Summary

On January 25, 2005 NewVantage Partners held the latest in its series of CIO thought leadership events in Boston. The morning focused on data integration and business intelligence in the life sciences. Panelists included current and former senior executives from Sanofi-Aventis, Merck, Biogen-Idec, Vertex, Millennium and Partners Health Care as well as a representative from the Massachusetts Biotechnology Council. The following is a summary of the key findings:

Finding	Executive Comments
1. Technologies and approaches necessary to achieve the multi-source/multi-type data integration required by life sciences have started to come together.	• With improvements to content management, collaboration, search, portal, and ETL software, as well as the acceptance of services oriented architectures and the semantic web, and new technology tools that support the integration of multiple data sources of different types and media, we are beginning to see the creation of enterprise knowledge in life science organizations. • The Chairman of the Massachusetts Biotechnology Council Technology Committee spoke of an integration project that can track a single molecule through the typical 12-year development cycle from first testing, through pre-clinical, pre-human clinical, human clinical, on through marketing. Accessed though an easy-to-use electronic dashboard, scientists and decision makers can follow the path of the molecule from inception to marketing knowledge. As a result, efficiencies have increased four-fold.
2. Dimensions by which data are analyzed continue to increase requiring greater flexibility.	• A health care provider executive cited the need to expand the use of 8 million rows of structured case data for order analysis. Currently 8 questions can be posed to the repository to assist clinicians. The goal of the organization is to enable personalized medicine. In order to achieve that, ***"we need to ask hundreds of thousands of questions, not just 8."***
3. New types of data and analysis are required to effectively monitor and predict trends affecting marketing efforts and quality of care.	• The question was posed ***"what are we getting from dispensed prescription data?"***, the current gold standard for performance measurement. Although this data is invaluable, it is a representation of the state of the market months after an event has occurred. It is a poor representation of what the market looks like today. After all, ***"….prescribing behavior changes on a dime. By just viewing prescriptions that have already been written, you are missing the trend break that happened 6 to 9 to 12 months ago that altered behavior. You can spend years following these breaks with current data sources, but they're already over!"*** Integrating dispensed prescription data with other types of provider data and, perhaps, research captured by your sales force, can identify missed prescribing opportunities and help manage your resources for continuous readjustment based on dynamic

Finding	Executive Comments
	business conditions. • Another panelist pointed out that existing data is just fact without context. You know what happened—what drugs were prescribed and how often they were refilled. What you don't have is anything about the patient experience. This information needs to be captured. She went on to say that, when making decisions, you are not typically looking at one point of factual data. Rather, you need to look at derived data, which comes from analyzing consolidated information. ***"When you pull it all together, you can make conclusions and decisions. After all, the same data in different context has very different meaning."***
4. Business and IT collaboration, and user acceptance, determines the success of data integration.	• According to one participant, ***"If you don't have the backing of senior leadership, your data management projects will fail."*** It isn't just the immediate value of the information that needs to be developed; it is also the long-term value to the organization. • Another panelist quickly pointed out that 70% of money is spent on failed projects. ***"The data is there, but it isn't visible to the people who make the decisions."*** • In an example of business and IT collaboration, an executive from a Biotech company commented that his scientists were very gratified to discover that over 170,000 outdated records had been quickly removed after a request. The issue was brought up in one of the scheduled IT/user reviews. This responsiveness led to improved relationships between the scientists and the technical staff and resulted in significantly increased usage of the data. Because of the immediate value presented, and the willingness to listen to user requirements and feedback on a regular basis, the company is enjoying a 99% adoption rate of the system. • The Sanofi-Aventis integration competency center team discovered that adoption was somewhat of a cultural issue. Besides making it easy for scientists to get to the information they need, they had to get them to be willing to share the information with other disciplines and business units. The way they are approaching this is to demonstrate the immediate value of the consolidated data to the users. • Merck created an innovative approach to cooperation at multiple levels, overcoming cultural differences among disciplines, and ensuring that feedback was solicited and acted upon. The company created a cross-functional information advisory board that looks at the interactions across the value chain, making sure that, for example, commercial information is put into clinical hands, that ideas are shared, and that systems are improved to support this information sharing. And that is the key. In the life sciences, the people—the experts—are the critical decision makers.

Finding	Executive Comments
	Data integration initiatives must support what these experts need to do without handicapping them in any way. Let the systems support the human decision-making process.
5. Lack of semantic standards or mappings across disciplines continues to hamper data integration and analysis efforts.	• A primary challenge to data integration in life sciences is the absence of cross discipline/function semantic standards. Terminology varies not only from company to company, but within different groups in the same organization. The disease, diabetes, for example, has different meaning to the chemists at a pharmaceutical firm than it does to the biologists. To make matters worse, this can also happen between data types. In the Sanofi-Aventis case study presentation, for example, one of the barriers encountered was the differing semantics between structured databases and text-based sources. • The taxonomies within an individual discipline, such as chemistry, don't really change. However, when trying to build links among, say Chemistry-related data and Biological data, things start getting fuzzy. Systems are needed that connect data from different, yet rigorously-structured, sources that allow scientists to make new connections. One panelist stressed the need for standards for the presentation of scientific information across the disciplines, stating, ***"Scientists are overwhelmed with the resources outside their individual areas. Scientific information needs to be presented in a timely and consistent way so that experts can use the combined data to interpret their areas and make decisions and recommendation."***
6. Timeliness of analysis is the driving factor in business intelligence.	• Improved information that is readily available to scientists and other decision makers is vital to reducing product life cycles, time to market, and related costs. ***"We need timely visibility into how equipment, people, processes, and projects are going so we can run at peak efficiency."*** • An area where timeliness is driving investments in business intelligence is supply chain management. Companies are starting to work closely with manufacturing partners to share data about product forecasting needs so that there can be more accurate planning. Biologics, for example, are very expensive, have a short shelf life, and are needed in a somewhat limited supply (but where shortfalls can be dangerous). Having accurate forecasting and user data continually updated based on real life events can result in better decisions and major financial savings.