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Deliver Process-Driven Business Intelligence With a Balanced BI Platform

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To enable process-driven business intelligence, IT organizations must bolster their BI platform across a balanced set of new capabilities, including information dissemination, development and integration, and analysis.
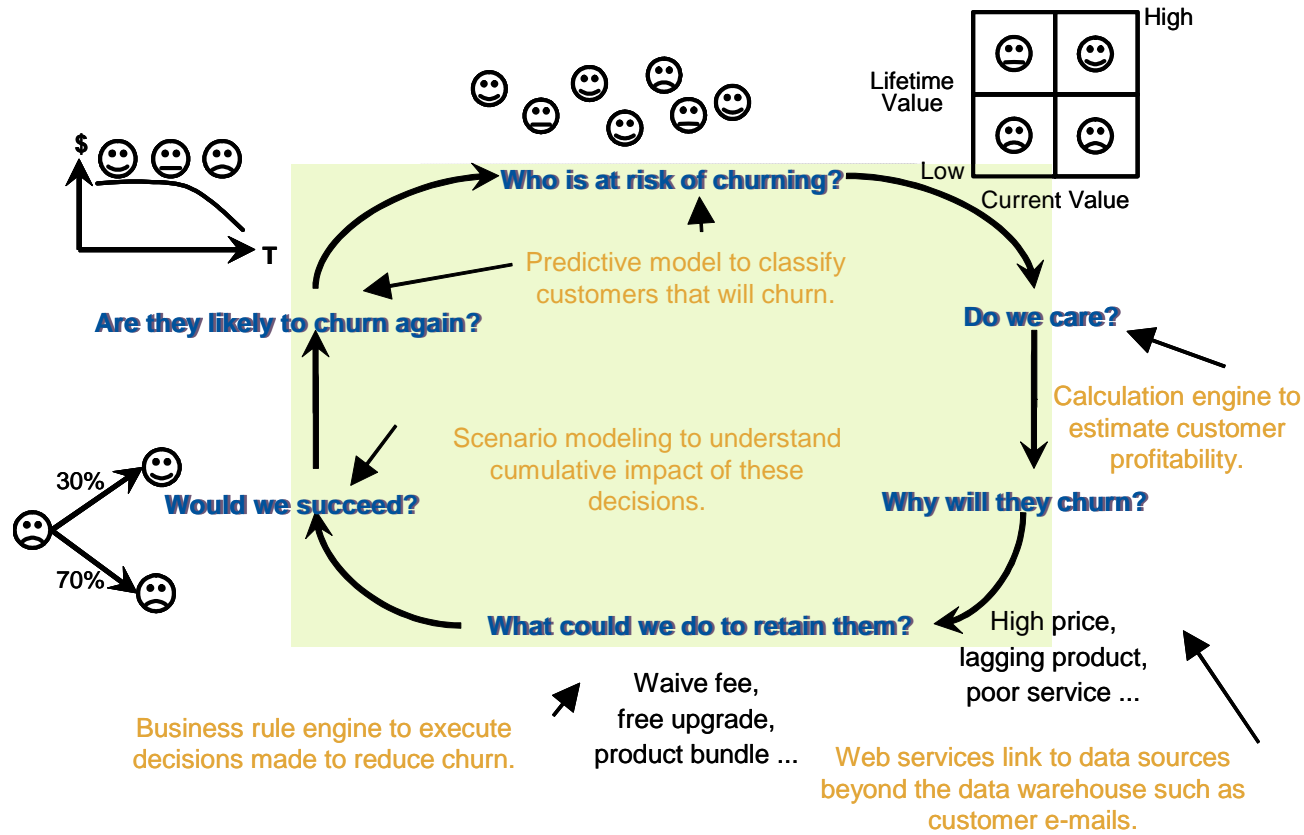
ANALYSIS

Most business intelligence (BI) deployments focus almost exclusively on delivering information to users. During the next five years, a pervasive BI continuum will emerge that includes user- and process-driven BI. Process-driven BI is designed to insert BI, such as metrics, calculations, query results and analytical insights, directly into the workflow of a business process. Unlike user-driven BI — which is dominated by mature reporting and online analytical processing (OLAP) solutions — process-driven BI requires bolstering BI platforms with new capabilities (including Web services, workflow/collaboration, business rules, predictive analysis and calculation/modeling engines). Increasingly, BI projects that are overly focused on reporting to users without a process orientation will not drive competitive differentiation.

Measuring the Business Benefit

The notion of user-driven vs. process-driven BI is not a semantic distinction; it is a significant difference in the architecture of a BI strategy. In a user-driven BI strategy, the goal of BI is to make users smarter by equipping them with the right information and analytical capabilities. Under this approach, the organization derives the benefits of BI indirectly through the users — assuming that the users will perform better as they conduct business. Process-driven BI is a more direct approach to benefit the business, and it is one that can be more easily measured as part of a corporate performance management (CPM) program. For example, consider a user in marketing responsible for reducing customer churn. Under a user-driven BI architecture, the focus would be to provide the right information to that user (such as historical reports about the customers that churned last month). This information may be helpful to the user, sparking some ideas about how to reduce churn next month, but it will be difficult to measure this benefit. Under a process-driven BI strategy, numerous BI capabilities will be inserted into various steps of a workflow designed to reduce customer churn. Beyond having a more direct business benefit, this approach makes it much easier to measure the effects derived from BI (see Figure 1).
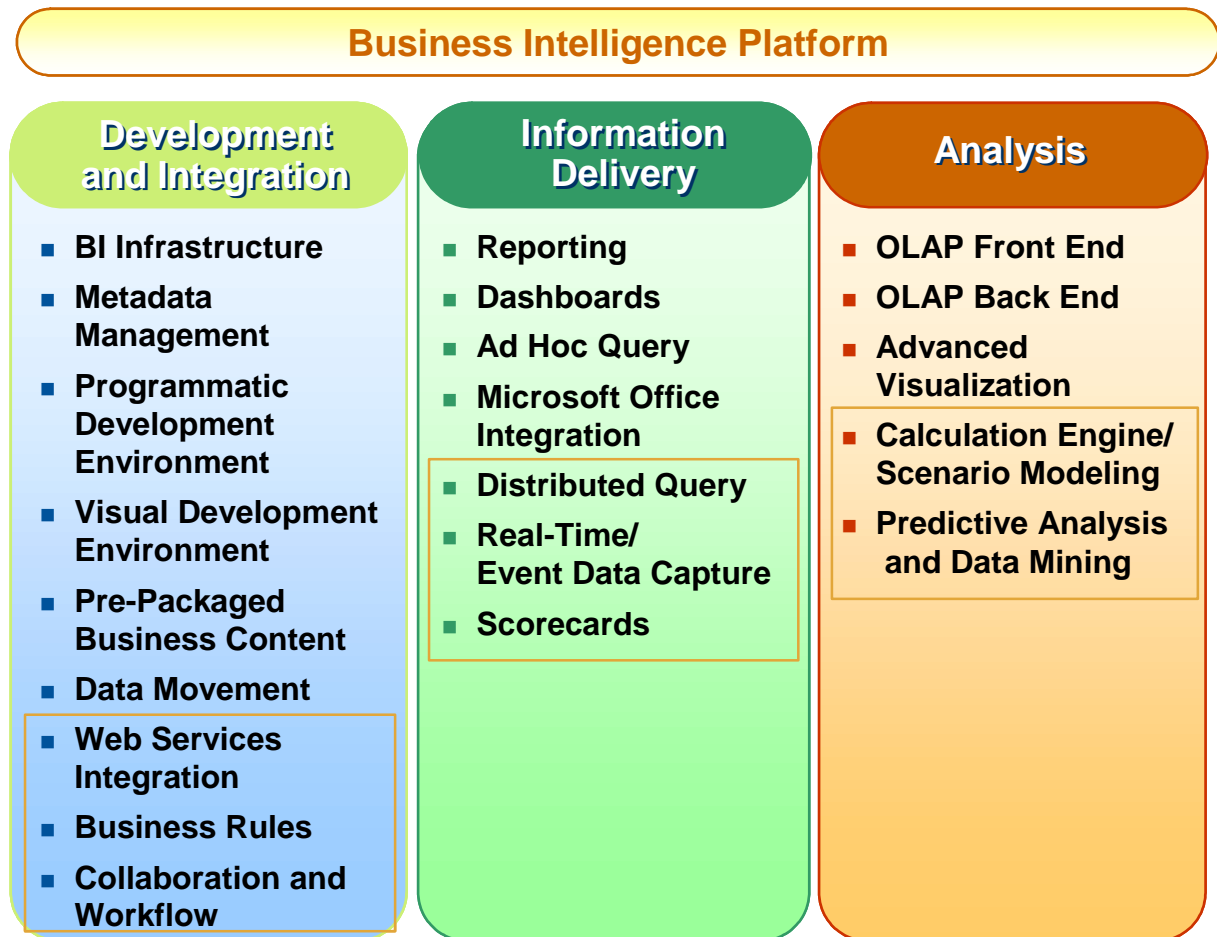
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Figure 1. Process-Centric BI Chart: Customer Churn Example

Who is at risk of churning?

Do we care?

Why will they churn?

What could we do to retain them?

Would we succeed?

Are they likely to churn again?

Predictive model to classify customers that will churn.

Calculation engine to estimate customer profitability.

Scenario modeling to understand cumulative impact of these decisions.

High price, lagging product, poor service ...

Waive fee, free upgrade, product bundle ...

Business rule engine to execute decisions made to reduce churn.

Web services link to data sources beyond the data warehouse such as customer e-mails.

Lifetime Value

High

Low

Current Value

30%

70%

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A BI platform should deliver a balanced set of capabilities across three areas: information dissemination, analysis, and development and integration. In all three areas, there are fundamental capabilities that organizations should be able to provide as part of a user-driven BI strategy. However, BI competency centers should also make investments in capabilities that enable a process-driven BI strategy that is linked to overall corporate performance. These advanced capabilities are highlighted in Figure 2.

Figure 2. BI Platform Capabilities

Business Intelligence Platform

Development and Integration	Information Delivery	Analysis
■ BI Infrastructure	■ Reporting	■ OLAP Front End
■ Metadata Management	■ Dashboards	■ OLAP Back End
■ Programmatic Development Environment	■ Ad Hoc Query	■ Advanced Visualization
■ Visual Development Environment	■ Microsoft Office Integration	■ Calculation Engine/ Scenario Modeling
■ Pre-Packaged Business Content	■ Distributed Query	■ Predictive Analysis and Data Mining
■ Data Movement	■ Real-Time/ Event Data Capture	
■ Web Services Integration	■ Scorecards	
■ Business Rules		
■ Collaboration and Workflow		

*Capabilities highlighted in a red box are particularly important for process-driven BI.

Source: Gartner (April 2006)

Information Delivery

The majority of BI projects are focused almost exclusively on information delivery. BI teams are preoccupied with delivering performance metrics via dashboards, and self-service reporting via ad hoc query tools. In particular, the proliferation of self-service reports has contributed to the problem of user-centric BI — thousands of independent reports that collectively offer little understanding of how to improve corporate performance. To combat this problem, BI projects need to be less focused on just providing reports to users and more focused on disseminating the right information at the right time to a particular business process. As a result, information delivery

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capabilities (such as event data capture and distributed query to access information from a variety of data sources beyond the data warehouse) become necessary components of a process-driven BI strategy. In addition, scorecards are required to link the metrics of independent business processes to overall corporate performance.

Development and Integration

To facilitate process-driven BI, new development and integration capabilities are required, including Web services, business rules and workflow/collaboration. Web services weave analytical applications built on a BI platform into operational applications. BI platform vendors have delivered some of these capabilities, but our research indicates that most BI competency centers have little experience deploying them. BI platforms must facilitate building and interpreting business rules within the context of reporting, analysis and event monitoring. In addition, the business rules generated from analyzing data (particularly using decision trees) will be fed into a rule engine for execution within an operational workflow. BI platforms will need to load query results to an operational database. Most BI platforms output query results to a report or an XML format that could be fed into a database. For process-driven BI to be done right, loading potentially large query results must be integrated into pre-defined application workflows without slowing the performance of the operational process.

Analysis

As the industry moves to process-driven BI, predictive analysis and data mining will succeed OLAP (slicing and dicing dimensional data) as the dominant style of analysis. Data mining models will be required to analyze the effects of thousands of variables — an impossible task with OLAP tools. Predictive analysis and data mining tools are mature and proven — they just never found a home in most user-driven BI strategies because they require specialized expertise. These barriers will be overcome, in part, by funding for advanced skill sets, but also by using less-complex models. Simpler models that provide reasonable levels of fit and robustness will be preferred over elaborately complex models that take weeks to build.

In addition, BI competency centers need to understand the importance of scenario modeling. The ability to model different potential outcomes based on varying the assumptions underlying any set of business data is a key requirement for the process-oriented approach demanded by performance management. Although most BI platforms have the ability to make complex calculations (such as the allocation of costs to create a profitability score), they lack a deep scenario modeling capability. This is currently embedded in process-oriented applications (such as CPM), which provide financially oriented scenario modeling capabilities. BI competency centers must understand the needs of users in each analytical process area (such as financial modeling, supply chain planning and marketing planning) and ensure that these are delivered in the appropriate applications. The BI competency center should also work with business users to build links between these different scenario modeling systems because they affect each other. These advanced scenario modeling capabilities will not become common BI platform features in the short term, but over time the boundaries between BI platforms and applications will become increasingly blurred.

Acronym Key and Glossary Terms

BI   business intelligence

CPM   corporate performance management

OLAP   online analytical processing

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