

TDWI CHECKLIST REPORT

Self-Service BI

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FOREWORD

Self-service is the holy grail of BI—a mantra repeated incessantly by overworked BI managers who find it difficult to stay ahead of user requests for new reports and applications. With self-service BI, users create their own reports without having to rely on the IT department. Users get exactly the reports they want, when they want them, and the BI team no longer serves as an intermediary between users and the data. Users no longer have to wait days, weeks, or months for a report, only to discover that it is missing key functionality or is no longer relevant, and the BI team eliminates the backlog of reports that prevents it from focusing on more valuable activities.

When applied properly, self-service BI eliminates hundreds, if not thousands, of independently designed reports and multiple reporting systems. Instead of report chaos, self-service BI gives users one place to go to get the information they need. The key to self-service BI is a reporting framework that tailors information by role and group and enables users to subscribe to personalized views of the data. I call that framework MAD, which stands for monitor, analyze, and drill to detail.

If everybody wins with self-service BI, why isn't it more pervasive? One problem is that there are multiple types of self-service BI, and organizations must understand the information requirements of each user group before they know which type of self-service BI will work. In addition, not all BI tools do an adequate job of supporting the MAD framework that empowers users to navigate information independently.

To make self-service BI a reality requires discipline and foresight. This report outlines several techniques that can help your organization successfully implement self-service BI.



NUMBER ONE

RECOGNIZE THAT THERE ARE TWO TYPES OF SELF-SERVICE BI

Although self-service BI is a great concept, it's often misapplied. That's because people don't realize that there are two types of BI self service: one for power users and another for casual users. Power users are data-savvy individuals who are comfortable accessing, analyzing, and publishing data on a regular basis. They need to be empowered to create reports from scratch. This involves selecting facts and measures from a list, submitting queries to databases, and formatting the output. I call this type of BI self service "ad hoc report creation."

Casual users are executives, managers, and staff who examine reports on a regular basis but don't normally analyze and manipulate the data itself. These folks need a different kind of self-service BI than power users. Casual users don't want to create reports or data sets—only navigate them. Casual users are willing to select parameters, respond to prompts, or drill down on predefined navigation paths either in a dashboard or parameterized report. I call this type of BI self service "ad hoc report navigation."

The key here is to apply the right type of self-service BI to the right groups of users. It makes no sense to give casual users ad hoc report creation capabilities—they will get frustrated and abandon the toolsets. Conversely, it is not wise to give power users ad hoc report navigation tools. They will simply use those tools to export data to Excel or Access and create spreadsheets.

**NUMBER TWO****APPLY THE MAD FRAMEWORK**

The MAD framework represents the optimal way to design a BI environment that meets the analytical needs of casual users. MAD stands for monitor, analyze, and drill to detail. (See Figure 1.) The monitoring layer consists of graphical key performance indicators (KPIs) that enable business users to assess the status and trends of KPIs at a glance. If a KPI stoplight is yellow or red, users can drill down to the analysis layer to explore the KPI from multiple perspectives or dimensions using filters. Once they discover the root cause of the problem, they can drill down to atomic-level data by running queries or reports against the data warehouse or source system to identify the customers or products affected.

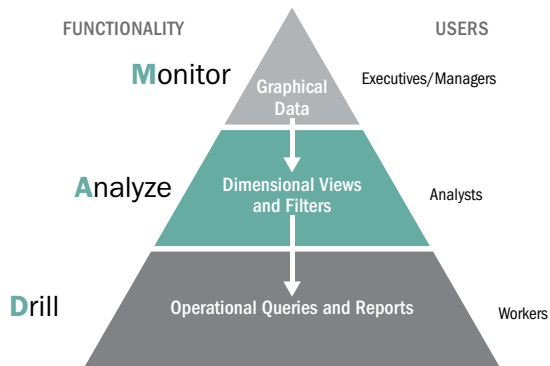


Figure 1. The MAD framework

A MAD framework creates an interactive information sandbox that delivers information to users on a just-in-time basis, optimizing usability and adoption. The amount of data and the number of dimensions and measures expand exponentially at each level, as indicated by the pyramid shape of the framework. On average, MAD solutions contain about 12 metrics and 20 dimensions. These sandboxes are big enough to address 60% to 80% of casual users' information needs, but not so big that they get lost in the data. MAD provides users all the information they want, but only what they need, when they need it. In short, MAD specifies a layered information delivery service that parcels out information and insights on demand.

Users can start anywhere in the framework. Managers and executives typically start at the monitoring layer and drill down; analysts start at the middle layer and drill up, down, or across; and field staff start at the detailed data layer using operational reports. KPIs roll down; data rolls up. Role-based permissions determine which users see what data at each level of the framework, and personalization features let users tailor certain parts of the application to suit their information preferences.

**NUMBER THREE****DON'T ABDICATE RESPONSIBILITY FOR REPORT CREATION**

One problem with self-service BI is that BI managers believe their job is done once they deploy the tools. Although power users are self-reliant no matter what tools they use, casual users are not. Tools alone don't enable self-service BI.

To make self-service BI a reality, especially for casual users, BI managers must become *more* engaged with business users, not less. This means that the BI team needs to design the MAD framework and not outsource it to functional departments or groups. Unfortunately, many BI teams do just that. They build the data warehouse and then rely entirely on functional departments to build reports. This is like a telecommunications company that builds a nationwide network and then neglects to wire the last mile from the central office to customers' homes. They leave the customer stranded.

To create a series of MAD sandboxes—which in essence are sets of standardized, interactive reports or dashboards—BI managers need to work closely with their user communities. They need to understand the business's strategies and goals, the processes it manages, and the questions users want to ask. To capture these requirements, the BI team needs to assign a trusted analyst to work with each business group and translate requirements into specifications. It's best if this person is a senior analyst who comes from the business and is widely respected. This person resides on the BI team but typically spends most of his or her time in the business unit.

**NUMBER FOUR****CREATE A NETWORK OF SUPER USERS**

Along with a senior liaison for each functional group, the BI team needs to groom one or more “super users” in each department it serves. Super users are technically savvy business users who take responsibility for creating ad hoc reports on behalf of colleagues in their department. In a mature BI environment, super users are an extension of a BI competency center, which provides super users with training, support, and encouragement. In most cases, the super users are self-appointed volunteers in each department who handle reporting tasks.

Super users’ primary responsibility is to fulfill requests for ad hoc reports that extend beyond the boundaries of the MAD framework. Since the super users are closer to the business, they can fulfill those requests more quickly and accurately compared to a corporate BI team. In addition, super users can help define and validate requirements for the MAD-based sandbox and recommend where to expand its boundaries and enhance its functionality. The super users can also help train business users in their department who need help navigating MAD dashboards or reports.

**NUMBER FIVE****CREATE A BI GOVERNANCE PROGRAM TO SUSTAIN THE INITIATIVE**

The purpose of the MAD framework and self-service BI is to meet business users’ information needs. The only surefire way to do this is to make sure that the business, not IT, owns the BI initiative. This is not easy to do.

Since IT usually initiates the projects and develops the solutions, many business people automatically think of these as IT-sponsored projects, even though the business unit is ultimately paying for them. To avoid this trap, BI teams need to build governance from the top down and the bottom up. From the top, most BI programs need the support of a single executive sponsor whose role is to evangelize the project, secure funding, and manage political interference for the project. Most important, the initial sponsor needs to recruit other executives to fund extensions to the program and sit on an executive steering committee that oversees the direction and scope of the BI program.

From the bottom, the BI team needs to establish a super-user network and recruit other power users (e.g., business analysts and subject matter experts) to form a working committee. This committee should meet monthly to resolve issues, plan enhancements, create a road map, select tools, and define standards for reports, tools, and interfaces. In both committees, the business users take the lead: they run the meetings, define and approve the BI road map, and coordinate with the BI team, which provides support and assistance as necessary.

**NUMBER SIX****REIN IN POWER USERS**

Giving power users self-service BI tools often creates more problems than it solves. These workers tend to go overboard, creating hundreds if not thousands (or even tens of thousands) of reports—a majority of which are redundant and rarely used. The resulting report chaos can derail a BI project. Casual users can't find the right reports and complain that many reports are inconsistent. In short order, casual users stop using the BI tools and the project grinds to a halt.

To prevent this scenario and rein in power users, the BI governance group should implement a review board. Super users and power users should constitute the board to ensure their buy-in. The board should certify enterprise standard reports designed using the MAD framework. Before a power user can publish a report for others to consume, he or she must submit a proposal to the governance board, which evaluates the business value of the report and compares it to existing reports in the portfolio. The board decides whether to accept or reject the proposed report. It may decide to modify an existing standardized report to accommodate the request.

To be clear, this governance process doesn't prohibit power users from creating ad hoc reports for themselves or for an executive or manager. It only requires power users to get approval to publish and schedule a report for broad consumption by others. This process enables power users to conduct ad hoc analyses without undermining the consistency of information used by the enterprise.

**NUMBER SEVEN****LIBERATE POWER USERS**

Yes, this appears to contradict Number Six. BI teams need to limit the reports that power users can publish to the masses, but at the same time—and to ensure their buy-in—BI teams need to empower them with tools that make power users more productive and valuable to their organizations. Would you hire a carpenter to build an addition to your house who only owned a hammer? No, you would hire a carpenter whose toolbox contains a tool for every task. The same is true in BI: power users should select tools that are optimal for various types of analytic tasks, such as creating complex plans and models; writing ad hoc queries against internal and external data; applying logic to custom data sets; and formatting results.

Of course, the most popular analyst tool is the spreadsheet. Because spreadsheets are a fact of life in the analyst community, the BI team needs to build a bridge between the BI environment and desktop tools preferred by analysts. This entails making spreadsheets a full-fledged client to an analytic server. It also means that BI teams need to populate the data warehouse and data marts with the range of data that analysts are most likely to access.

**NUMBER EIGHT****SELECT BI TOOLS THAT SUPPORT SELF SERVICE**

Once you've bought into the MAD framework, built a super-user network, and implemented a governance program (including a report review board), it's time to select a BI tool.

Historically, BI teams that have deployed MAD-like frameworks have stitched together a portal, OLAP cube, and reporting tools to enable users to navigate the monitor, analyze, and drill to detail layers. Today, many more BI tools support MAD out of the box to varying degrees. Leading BI vendors have done a better job of seamlessly integrating portal, OLAP, and reporting modules, while several start-ups offer tightly integrated reporting and analysis solutions for the mid-market.

As mentioned, MAD solutions can take two forms: parameterized reports and performance dashboards. Parameterized reports are best suited to large enterprise and inter-enterprise deployments, where simplicity and scalability are critical. Performance dashboards are best used internally to monitor performance and critical processes, where flexibility and collaboration are vital. Performance dashboards are typically more visual and analytical than parameterized reports, which are more focused on the bottom layer of the MAD solution rather than on the top two layers.

The best BI tools support both parameterized reports and performance dashboards. Whatever vendor you select, make sure its product supports the following characteristics:

- **Dynamic interface.** The BI tool's user interface should be visually pleasing and functionally intuitive. Creating an effective user interface depends both on the tool's functionality and on the way administrators configure and design the screens. BI tools should offer interactive GUI objects (tabs, radio buttons, pick lists, etc.); the ability to synchronize sections, panels, or pages with a single filter; Flash- and/or AJAX-enabled functions; and a rich, interactive charting engine. The user interface should also support guided navigation, which is the ability to recommend navigation paths based upon the user's context and preferences.
- **Integrated capabilities.** To simplify user adoption and training as well as reduce IT system maintenance, select a BI tool that provides a single, integrated environment with common metadata that supports dashboards, analytics, reports, and multi-dimensional OLAP.
- **Seamless drill.** Most important, the tool should let users drill through the three layers of the MAD framework. That is, users

should be able to drill from a top-level monitoring or exception-reporting layer (where exceptions are color coded) down to an analysis layer. There, users should be able to sort, pivot, filter, switch dimensions or metrics, rank, insert calculations, insert columns and groups, and export to Excel. Finally, users should be able to drill through from the analysis layer to detailed data in the data warehouse or operational systems. These can be predefined queries or links to operational reports.

- **Surf and save.** When casual users navigate to a place in the sandbox they find relevant and useful for future purposes, they should be able to save the view as a bookmark. They can either access the view at a later date by clicking on the bookmark or schedule it to run on a regular basis.
- **Role- and group-based views.** The tool should enable administrators to set permissions that govern views of data by role and group. This serves two purposes. First, it prevents users from accessing data they are not authorized to see. Second, it customizes the dashboards and reports so users see only the data they are interested in.
- **Personalized views.** In addition, the BI tool should enable users to tailor the display with reports and metrics that interest them personally. This is usually done by enabling users to customize the view of a tab or page of information (e.g., "My Dashboard" or "My Portal").
- **Prompted reports.** The BI tools should enable administrators to create intelligent, cascading prompts that make it easy to select the desired filters to apply to the information sandbox. The multi-level prompts should expose filters hierarchically and eliminate options based on previous choices.
- **Fast performance.** The BI tools should be able to query large volumes of data and provide short response times. This is a tall order, but most vendors have enhanced their architectures to balance the twin requirements of scalability and performance using a variety of techniques, such as in-memory and disk-based caches. Although MAD sandboxes can be large, they still address known data sets, so administrators can tune them to ensure adequate performance.
- **WYSIWYG design.** Users should be able to customize the look and feel of the view or report using a "what-you-see-is-what-you-get" publishing paradigm (familiar to most Internet users today). They should be able to change fonts, colors, or backgrounds, but more important, they should be able to easily manipulate table layouts, filters, and contents through point-and-click actions.
- **Alerts.** Users should be able to set custom alerts on metrics so they receive notifications when thresholds of performance are exceeded.

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