KEEPING ABREAST OF THE COMPETITIVE ENVIRONMENT IN CLINICAL DEVELOPMENT

Gain deeper insights to make faster decisions. Data-driven ‘development funnels’ give a traditional visualization a dynamic and interactive new look.

By Tim Miller, Vice President Product Management & Analytics

Strategic management of a therapy area requires hard decisions to be made about which programs to invest in and which to let go. Understanding the rapidly changing competitive environment for your drug candidates is a key input into these decisions. It is easy to lose track of the broader picture when a clinical program is in progress and get blindsided by external events. Questions that typically arise are:

“Are there any new entrants in my disease, and are they employing novel approaches?”

“Have similar drugs, either in my disease or in other therapy areas, failed recently? If so: why?”

“Have any of my competitors altered their projection for starting or finishing a clinical study?”

APPROACH

The classic visual metaphor in Pharma is the “development funnel” that provides a snapshot the progress of drugs through the development pipeline. In a lot of cases these funnel views are built manually by moving shapes around in presentation software like Microsoft PowerPoint.

Thomson Reuters set out to build a version of this that is data-driven, i.e. the content is built dynamically from the comprehensive drug development pipeline information curated by us and managed on the Cortellis platform.

Users can select an area of interest: a competitor company, a disease or set of diseases or a mechanism of action and get a dynamic view of the pipeline. The user can customize that view, e.g. removing candidates from the view that they are not interested in or viewing by different criteria, e.g. by company, drug or action. Candidate progression can be tracked through trials across all indications and linked back to the Cortellis platform for the full development profile on the drug.

RESULTS

In this example we are looking at the competitive environment in renal tumor therapy. Using the filters in the analysis we have narrowed the focus to drugs in development (from Discovery to Registration) and we have opted to look at the landscape by small molecules vs. biologics, labeling by drug name.

The view enables a rapid appreciation of the current landscape, or you can focus on just those drugs that have changed status in a given period, e.g. over the last year. The analysis image can be exported for sharing with other team members: by email or as a presentation graphic for example. Selecting any of the cells brings up a summary of the drug in the details panel below and includes a link to the drug record in Cortellis.

For a selected drug, the development history chart shows the progression of the drug. This includes passage through pipeline events in different countries for each organization working with the drug.
Here we can see that BNC-105 completed phase I trials in solid tumors in 2008 and is in Phase II trials for renal and ovary tumors currently. We can also see that the drug has been studied in mesothelioma, in Australia starting March 2010. Linking through to the development profile on Cortellis we find that preliminary results of the renal tumor trial were reported recently:

![Development Funnel for Renal Tumor Drugs](image)

This approach demonstrates how a dynamic visualization of information about drug pipeline events supports:

- A high level overview of the competitive environment
- Exploration of detail that enables the user to follow a train of thought through the application

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AUTHOR BIO

Tim Miller has worked within the Thomson Reuters organization for 30 years, and specializes in the interface between Science and IT. In his current role Tim focuses on bioinformatics, cheminformatics, semantic technologies, and text/data mining & visualization, specifically as they apply to the Pharma space. Tim holds a bachelor’s degree in Chemistry from the University of York and a bachelor’s degree in Law from the University of London. He is a Chartered Chemist (Member of the Royal Society of Chemistry) and a Chartered Information Technology Professional (Member of the British Computer Society).