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Beyond Traditional BI

Traditional business intelligence (BI) technology assembles historical data, presents it in forms such as reports, dashboards and scorecards, and analyzes it; it is deployed to give analytical staff and senior executives information they require to decide on the strategic course their business ought to take. A few years ago, users saw that they might apply BI’s data assembly, visualization and analytical capabilities to their operational needs and started using the technology to help managers make tactical decisions about their business units.

It quickly has become clear that the data requirements of operational business intelligence are different from those of traditional BI, and it has become clear as well that it requires different visualization and analytical tools. These differences continue to challenge most companies. We will explore what those challenges are and discuss how new technology can meet them in your company.

The differences between traditional BI and operational BI are a useful starting point from which to explain their data requirements and ways in which they diverge. Those differences are rooted in the purposes of each system, as well as in the number and types of users of each.

Traditional business intelligence looks to the past to understand how the business has performed and to analyze what will improve business performance going forward. For that historical approach to analysis, traditional BI relies on data stored in formatted business records usually found in data warehouses or marts. The data assembly requirements include bringing data into the system from various groups and departments within the company, as well as from trading partners outside the company. However, because this is always done after the fact, there is no need to synchronize the timing of traditional BI analysis with ongoing operating or financial processes at the company.

Data delivery to traditional BI users typically comes in the form of dashboards, printed reports or data transferred into other applications, such as Microsoft PowerPoint for presentation or Excel for further analysis. Whatever form they take, the timing of the deliveries is not critical to the success of traditional BI.

The user group for traditional business intelligence is typically small and high-level, consisting largely of two groups: business analysts and financial professionals, and senior managers and executives. The decisions that result from traditional BI analysis have a relatively long-term focus that affects the company’s business plans, and so they are not generally time-critical with respect to day-to-day operations.

New Users, New Needs

Operational business intelligence, in contrast, focuses on those day-to-day operations of the company, and it is used by a wide array of line management personnel who are responsible for making decisions that drive the current business performance of their units. That difference has several implications for how much and what type of data operational BI needs, what types of decisions its users make, how the business applies those decisions and the number and type of users that an operational BI system must serve. It also has implications for how an operational business intelligence system presents and analyzes data.
Operational BI assembles data from the business as it happens, reports on it and analyzes it. While this set of processes uses some historical data, it relies much more on current transactional information. It is not unusual for operational BI systems to require real-time access to data and to update its data stores several times during a day. And their mission to make operational decisions requires more types of data and more of it than the longer-term analysis of traditional BI.

More people use operational than traditional business intelligence systems, and most of those people are not at that senior managerial or analytical level. As a result, operational business intelligence systems have to scale to accommodate much greater user demand, which may require additional hardware and networking resources, as well as different types of software able to sustain high usage volumes. Operational BI systems also perform reporting and analysis differently than traditional systems.

**Challenges for Operational BI Systems**

Decision-making in both traditional and operational business intelligence environments is collaborative. However, the decision latency that prevails in traditional BI environments is unacceptable in environments where decisions may affect business operations on the day they are made. That means that the decision-making process supported by operational business intelligence has to keep moving at a fast, steady pace. To do that, operational BI systems have to assemble a huge volume of data, analyze it and present it in accessible ways to many users.

Not only do the types of data presentation and analysis used in operational business intelligence have to be geared toward large numbers of people; few of those users have the advanced technical and analytical skills of those using traditional BI systems. And even if the skill levels are comparable, those users do not have the luxury of time because they need to make operational decisions immediately. They need quickly to access, absorb and act on information and analytical results.

The lack of timely access to information – latency – is one of the most difficult challenges to using operational business intelligence systems successfully. In a recent Ventana Research study of operational business intelligence, for example, nearly three-quarters (71 percent) of respondents said that reducing the time it takes to update their data was somewhat important or very important. In addition, nearly one-quarter (22 percent) of the respondents said that adequate business intelligence analysis requires real-time data, and 39 percent said they require daily or more frequent updates.

Collaborative decision-making in an operational BI environment depends on shared data, but data access often is confined to those who use it regularly. It is critical to share information to be able to improve the quality of decisions. But many organizations do not enable collaboration or understand it to be important; our operational business intelligence study found only a small percentage of users who rated collaboration as a high priority.

Compounding the collaboration problem are data silos, which effectively hide data from many users. Departmental transaction data that users require for operational business intelligence frequently resides inaccessibly in other functional or
departmental areas of the enterprise. Even when it is available, automated transfer mechanisms are not in place, so users must extract it manually, which can be difficult and time-consuming to do. It can be even more difficult to acquire data for operational BI from external sources, such as trading partners and industry associations. And some of the data may be unstructured and therefore inaccessible to traditional tools, further compounding the problem.

Integrating data from all the disparate sources into the operational business intelligence environment requires intra-company and inter-partner collaboration. To enlist the cooperation of these separate units requires executive support and diligent bridge-building. What’s more, an operational extraction, transformation and loading (ETL) environment of some sort has to be present at the front of the system to automate transport of the data. This extra step can add overhead to the process, of course; as well, it sometimes can create disparity in versions of the data. An effective operational BI system can provide dynamic access to data across data silos, making it possible to provide real-time information to operational workers.

**Operational BI Results**

Executives and management consultants agree that effective business process management involves pushing day-to-day decisions down to the line-of-business operations managers. Operational BI supports that by giving them access to information and tools that help them make decisions that improve the performance of their business.

The chief benefit of moving operating decisions to this level is that it improves the quality and speed of the decisions. Making that move through operational business intelligence can lead to several business benefits.

For example, you can increase revenue by using operational BI to create a more effective product mix, optimize distribution techniques or find better marketing partners. Operational business intelligence can enable you to manage target marketing programs better by being able to measure the responsiveness of various segments and recalibrating more quickly and precisely as you react to changes in demand.

You can control costs by using operational BI to reduce waste and scrap and to increase the productivity of materials and labor. You can find and evaluate less costly manufacturing partners or parts suppliers and determine how to utilize plant capacities more fully.

You can improve customer service by using operational business intelligence to create a more responsive call center operation or more responsive restocking programs. Operational BI can help you bring new products to market more quickly or to clear inventory in a profitable way. You also can optimize shelf space to maximize product exposure at lower costs.

**Demands on Technology**

A combination of modern technology and careful management can remove barriers that stand in the way of a successful business environment. Technology for
operational business intelligence is similar to traditional BI systems in that it gathers and presents information to users, but it is different on several counts. Operational BI has to serve more and less technically oriented users, be more responsive to ad-hoc requests and be able to add new sources of data quickly as business models and product mixes change.

As well as accessing historical financial and operating data, operational BI also makes heavy use of current transaction data, along with a range of data – both structured and unstructured – from other internal and external sources.

Therefore, a powerful and flexible data acquisition system is a primary requirement of an operational BI system. It has to be able to access key data in real time and other data manually or automatically. It also has to be able to absorb unstructured data, and do all of this in a rapidly responsive way.

“Responsive” in this case means that users have to be able to specify where and when to get new data that was not previously included in the system. Decisions based on operational business intelligence often cannot wait for IT personnel to create a data acquisition project when new sources of information are necessary to support those decisions.

Presentation for operational business intelligence systems can use the same basic dashboard paradigm that is popular in traditional systems and retain the basic reporting capabilities. Those include the ability to drill down into data, to change the type of graphic being used and to move table columns around. Here again, however, operational BI requires certain changes.

The dashboards must offer more self-service for users. Just as they can’t wait for IT to make changes in data sources, users also can’t wait for IT to adjust the dashboards to present new types of data or to use data in a different way. Users must be able to access data on their screens quickly and manipulate it as soon as they need to.

At the same time as demand increases, the types of analysis available on the operational BI dashboards must be manageable for the users accessing this type of system. Most will not be technically competent enough to understand high-order statistical analysis, and they probably do not have time to wait for such calculations to be made. In addition, the larger number of users may necessitate, in order to keep the system responsive, a simpler analytical and graphical presentation environment. The analytical tools must be geared toward ad-hoc and what-if types of analyses, rather than the longer-term analysis and projection models used in traditional BI systems.

**Closing the Management Information Gap**

Operational business intelligence might better be called “pervasive business intelligence” because, if effectively implemented, it will be used throughout the operating side of the organization to improve its business processes. The right technology applied through the leadership and support of committed management will enable a company to operate as an intelligent machine that responds to inputs from its line managers, who use its feedback to improve their decisions.
In addition to direct benefits such as those cited above, there are indirect benefits to operational BI. The nature of this approach requires and facilitates greater intra-company and inter-partnership collaboration and integration, not just of data but of operations. That collaboration in turn can produce further discoveries about how to operate the business better.

But the bottom line is of course the bottom line: Operational BI brings the day-to-day operations of the company and the line managers responsible for these operational processes in line with modern management by pushing day-to-day decisions down to them and placing before them the information and tools they need to make effective operational decisions. Operational BI improves organizational performance by expanding and localizing decision-making capability, eliminating latency, enabling collaboration and improving access to siloed data, all of which will significantly improve business performance.

**About Ventana Research**

Ventana Research is the leading Performance Management research and advisory services firm. By providing expert insight and detailed guidance, Ventana Research helps clients operate their companies more efficiently and effectively. We deliver these business improvements through a top-down approach that connects people, processes, information and technology. What makes Ventana Research different from other analyst firms is our focus on Performance Management for finance, operations and IT. This focus, plus research as a foundation and reach into a community of more than 2 million corporate executives through extensive media partnerships, allows Ventana Research to deliver a high-value, low-risk method for achieving optimal business performance. To learn how Ventana Research Performance Management workshops, assessments and advisory services can impact your bottom line, visit [www.ventanaresearch.com](http://www.ventanaresearch.com).