

Design Tip #94 Building Custom Tools for the DW/BI System

By Joy Mundy

There is a large and diverse market for products to help build your DW/BI system and deliver information to your business users. These range from DBMSs – relational and OLAP – to ETL tools, data mining, query, reporting, and BI portal technologies. What role could there possibly be for custom tools in such a rich environment?

Most of the custom tools we've seen have supported back room operations, such as metadata management, security management, and monitoring. For example, you could be capturing information about who's logging into the system, and how long queries are taking. The simplest custom monitoring tool would be a set of predefined reports to display historic trends and real time activity.

But the best tools will let the users initiate an action. One recent client had an unusual requirement where business users performed complex analysis and then submitted jobs to the ETL system. Each job could take anywhere from a few minutes to a quarter hour to run, depending on how busy the system was. The business users submitted their jobs at the end of the day, and then hung around the office until they were certain their data processed correctly and was ready for the next morning. The DW/BI team developed a straightforward tool that monitored the jobs that were submitted to the system. Users could see where their jobs were in the processing queue, get a good idea of how long they might take, and – best of all – users could cancel their own jobs if they realized they made a mistake in the data preparation step. This tool was particularly nice and developed by a skilled programmer, but a less fancy tool could be pulled together in a matter of a few weeks.

Most DW/BI teams use a variety of products from multiple vendors. Custom tools will be most useful at the transition points between different technologies. This holds true even if your DW/BI system is built largely on a single platform; there are always gaps between the components. Metadata management is one place where we might need to write a bit of custom glue. In the absence of an integrated platform with complete and synchronized metadata between design, relational and OLAP databases, business intelligence layer, and standard reports—a platform we still hope to see some day—there will always be a place for a custom tool to bridge those metadata ponds. A very simple tool might consist of a few scripts to synchronize metadata stores. But we have seen customers with web-based applications that let a business analyst update and synchronize metadata, such as business descriptions.

Other examples of custom tools that we've seen at our clients include:

- Report publishing workflow – manage the process for creating a new standard report, including ensuring the report's definition is approved by appropriate representatives from both business and IT.
- Security management – programmatically issue the commands to add users to the system with a user interface for assigning them to specific roles. This is particularly valuable for data-driven security systems such as those driven from an organizational structure and for security systems that span multiple databases.

- Dimension hierarchy management – enable business users to remap dimension hierarchies, such as which products roll up to a product subcategory and category, or which general ledger accounts are aggregated together.

Don't be overwhelmed! Many DW/BI teams build no custom tools, or only a few very primitive tools. But there are some very effective programming environments on the market, not to mention inexpensive software development houses that you can hire. Don't be afraid to be creative. It's often the case that a very modest investment in some custom tools can greatly improve the manageability of your DW/BI system. The best tools are the ones that make the business users happier, by giving them more control over the DW/BI system that is, by all rights, theirs rather than yours.