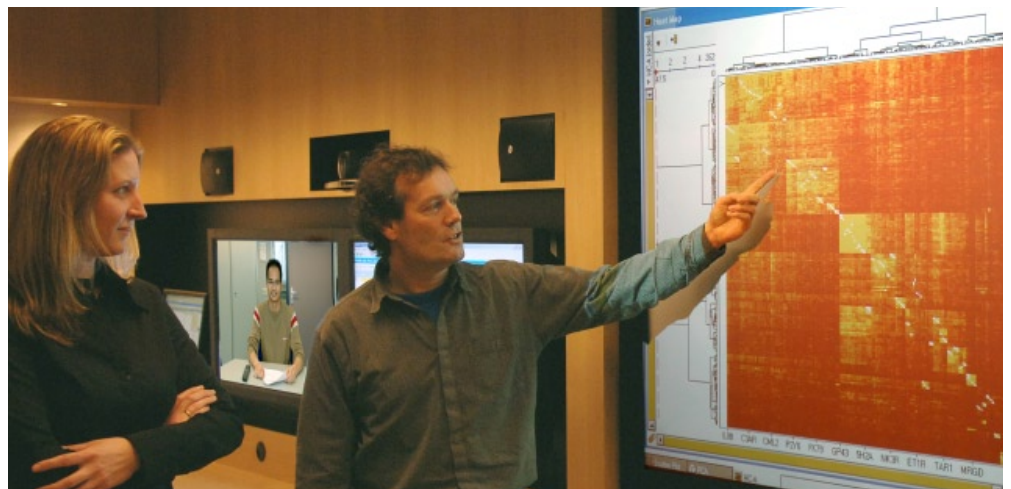




TIBCO Spotfire Helps Organon Bridge the Data Gap Between Basic Research and Clinical Trials



Pharmaceutical leader deploys TIBCO Spotfire enterprise analytics platform across its drug discovery organization to catalyze communication and collaboration among scientists.



Challenges:

- Critical gap between available data and the ability to analyze it.
- Data overload from multiple databases was slowing decision making and creating a bottleneck.
- Needed an application that could correlate data within a single application.
- Inefficient data sharing between scientists.

Solutions:

- TIBCO Spotfire enterprise analytics platform provides scalability to handle immense datasets.
- Data integration capabilities easily access multiple databases and work with disparate software tools.
- Guided workflows streamline analytical processes.

Results:

- Spotfire software reduces time spent on data retrieval and analysis.
- Homogenous interface and interactive visualizations improve quality and complexity of analysis.
- Scientists can now efficiently analyze and share data in various disciplines so crucial in the drug discovery process.

Founded in 1923, Organon is a renowned global biopharmaceutical company committed to improving the health and quality of human life. Through a combination of independent growth and business partnerships, Organon strives to become or remain one of the leading pharmaceutical companies in each of its core therapeutic fields: gynecology, fertility, neuroscience and anesthesia, although research is also conducted in immunology and oncology. Organon is the human health care business unit of Akzo Nobel.

Pharmaceutical companies invest tremendous amounts of resources to bring today's drugs to market due to the increased complexity in drug development. The need for high quality products to reach the market faster puts a strain on research and development teams – while costs are going up, output is going down, often due to late stage attrition. In 2004, in recognition of the need to modernize the drug development process to make product development more predictable and efficient, the Federal Drug Administration (FDA) introduced the Critical Path Initiative.

The Critical Path Initiative provides pharmaceutical companies with a framework to accelerate the development of safe and effective medical products and bring them to market more quickly. It recommends that companies reevaluate their conventional business processes and leverage their information technology (IT) infrastructures to better utilize the business-critical information contained in IT systems.

Challenges

Organon has embraced the Critical Path Initiative, but like all pharmas comprising disparate units of scientists, the company found that a critical gap existed between the data available to its chemists, biologists, clinicians and statisticians and their ability to analyze it easily.

Translational sciences – a concept that is very important in all pharma companies – is at the heart of the Organon R&D activities with the objective of reaching Proof of Concept (PoC) faster and to more accurately predict drug effects in humans. Translational sciences promises to deliver real benefit to the pharma industry, reducing attrition and affording high quality, efficacious medicines. This requires a multichannel dialogue among scientists throughout the drug discovery process to create a better link between clinical development and basic research.



“Spotfire helps Organon achieve its ultimate goal... to enable users to turn data into information and understanding, allowing them to take the steps necessary to bringing a new drug to market faster and more efficiently.”

Jacob de Vlieg
CIO R&D

Data and knowledge sharing through the use of user-friendly informatics systems is fundamental to the success of translational research. But with enormous volumes of data from multiple sources and perspectives, Organon was challenged to find a way to use its vertical applications to provide its scientists with more targeted data with a goal of more quickly identifying new targets.

While analysis tools are ubiquitous at all phases, Organon’s research teams were often compelled to make key decisions based on limited analysis and Microsoft Excel reports that reflected discrete islands of information. If they could find a way to integrate disparate types of data, ask the right questions of the data and then catalyze the results, Organon decision makers could gain the insights needed to make better-informed decisions and more quickly.

Solutions

Organon has been using the Spotfire visual, interactive analysis solution for four years in its discovery research organization, in the areas of chemistry to optimize drug candidates, biology for target and biomarker discovery and translational medicine. Spotfire enterprise analytics has become an important data analysis application at the company. In addition to being relatively easy to learn with its highly interactive visualizations, Organon determined that Spotfire enterprise analytics excels at analyzing large volumes of data from multiple sources within a single visualization environment. What’s more, Spotfire software can integrate with a wide variety of software used in drug discovery.

For example, in toxicogenomics new compounds in the drug discovery pipeline are tested for possible side effects. The enormous amount of data generated – thousands of genes, many compounds, different dosages and time points – is stored in large databases. It is essential to quickly identify genes that play a role in toxicity. With Spotfire enterprise analytics, Organon can quickly pinpoint which genes are (de)activated by which class of compounds. This helps to discern toxic compounds from non-toxic compounds.

In early 2006, Organon licensed Spotfire software for global deployment across its discovery research organization, most importantly in translational science, to connect development and research as part of a goal that mirrors the Critical Path Initiative. Organon is using the software to catalyze communication and collaboration between scientists in different stages of the discovery process, aiming to accelerate the progression of high quality compounds from the discovery research phase through to



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clinical development. “The global rollout of Spotfire supports the introduction of a new mindset, based on data sharing and an integrated drug design and discovery approach,” says Jacob de Vlieg, head of the Molecular Design and Informatics Department at Organon.

Spotfire enterprise analytics allows Organon to link up very different data sources, allowing them to bring complex data together which are normally very disparate, for example, combining data stored in clinical trial management systems with data that has been observed in the lead finding process. Spotfire software enables scientists to bring relevant data together and catalyze a culture that enables people from clinical development and basic research to look at the same type of data and bridge the gap between different areas.

“Spotfire’s analytic capabilities introduce a new way for our researchers to exchange and analyze complex data across the R&D organization,” observes de Vlieg. “The software provides an interactive, analytical environment that supports a new approach to integrated drug design and discovery – optimizing early drug candidates and leading to a reduction in late-stage failures.”

The different data sources deliver enormous amounts of data. For example, in one step a scientist could perform 60,000 experiments in microarrays to identify what is really useful. Organon could have created a big data warehouse to store all the data that may or may not be relevant, but that would be time consuming and not very pragmatic. So the company saw in Spotfire software one tool that could enable its scientists to horizontally integrate data from a number of areas to see what was relevant from the outset, without having complex IT structures in place that would take years to build at enormous cost for dubious return.

Spotfire enterprise analytics enables Organon scientists to gather and integrate information from these multiple sources via advanced database query capabilities, then analyze and visualize the expression data. In fact, Spotfire enterprise analytics has taken the place of six or seven different types of tools running in the company that were great for specific areas, but lacked Spotfire software’s ability to integrate all of the data. “Deploying a tool like Spotfire in such a new area as translational medicine is an enormous challenge,” says de Vlieg. “All these disciplines have enormous value to the process – Spotfire enables you to bring that together.”



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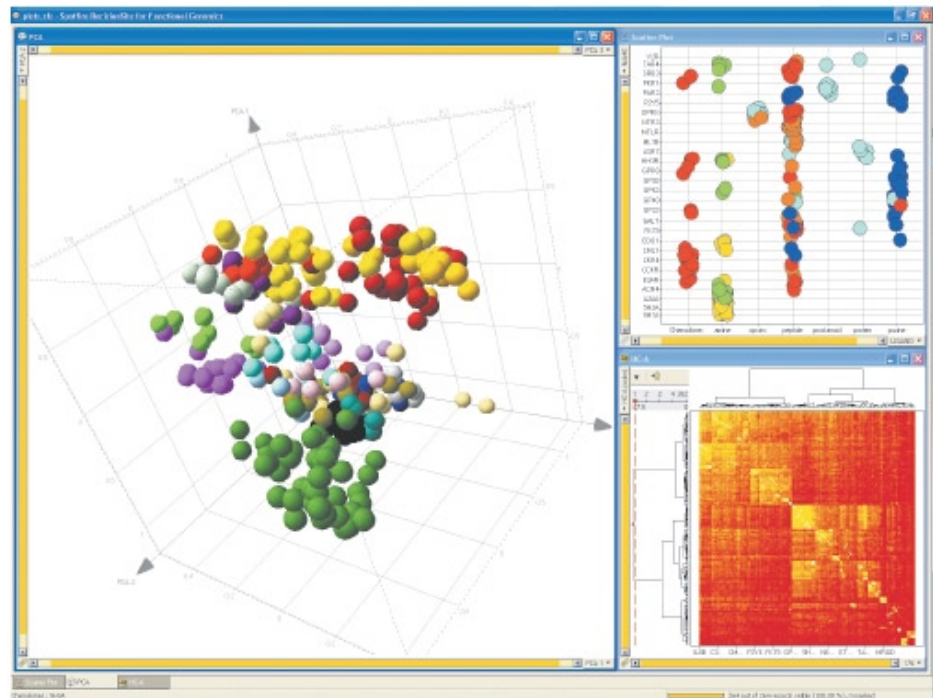
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Organon leveraged guides that had been created in other industries that also needed to analyze heterogeneous data because the underlying principles are similar. This enabled the company to implement best practices from the beginning for faster implementation. Moreover, having the guides in place meant the scientists could concentrate on the biological questions they wanted to answer instead of having to develop the underlying IT structure.

Spotfire enterprise analytics has gone from being the domain of expert users to residing on the desktop of most scientists at Organon, many of whom had been using Excel because of its ability to communicate with different data sources and because it features an interface that can be understood by many different types of scientists.

Spotfire software’s training resources and user friendliness were key factors in the expanded deployment at Organon. de Vlieg notes that they wanted to stimulate people who are not normally doing this type of complex analysis. “With Spotfire we can bring it to

Figure 1. Spotfire enterprise analytics has gone from being the domain of expert users to residing on the desktop of most scientists at Organon.





the masses, so expert users can be bridged with the people who really do the work, ask the relevant questions and see all the details; the two were always separated in the past.”

Results

While it is difficult to pinpoint specific ROI to Spotfire software, Organon views it as an essential contributor that is likely saving the company a lot of money because of its ability to access very different types of complex data sources across disciplines and visualize the data in such a way, as de Vlieg puts it, “that even my mother can understand.” Spotfire enterprise analytics is proving to be especially useful to younger scientists, who are already broader-oriented and can see the bigger picture. “Spotfire enterprise analytics could change the way we work and help us get better drugs on the market much earlier,” asserts de Vlieg.

The biggest challenges at Organon and in the industry at large are the tradeoffs – making a choice between one project and another. With the complete picture Spotfire software provides, the company can do better portfolio management. The entire picture isn’t complete without a clinical trial, but if the data can be combined much earlier the predictive value is increased significantly.

Spotfire enterprise analytics is starting to be used in other parts of the company. R&D is working closely with Organon’s marketing organization, and de Vlieg sees other applications in the pipeline as well.

With Spotfire enterprise analytics, highly visual and interactive data exploration can take place, easily enhancing a scientist’s intuition and expertise in turning molecules into drugs.

“Spotfire helps Organon achieve its ultimate goal,” de Vlieg concludes, “which is to enable users to turn data into information and understanding, allowing them to take the steps necessary to bringing a new drug to market faster and more efficiently.”



TIBCO Software Inc. (NASDAQ: TIBX) is a leading independent business integration software company and a leading enabler of real-time business, helping companies become more cost-effective, more agile and more efficient. TIBCO has delivered the value of real-time business, what TIBCO calls The Power of Now®, to thousands of customers around the world and in a wide variety of industries.

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