

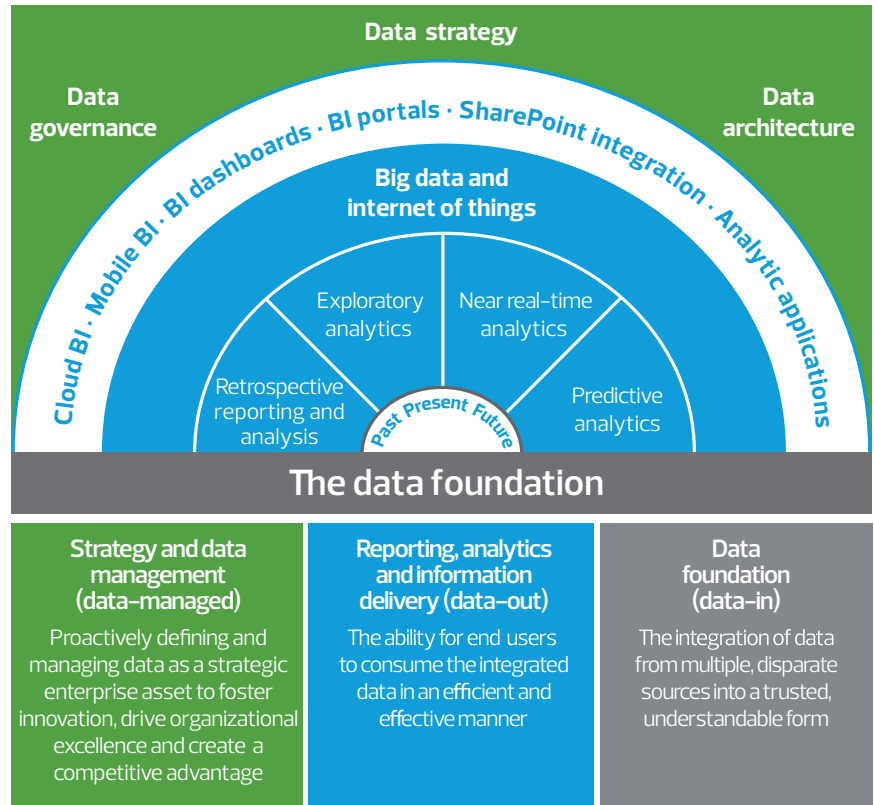
The importance of the right reporting, analytics and information delivery

Introduction

This is the second of a three-part series focused on designing a business intelligence (BI) solution.

In order to design a complete solution, there are three main areas of focus, as illustrated below:

- Strategy and data management (data-managed) encompasses proactively defining and managing data as an enterprise asset.
- Reporting, analytics and information delivery (data-out) encompasses the ability for business users to consume the integrated data in an efficient manner, and produce proactive, data-driven decisions on critical business initiatives. These data-driven decisions lead to enhanced competitive advantages, and further drive organizational excellence.
- The data foundation (data-in) encompasses the integration of data from multiple, disparate sources into a trusted, understandable form for use in reporting and analytics.



Criteria for the right reporting, analytics and information delivery

The right reporting, analytics and information delivery capabilities can be transformational for an organization. Possessing timely data and the proper reporting and analytic capabilities enhances the ability to make evidence-based decisions. Having multiple information delivery methods allows for the flexibility to get the information when and where it's needed.

At an increasing rate, the ability to perform sophisticated and innovative reporting and analytics is critical for all organizations. The following represent the criteria that should be considered for determining the appropriate reporting, analytics and information delivery capabilities for an organization:

Type

As discussed later in the "Implementing the right reporting, analytics and information delivery" section, there are multiple types of each.

With respect to reporting and analytics, capabilities range from communicating what has occurred in the past, alerting to what's happening currently to affect an outcome, and predicting what might occur in the future. Not all organizations need all capabilities available, and care should be taken to prioritize what capabilities are most critical to meet an organization's business objectives.

For information delivery, the capabilities range from analytic applications, BI portals, intranet integration and mobile BI. As is the case with reporting and analytics, not all organizations need all the capabilities available and should perform a similar exercise in aligning the information delivery capabilities with the ability to support and meet the business objectives of the organization.

Format

Different people prefer different ways of receiving and consuming information. Certain people prefer to have the reports sent to them, while others prefer the ability to operate in a more self-service manner. Satisfying everyone's

preference can be a Catch-22. While some formats might provide an increase in overall productivity, they can be costly. Providing formatting options for reporting and analytics capabilities is important, but should be a balance between the total cost of ownership and the ability to support the organization's business objectives.

Time

Timely information is critical to make the most informed business decisions. The closer the information received is to the time the information was created is generally preferred. However, implementing real-time or even nearly real-time reporting can cost more than the benefits received. As discussed later, the latency of the data must be examined with respect to the ability to support the organization's business objectives.

Content

Organizations generally have a significant amount of data available to them for use in decision-making. One of the key benefits of BI is to provide a mechanism to synthesize the information from a variety of sources into a single, integrated view to help make decisions. BI can also help people access the information they need to perform their jobs and make informed decisions without suffering from information overload.

Benefits of the right reporting, analytics and information delivery

As stated earlier, reporting, analytics and information delivery can have a transformational impact on an organization. It can fundamentally change the way in which people perform their jobs and the way in which an organization makes decisions.

Targeted delivery of data, reporting and analytics capabilities

In many organizations, people must filter through the mass of organizational data to find the information they need. This is not only a drain on an organization's resources, but can also significantly reduce the time spent performing the needed analysis to make business decisions. Targeting data, reporting and analytic capabilities to a person's role and group in an organization allows for increased time to perform analysis.

Increased productivity

Targeting the right reporting and analytics capabilities can significantly increase organizational productivity. Additionally, providing an information delivery method that matches the person's preferred method of consuming data can also greatly increase productivity. For example, if an organization has a largely mobile workforce, providing access to data, reporting and analytics on smartphones and tablets allows people to have the data and capabilities wherever they are instead of only when they are at their desks.

Employee satisfaction

In many organizations, people spend a great deal of time manually gathering and creating the reporting and analytics they need to do their jobs instead of performing analysis to make decisions. This can be a significantly frustrating situation. In addition, if the only place they can access

reporting and analytics capabilities is in the office, people can feel chained to their desks.

Integrating capabilities, such as mobile BI, can free people up to perform their jobs both within and outside the typical office environment. Providing targeted delivery of reporting and analytic capabilities and flexible information delivery can significantly improve overall job satisfaction.

Improved analysis and decision-making

Providing the right reporting, analytics and information delivery capabilities gives people the time to perform the required analysis to make informed decisions. In fact, instead of doing the minimum required analysis, people can develop more sophisticated and innovative analytics. Having the time to perform analysis instead of manually creating static reports can provide a significant boost to innovation within an organization.

Increased organizational communication and collaboration

The proper reporting, analytics and information delivery capabilities can free people to perform more in-depth analysis. Another potential benefit is improving organizational communication and collaboration. Everyone operating on the same reporting, analytics and information delivery framework (based on the same data foundation) facilitates a common understanding of the information of the organization. When this trust is established, people will inevitably spend time analyzing the results instead of critiquing the source of the reporting and analysis. This focuses the discussions in the right direction—making the right business decisions.

Consequences of the lack of reporting, analytics and information delivery

The lack of appropriate reporting, analytics and information delivery capabilities can have significant adverse effects on an organization. These can be viewed largely as having the opposite impact of the benefits listed earlier:

Information overload

Having to manually filter through the organization's information and then quickly cobble together reporting and analysis can result in erroneous results due to human error or different understandings of data.

Making less than optimal business decisions

When proper time is not allotted to doing thorough analysis, the result can be making business decisions based on incomplete and even conflicting information. Nothing is more frustrating for decision-makers than getting multiple analyses that provide different answers to supposedly the same question. Additionally, not having the information when needed in a readily usable format can result in making decisions based on the most current information, rather than the correct information.

Distrust in organizational data

Manual reporting and analytics can give significant latitude to the individual creating them for definition and interpretation. When this is the standard across an organization, conflicting results are inevitable. This, in turn, can cause inherent distrust

in the organization's data. Even worse, it can cause paralysis in decision-making, while determining which report or analysis to use.

Reduced productivity

As stated earlier, the right reporting, analytics and information delivery can be transformational for an organization. Unfortunately, not having the right capabilities in place can significantly reduce overall organizational productivity. Manual reporting and analytics, poor information delivery, and information overload all contribute to an environment where very little time is spent on analysis. Couple these with the inherent distrust in reporting and analytics, where conflicting results are far too prevalent, and there will undoubtedly be a significant amount of time reconciling results versus performing in-depth analysis.

Reduced employee satisfaction

Employees who can perform sophisticated and innovative analysis are invaluable to an organization. They provide the decision-making process with critical information that is well-thought-out and reliable. Subjecting them to an environment where the right reporting and analytic capabilities are not readily available can cause significant frustration. In addition, decision-makers who do not have the proper reporting and analytics also become frustrated. Finally, requiring people to only be able to perform reporting and analytics in the traditional office environment can result in people feeling trapped.

Implementing the right reporting, analytic and information delivery

Implementing the right reporting, analytics and information delivery is paramount to making evidence-based decisions. However, deciding on which capabilities to utilize can be a daunting task to many organizations. If the capabilities are examined as a set of categories, selecting which underlying capabilities are needed can become much more apparent. The diagram below outlines logical groupings of capabilities.

While the reporting and analytics categories are illustrated separately from the information delivery capabilities, the two should be examined together when developing the overall strategy and approach.

Reporting and analytics

Having the right mix of reporting and analytics capabilities is critical in the decision-making process. In the "Criteria for the right reporting, analytics and information delivery" section earlier, the concepts of the right type, format, timeliness and content of reporting and analytics were discussed. However, other considerations should include:

Past, present, future

Reporting and analytics can focus on understanding the past, providing the ability to effect current outcomes and trying to predict the future events. Different types of reporting and analytics can provide one or more of these capabilities. Usually, it is advisable for an organization to understand what has historically occurred before venturing into the more sophisticated and complex areas of nearly real-time reporting and predicting future events.

Different types of users can require different capabilities

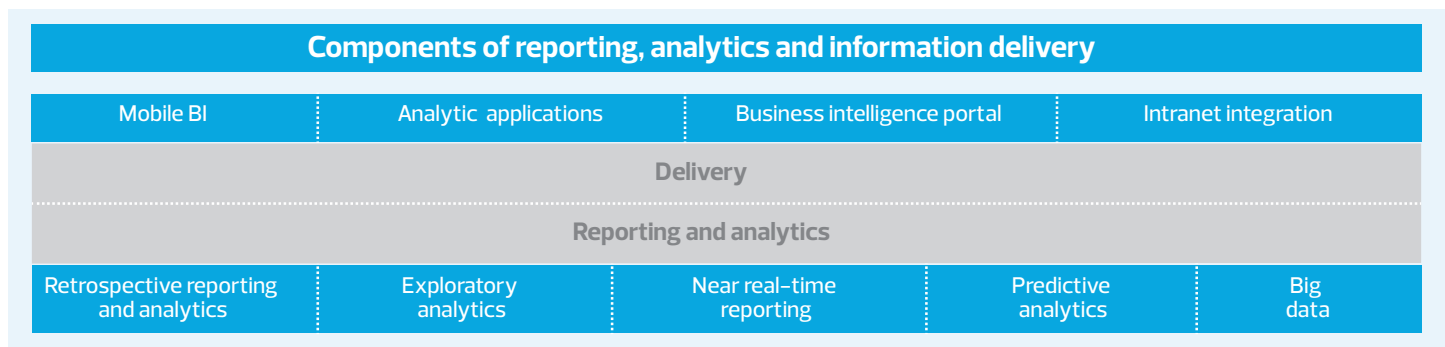
Most organizations have a diverse user population that can be loosely grouped into several categories. First, the majority of users are generally information consumers. They prefer to access the reports and typically perform minimal analytics (the deeper analytics are usually performed by others). Reports can be delivered to these users in a number of ways, including dashboards, emails, intranet, etc.

The second user group is more apt to perform deeper analytics. They require the ability to modify and run existing reports and drill from a summary level to a greater level of detail.

The third group of users can be considered power users and require not only the capabilities of groups one and two, but also the ability to create their own reports, analytic applications and dashboards. Understanding the user base and the required capabilities is an important factor in developing the overall reporting and analytics platform.

In order make sense of the range of capabilities available, reporting and analytics can be classified into the following buckets of capabilities:

- **Retrospective reporting and analytics**
Retrospective reporting and analytics focus on what has occurred in the past and why it occurred. This set of capabilities is the logical and critical first step to developing enterprise reporting and analytics. If an organization's retrospective reporting and analytics is not in place, the initial effort should focus there in most cases.



Examples of retrospective reporting and analytics include standard reports, ad hoc reporting, trend reporting, dimensional reporting and analytics (drill up and drill down), dashboards, and scorecards.

- **Exploratory analytics**

Exploratory analytics focus on identifying patterns in data that provide insights into an organization that are not usually possible through retrospective reporting and analytics. Exploratory analytics can also provide key inputs (such as statistical analysis, data correlations and predictive algorithms) into advanced or predictive analytics.

Examples of exploratory analytics include data mining, data discovery, correlation analysis, statistical analysis, cluster analysis and geospatial analysis.

- **Nearly real-time reporting and alerting**

Nearly real-time reporting focuses on what is currently occurring, with the intent of intervening to affect an outcome. In most cases, this is through a notification (such as an alert) of a condition that provides a time-sensitive window to take action to affect events

Examples of nearly real-time reporting include alerting, workflow and decisioning.

- **Predictive analytics**

Predictive or advanced analytics focus on examining past and current events in order to try and predict the probability of certain future events occurring. Predictive analytics often relies as heavily on external data as it does on internal data to develop models. Both retrospective reporting and exploratory analytics provide valuable inputs into predictive analytics.

Examples of predictive analytics include predictive models, scenario and simulation planning, and forecasting.

- **Big data**

Big data is a term without a current consensus definition in the marketplace. Some definitions center on huge volumes of data, while others focus on things such as integrating structured and unstructured data, providing predictive capabilities, or enabling nearly real-time analytics.

However, under the buckets of capabilities listed earlier, many of these focus areas are already addressed, often through traditional BI tools. Big data is, in reality, driven by the need to deal with integrated data that is so complex that traditional BI technologies cannot process it in a timely manner to be useful to the data consumer. This complexity can be driven by any combination of the volumes, variety or velocity of the data.

From a BI technology perspective, these buckets of capabilities are not necessarily mutually exclusive and, often, a single BI tool can fulfill multiple categories. By looking at the capabilities and focusing on each of them, a more informed technology decision can be made.

Information delivery

Gone are the days when employees sat at their desks for eight hours a day. Today's decision-makers are mobile and demand the ability to have information wherever they are working. By providing people with information at their fingertips, overall productivity and employee satisfaction tend to rise.

A range of options exists for the delivery of information and BI capabilities to data consumers. In order to make sense of the range capabilities available, information delivery can be classified into the following buckets of capabilities:

BI portal and dashboard

One of the most common delivery methods for BI is through a portal or dashboard interface. These can be tailored to meet the needs of a wide range of users. Often specific tabs are developed to suit the different information consumption preferences of different users. For example, some users prefer their information to be displayed at a high level or lean towards a more data visualization-centric approach. They can then select which areas to drill down to for more granular levels of detail. Others prefer to have an inventory of reports they can access to get to a greater level of detail immediately.

These reports often have capabilities such as filters and parameters that can be modified by the end users. Finally, a smaller population of users prefers the ability to create their own reports and analytics. All of these can be developed independently, but using a dashboard to deliver the BI capabilities in a single framework can be much more efficient and effective.

Intranet integration

Many organizations have already invested in an intranet that serves as the main information delivery method for the enterprise. In these cases, the organization often prefers to further leverage that investment and integrate BI capabilities. There are benefits to this, as many intranet frameworks have features such as single sign-on and built-in security that can be leveraged by the BI environment. Some intranet technologies, such as SharePoint, also offer additional reporting, analytics and information delivery capabilities.

Analytic applications

Often, BI capabilities are delivered through an analytic application designed for a specific business use or challenge. Analytic applications also offer the ability to couple capabilities such as workflow with BI capabilities to provide a more complete solution for a specific user group. Examples include BI technologies that are often used for budgeting and forecasting applications, revenue cycle analytics and marketing applications.

Mobile BI

Increasingly, users require the ability to have information delivered to them wherever they are. The popularity of smartphones and tablets allows workers to be more mobile and, accordingly, they want the ability to access the information they need to perform their jobs on the go. Mobile

BI is exponentially gaining popularity and is becoming more of a standard than a luxury. When using mobile BI technologies, additional considerations exist around such factors as security and presentation of information on a reduced screen that need to be addressed.

As is the case with reporting and analytics, the information delivery options are also not mutually exclusive. Having multiple delivery options is often necessary to meet the needs of a diverse data consumer community. This is especially true of providing mobile BI in addition to other options.

Technology considerations

While the reporting, analytics and information delivery options are listed out separately earlier, most BI tools provide capabilities that span multiple areas. For example, most BI tools that provide retrospective reporting and analytics have multiple information delivery options available (dashboards, mobile, etc.). When implementing BI capabilities, technology options must be examined with the ability to meet business goals and objectives in mind, as well as the overall total cost of ownership.

Conclusion

Providing the right mix of reporting, analytical and information delivery capabilities can have a tremendous effect on an organization. Implementing an overall BI strategy and a framework for the ongoing management of the BI ecosystem are critical components to have in place to increase the overall success of the data analytics environment.

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