

Goals of Data Warehousing and Business Intelligence

Before we delve into the details of dimensional modeling, it is helpful to focus on the fundamental goals of data warehousing and business intelligence. The goals can be readily developed by walking through the halls of any organization and listening to business management. These recurring themes have existed for more than three decades:

- “We collect tons of data, but we can’t access it.”
- “We need to slice and dice the data every which way.”
- “Business people need to get at the data easily.”
- “Just show me what is important.”
- “We spend entire meetings arguing about who has the right numbers rather than making decisions.”
- “We want people to use information to support more fact-based decision making.”

Based on our experience, these concerns are still so universal that they drive the bedrock requirements for the DW/BI system. Now turn these business management quotations into requirements.

- **The DW/BI system must make information easily accessible.** The contents of the DW/BI system must be understandable. The data must be intuitive and obvious to the business user, not merely the developer. The data’s structures and labels should mimic the business users’ thought processes and vocabulary. Business users want to separate and combine analytic data in endless combinations. The business intelligence tools and applications that access the data must be simple and easy to use. They also must return query results to the user with minimal wait times. We can summarize this requirement by simply saying *simple* and *fast*.
- **The DW/BI system must present information consistently.** The data in the DW/BI system must be credible. Data must be carefully assembled from a variety of sources, cleansed, quality assured, and released only when it is fit for user consumption. Consistency also implies common labels and definitions for the DW/BI system’s contents are used across data sources. If two performance measures have the same name, they must mean the same thing. Conversely, if two measures don’t mean the same thing, they should be labeled differently.

- **The DW/BI system must adapt to change.** User needs, business conditions, data, and technology are all subject to change. The DW/BI system must be designed to handle this inevitable change gracefully so that it doesn't invalidate existing data or applications. Existing data and applications should not be changed or disrupted when the business community asks new questions or new data is added to the warehouse. Finally, if descriptive data in the DW/BI system must be modified, you must appropriately account for the changes and make these changes transparent to the users.
- **The DW/BI system must present information in a timely way.** As the DW/BI system is used more intensively for operational decisions, raw data may need to be converted into actionable information within hours, minutes, or even seconds. The DW/BI team and business users need to have realistic expectations for what it means to deliver data when there is little time to clean or validate it.
- **The DW/BI system must be a secure bastion that protects the information assets.** An organization's informational crown jewels are stored in the data warehouse. At a minimum, the warehouse likely contains information about what you're selling to whom at what price—potentially harmful details in the hands of the wrong people. The DW/BI system must effectively control access to the organization's confidential information.
- **The DW/BI system must serve as the authoritative and trustworthy foundation for improved decision making.** The data warehouse must have the right data to support decision making. The most important outputs from a DW/BI system are the decisions that are made based on the analytic evidence presented; these decisions deliver the business impact and value attributable to the DW/BI system. The original label that predates DW/BI is still the best description of what you are designing: a decision support system.
- **The business community must accept the DW/BI system to deem it successful.** It doesn't matter that you built an elegant solution using best-of-breed products and platforms. If the business community does not embrace the DW/BI environment and actively use it, you have failed the acceptance test. Unlike an operational system implementation where business users have no choice but to use the new system, DW/BI usage is sometimes optional. Business users will embrace the DW/BI system if it is the "simple and fast" source for actionable information.

Although each requirement on this list is important, the final two are the most critical, and unfortunately, often the most overlooked. Successful data warehousing and business intelligence demands more than being a stellar architect, technician, modeler, or database administrator. With a DW/BI initiative, you have one foot in your information technology (IT) comfort zone while your other foot is on the

unfamiliar turf of business users. You must straddle the two, modifying some tried-and-true skills to adapt to the unique demands of DW/BI. Clearly, you need to bring a spectrum of skills to the party to behave like you're a hybrid DBA/MBA.

Publishing Metaphor for DW/BI Managers

With the goals of DW/BI as a backdrop, let's compare the responsibilities of DW/BI managers with those of a publishing editor-in-chief. As the editor of a high-quality magazine, you would have broad latitude to manage the magazine's content, style, and delivery. Anyone with this job title would likely tackle the following activities:

- Understand the readers:
 - Identify their demographic characteristics.
 - Find out what readers want in this kind of magazine.
 - Identify the "best" readers who will renew their subscriptions and buy products from the magazine's advertisers.
 - Find potential new readers and make them aware of the magazine.
- Ensure the magazine appeals to the readers:
 - Choose interesting and compelling magazine content.
 - Make layout and rendering decisions that maximize the readers' pleasure.
 - Uphold high-quality writing and editing standards while adopting a consistent presentation style.
 - Continuously monitor the accuracy of the articles and advertisers' claims.
 - Adapt to changing reader profiles and the availability of new input from a network of writers and contributors.
- Sustain the publication:
 - Attract advertisers and run the magazine profitably.
 - Publish the magazine on a regular basis.
 - Maintain the readers' trust.
 - Keep the business owners happy.

You also can identify items that should be non-goals for the magazine's editor-in-chief, such as building the magazine around a particular printing technology or exclusively putting management's energy into operational efficiencies, such as imposing a technical writing style that readers don't easily understand, or creating an intricate and crowded layout that is difficult to read.

By building the publishing business on a foundation of serving the readers effectively, the magazine is likely to be successful. Conversely, go through the list and imagine what happens if you omit any single item; ultimately, the magazine would have serious problems.