

Automated Business Intelligence

2008

Delivering real business value,
quickly, easily, and affordably.



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Executive Summary

For years now, the greatest weakness of the Business Intelligence (BI) industry has been its failure to deliver a complete, effective, and affordable solution. The traditional approach requires cobbling together complex solutions with disparate tools from different vendors, resulting in long implementation times, staggering services and software costs, and high failure rates. For these reasons, BI is often limited to the few large companies that can afford it – implementations are inflexible, limited in scope, and used by very few people.

Fortunately, a revolution in BI tools and techniques now makes it possible to better meet customer needs with an *automated* BI solution. The automated solution is a paradigm-changing model that solves traditional problems and creates entirely new opportunities. This White Paper explores how traditional approaches fall short, what the automated solution and its benefits look like, how the on-demand delivery model best represents the integrated stack necessary for automation, and how the automated, on-demand model brings the benefits of BI to a far broader audience than ever before.

A large industry, still searching for an answer

The demand for BI is strong and growing, with \$18 billion in 2007 revenues and an expected compound annual growth rate (CAGR) of 8.6% through 2011. BI has been named the top priority for CIOs for three years running, according to Gartner's 2008 CIO Survey. This priority comes, however, in spite of well-publicized failure rates and companies' ongoing struggle to implement, scale, and manage BI applications efficiently and cost effectively. Typical BI projects include multiple vendors and/or numerous disparate applications and tool sets, necessitating significant manual work, time, and cost to move data throughout the process. Some challenges companies face with traditional BI include:

- Stand-alone, insufficiently-integrated BI tools
- High cost and time requirements for building new BI solutions
- High maintenance costs and management requirements for existing in-house BI infrastructure
- Poor performance and limited flexibility after implementation

Automated BI: the future is now

A seamlessly integrated, end-to-end BI platform overcomes the failings of traditional solutions. When a single vendor, with a single codebase, using a single set of metadata, builds a single, complete stack that encompasses historically disparate functionality- ETL Engine, Data Warehouse, OLAP Engine, Reporting Engine, and more –a step-change in value happens. For the first time, the process of developing, deploying, and maintaining BI solutions can be streamlined with automation. This results in faster time to value, increased scalability of both users and data, and significantly lower cost and resource requirements. The benefits of BI are finally accessible to a much broader range of companies and people.

The “End-to-End” Solution That Wasn’t: The Problem with Traditional BI

Traditional business intelligence solutions require expensive software purchases, long implementation cycles, and costly maintenance. Unfortunately, they also offer disappointing results, since the high cost and inflexibility severely limits the system’s ability to serve ever-evolving business needs effectively. The result has been severely limited or scrapped implementations. “How is this so hard,” IT execs are asking themselves, “When I was promised an ‘end-to-end’ solution?” The quick answer: it wasn’t really an end-to-end solution.

Integration by acquisition means no integration at all

The fallacious approach of “integration by acquisition” is readily apparent in the business intelligence industry. SAP, for example, appears to have a completely integrated, “end-to-end” solution. In reality, however, these products were developed independently and were not architected to work together. Some were developed internally, while others were bought as part of the acquisition of Business Objects. In turn, Business Objects had bought other independently-built BI tools. Any large BI vendor’s product list will show a myriad of different tools and products – from ETL to Data Warehouse to OLAP Engine to Reporting Server to Dashboarding Server – none of which actually work well together. What many vendors are truly offering are stand-alone tools marketed and sold under one company umbrella as an “end-to-end” solution.

The ongoing “mega-vendor” consolidation trend in BI only exacerbates the problem. As large vendors acquire more firms, they are less and less likely to build a cohesive, end-to-end BI stack from the ground up. To do so cannibalizes current offerings, creating unease amongst shareholders. Instead, they market the products as a combined solution without ever actually integrating the components. As a result, even if a customer purchases all of their desired BI components from one vendor, they are still getting distinctly different, stand-alone solutions at every step of the BI process.

There is no such thing, therefore, as traditional, end-to-end Business Intelligence.

The end result of this fragmented offering: manual integration and the inability to automate. With traditional solutions, each piece of the puzzle is too dependent on the others to be automated individually; the overall solution is too fragmented to be automated as a whole. The resulting manual integration is painful and expensive, requiring high coordination and communication costs across the various IT teams responsible for the components of the overall solution. Development slows and becomes rigidly fixed; in-process changes are almost impossible, practically guaranteeing that when the implementation is finally complete, it will probably not meet business needs due to changed circumstances.

The intensifying search for a true solution – a market gap grows

Even as industry consolidation makes the development of an integrated and automated solution less and less likely from traditional vendors, marketplace trends are dramatically increasing the demand for an automated solution. This demand is being driven by the following:

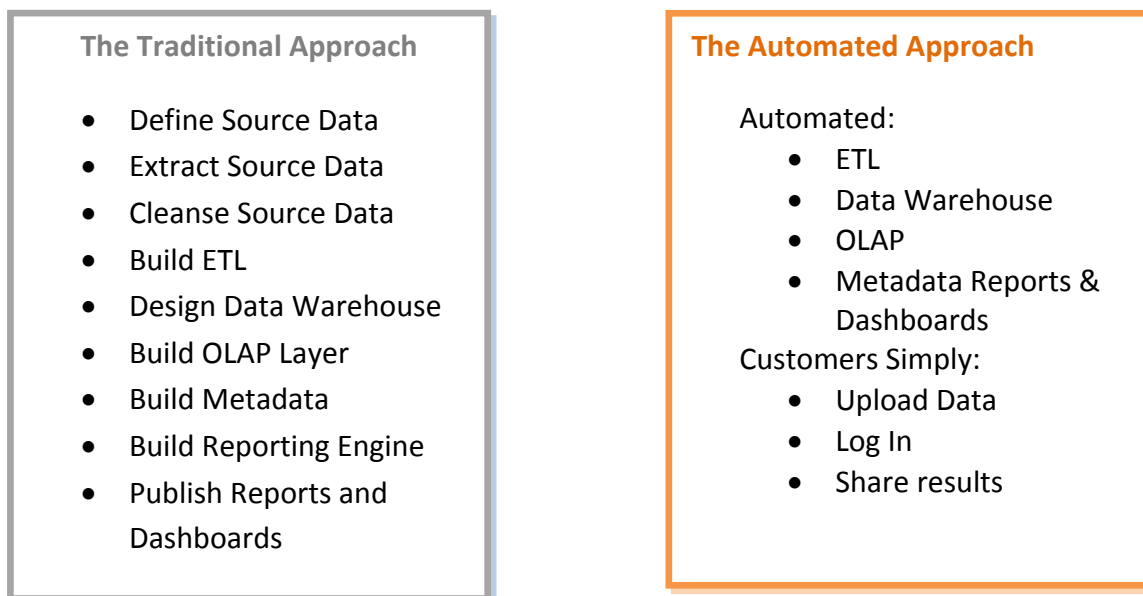
- The exponential explosion in data and the importance of that data for competitive advantage
- The increase in non-IT users who are comfortable with technology and data analysis
- BI initiatives that are increasingly led by Sales, Marketing, and Operations groups
- The increasing number of independent BI projects being conducted simultaneously, for different audiences (executives, departments, individuals, and more) all of whom have different goals

It has become increasingly clear that companies are in need of easy-to-build, easy-to-use analytics that can quickly deliver real business value to the many constituencies that need insight effectively to do their job. Since traditional vendors are still struggling to meet the *old* corporate needs, they are even further behind in meeting these new needs. This has created a large market gap -- a tremendous opportunity best addressed by a vendor with the singular purpose and vision of building a pure, automated, end-to-end BI solution. This new generation of business intelligence providers is likely to be represented by smaller startup companies, companies without the pressures of existing product lines and legacy revenue streams; one with a tightly focused team of people working closely together to meet customer needs by building a modern, complete solution from the ground up.

The Automated Solution: A New Paradigm for BI

Solutions built with conventional BI tools only satisfy a fraction of the Business Intelligence needs of most organizations. Perhaps this is the reason that BI continues to rank as a top priority in CIO surveys, despite years of implementations. Much of this customer satisfaction shortfall can be attributed to the hassle and delays of building, maintaining, and integrating the disparate components of today's BI solutions. Due to the difficulty, companies often dramatically scale back their expectations or give up entirely, never attaining the true value of what BI can offer.

The ideal solution automates the onerous aspects of BI, made possible by the integration of capabilities across all layers of a unified architecture. The different approaches are contrasted below:



Automated solution yields benefits throughout an implementation

Below are just some of the ways an automated solution positively impacts a BI project:

ETL Engine

Traditional Method: Customers are saddled with the painful and difficult process of manually mapping source data and creating definitions, mapping to tables, and then mapping to a data warehouse production environment. This process is repeated for *each* BI initiative within the organization.

Automated: The entire process is automated with intelligent source data analysis, data extraction, loading, and transformation to automatically create staging and warehouse tables.

Data Warehousing

Traditional Method: Customers are either confronted with multiple data marts and warehouses fed by multiple ETL processes, limiting the scope of any one application, or they have one Enterprise Data Warehouse (EDW) that provides scale but severely limits the flexibility of delivering new analytical applications.

Automated: Enables rapid development of new stars in the data warehouse; there is greater scope and flexibility since each application can have all the data required within it, without forcing a single EDW approach.

Integrated OLAP Engine

Traditional Method: Customers develop another set of metadata to navigate universes, subject areas, and cubes or to build custom cubes for analysis.

Automated: It is just another part of a complete, end-to-end platform; metric and dimensional metadata are automatically created and maintained from the underlying star schema.

Presentation Layer

Traditional Method: IT needs to build and publish unique dashboards and reports for each different type of user in the organization.

Automated: The system analyzes the source data, identifying the most interesting metrics and dimensional attributes, creating initial reports and dashboards highlighting those measures. Little to no configuration is required to publish complete, accurate, and current data.

The automated solution – faster, cheaper, more flexible

In addition to technology benefits, an automated BI solution also yields the following business benefits:

- **Rapid time to value:** Results are delivered far more quickly, putting valuable analytics in the hands of business users who have the greatest impact on revenue and profits
- **Dramatically more affordable implementations:** Results are delivered at significantly less cost, since both the software and services components are dramatically reduced.
- **Greater flexibility:** BI is accessible to business users, who initiate and complete their own BI projects, so each system can readily keep pace with ever-evolving business needs.

Ultimately, the results delivered by an automated solution will be of far greater value to the customer than traditional BI results; they will be not only timely, but accurate and consistent across departments and functions. With the entire organization working from one set of metadata, they will capture a complete picture of the business and be able to make effective decisions without hesitation.

Software-as-a-Service: Automated BI, On Demand

Software-as-a-Service, or SaaS, is a delivery model in which an application is hosted by the vendor and provided to customers across the Internet. No application downloading or installation is required. Users simply access the system through a web browser, paying only a monthly usage fee. Salesforce.com is an example of a SaaS company in the CRM software category.

Reducing the cost and increasing the reach of enterprise software

The SaaS model is growing in acceptance. According to a recent IDC report, SaaS software spending, irrespective of category, is expected to grow at a compound annual growth rate of 32.2% (CAGR), from \$5.7 billion in 2008 to \$14.8 billion in revenue in 2011. Currently, two out of three businesses have either bought or are considering buying software via a subscription model. McKinsey & Co. reports that CIOs considering adopting SaaS applications in the coming year has grown from 38% to 61%.

The SaaS model of software delivery has similar advantages to those of the automated BI solution. These benefits include:

- Lower upfront and ongoing costs
- Faster implementation and time-to-value
- Reduced IT involvement; no integration and maintenance of disparate products
- Enterprise-level architecture and functionality delivered to a much broader market

An automated solution is fundamental to a BI SaaS offering

For Business Intelligence, the SaaS model and the automated solution go hand in hand. If a BI solution is delivered on demand, then it *must* be a complete, fully integrated solution – which means parts or all of the overall process can and should be automated.

However, the SaaS model is relatively new to the BI space; only a handful of vendors presently offer on-demand solutions. Unfortunately, most of these vendors are either narrowly focused on delivering a niche application or have limited or lightweight functionality. For example, LucidEra focuses on delivering a sales analytics application for Salesforce.com data only. This narrow focus has enabled LucidEra to pre-configure its application to deploy new Salesforce.com customers quickly – but it means that LucidEra is incapable of meeting any other customer needs, such as providing insight into any data from non-Salesforce.com applications.

Due to this narrow focus of existing vendors, a company providing an on-demand, automated solution that addresses *broad-based* BI challenges would meet a large market need in the industry.

Automation removes the high entry costs of BI – bringing the value of BI to anyone

With all of the “heavy lifting” performed in an automated way over the web, customers get accessible, affordable, and timely solutions that are rich in functionality. By reducing the historically high initial costs of Business Intelligence solutions, BI is accessible for the first time to individuals, small groups, and medium-sized businesses. The benefits of SaaS-delivered automated BI are compelling:

- Limited upfront costs and IT resource requirements
- Minimal, predictable ongoing costs
- Instant availability of uploaded data
- Ability to analyze data across multiple sources, departments, and spreadsheets
- Ability to grant access to others within the organization over time
- Scalability -- organizations can begin with a small number of users and a small set of data, easily scaling to an enterprise level platform

Powerful *and* simple to use? SaaS BI cracks the contradiction

In the software industry, the terms “powerful” and “simple to use” are typically viewed as mutually exclusive terms. But with an automated SaaS solution, all of the complexities are handled by the vendor and kept completely behind the scenes. The end user simply uploads their data and logs in. The end user, rather than a vendor’s salesperson, proves “powerful” and “simple to use” to themselves.

Automated BI: Modern Solution Meets Customer Needs

As technologies and services mature, they become “sustaining.” That is, their price and performance improves only incrementally over time. The traditional Business Intelligence industry today can be described as a sustaining industry. The applications continue to inch along, and no new, ground-breaking technology is introduced. Similarly, the corresponding services model, whereby BI implementations are costly, time consuming, and include the headache of integrating many disparate systems, is extremely inefficient. Yet there has been little to no improvement in the delivery model over the past several years – and current business pressures ensure that little to no progress will be made in the coming years either.

As this whitepaper has discussed, an automated Business Intelligence solution represents a paradigm shift within the industry. An offering of this sort creates an entirely new playing field; reducing prices, drastically altering delivery processes, introducing a new pricing model, and creating an entirely new market.

This new model presents a huge challenge to traditional BI vendors, who are less flexible and under intense pressure to sustain existing technologies. And ultimately, should these “megavendors” decide to step back and dedicate years to building a fully-integrated and automated solution, their market is still limited by their sales, pricing, and delivery models. Large enterprise software vendors are ill-equipped to develop Software-as-a-Service solutions that have greater appeal to small and medium business, due to the lower startup costs. Even if one makes the assumption that they accomplish these challenges, they are severely limited in their ability to sell and market a solution for small businesses, having firmly established themselves as enterprise brands.

The company that delivers the automated BI solution, built to solve modern business intelligence needs and scalable from small business to global enterprise, will capture the early, foundational market. They will establish customer relationships, gain market share, and build long-term brand awareness. With such a large customer opportunity going unmet, the call is too compelling to be ignored for much longer.