Three Trends in Business Intelligence Technology
Perfect Storm or Perfect World?

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Published: April 4, 2006

(Article URL: http://www.b-eye-network.com/view/2608)

As the business intelligence marketplace matures, three trends are impacting the direction of the industry.

This year is shaping up to be one of great changes in the business intelligence (BI) technology arena. Will these be for good or ill? That remains to be seen. In any case, here are three trends that are already making a huge impact on the technological landscape and some thoughts about whether these are good or bad for the industry.

Trend # 1: Consolidation of BI Companies

You would have to live under a rock to not have read or heard something about a business intelligence company gobbling up or forming exclusive relationships with another BI company. These acquisitions / relationships seem to fall into one of three categories:

- Data quality vendors are being scooped up. There are fewer standalone data quality vendors these days. Many have now become part of full suite vendors (those offering everything from ETL processing to the ultimate delivery of BI analytics) or part of ETL packages. These purchases add to data integration capabilities by improving the data that is being integrated.
- EII (enterprise information integration) vendors are also being purchased or forming exclusive partnerships with other BI vendors. These strategic allegiances broaden the data integration capabilities of either the standalone ETL or full-service vendors by adding the ability to deliver real-time integration capabilities.
- Small niche players are being acquired before they even make a name for themselves. IBM and Oracle, in particular, seem to have a propensity to purchase these innovative and bright point-solution vendors. These additions give these big companies quick solutions such as master data management (MDM) or customer data integration (CDI) applications.

So – is this a good thing? On the plus side, consolidating your business intelligence solution into the hands of a single vendor makes life simpler in terms of contracting, a single vendor interface and a reduction of finger-pointing when things don't go according to plan. There is no doubt an appeal to the

one-stop-shopping mentality.

The goal of the full-service vendor is to provide a fully integrated, end-to-end solution that satisfies the majority of your needs. These vendors state that their offerings significantly reduce the cost and implementation time. These products simplify maintenance, make enhancements easier and shorten the learning curve for implementers.

On the negative side, just because a company bought a technology does not mean that the technology is instantly integrated into the rest of the vendor's offerings. You may still struggle with integration issues for several years after the technology was acquired. Second, there is a question of focus. The best-of-breed vendors have a single mission in life – to make the best solution for a particular problem. Their solution is usually a surgical strike – complete, fast and elegant. The full-service vendors usually can't afford to expend that kind of energy on a point solution, especially when they are applying a lot of their energy on integrating their technologies. Their compromise may be a suite that meets the *majority* of your needs, but not all. When shopping for best-of-breed versus full-service technologies, look at the partnerships between companies. You should get a pretty good idea of who may be next on the auction block.

Finally, no single business intelligence vendor has a commanding lead in terms of sales or market share. That means that there is still plenty of room for both types of vendors. It is still a place where small, innovative technologies can effectively compete against their much larger and more established brethren.

Trend # 2: Moving from Strategic BI to Operational or Right-Time BI

The big push in BI analytics is to shorten the latency between when a business event happens and an action is taken. According to Dick Hackathorn, this latency has three components – data preparation latency (the time it takes to get the data ready for analysis), analysis latency (the time it takes to get the results of an analytic operation) and decision latency (the time it takes for the person receiving the results to understand what action must be taken). For operational business intelligence to be effective, these three latencies must be reduced to nearly zero time.

To reduce data latency, we see more and more virtual BI components being created, including virtual operational data stores (ODSs) and data marts using enterprise EII technologies. If your operational data is in fairly good shape (minimal integration and data cleanup required), a virtual ODS or even an oper mart may be a solution to reducing data latency. However, it is mandatory to monitor the effects of this environment on the operational systems.

For analysis latency, we are seeing technologies that offer business activity monitoring (BAM) or operational dashboards as inline operational analytic engines that constantly serve the results to the business user and send alerts or alarms immediately when thresholds are exceeded. Key performance indicators (KPIs), important metrics delivered hourly or even more frequently, and consolidated current operational results can be displayed through the dashboards or portals, giving the operations personnel insight into key events that are occurring.

While speeding the collection, analysis and display of operational data is certainly useful to the business, it must be remembered that not *all* business intelligence data must be included. Many IT implementers do not perform thorough due diligence to determine precisely what data must be included in an operational BI application. They make the catastrophic error of including as much as they can, forcing all data to be "real time," thereby creating an unwieldy and unmanageable BI world.

The message is to carefully evaluate the push for real-time analytics. Understand the business need completely, and you may find that it is really only a very small percentage of data that must be rushed into the hands to the business consumers. Most analytic data can be hours, days or months old and still be relevant to the decision-making process.

Trend # 3: More Sophisticated Analytics and Data Visualization

At first there were simple reports and queries; then came multidimensional analysis. While cubes and star schemas are still very popular, there is a movement now toward more complex, deeper analytics using data mining, statistical methods and technologies that support pure ad hoc, unplanned forms of analytics. Perhaps it is just the natural evolution of business intelligence toward a more mature environment. Certainly, the level of business expertise is much more sophisticated and advanced than it was 10 years ago, and the ease with which even non-skilled users can perform these complicated analyses increases their adoption and utilization.

These technologies have raised the awareness of predictive analytics or guided decision-making capabilities, making it possible to embed these in operational flows. Companies are now able to perform operational or right-time BI, giving the front-line workers the ability to access and use the results of these analytics, combined with operational data, for their daily activities.

As exciting as these are, it must be remembered that these capabilities don't just come into being serendipitously. They must fit into the enterprise's overall BI architecture and technological infrastructure or chaos will surely reign. Operational BI also requires a thorough understanding of the business processes or workflow that it will enhance. Without this understanding, BI implementers cannot know how or where to embed these valuable insights for maximum benefit.

There are other technological trends in our business intelligence marketplace, but these seem to be the ones having the highest impact on business intelligence today. It would be interesting to revisit these trends in six months to see if other trends have emerged to captivate our attention and change the direction of our still young and growing industry.

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