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The Business Case for Transparent Databases

How the transparent database architecture facilitates business speed and agility

The Business Case for Transparent Databases

Consider for a moment the volume of data your business, and indeed your industry, generates and stores. Now consider the power you would wield if given the ability to *creatively query and instantly analyze billions of rows of any type of that data.* What if you could make any comparison? Analyze any scenario? Profile any customer and understand the dynamics of any transaction?

In data-intensive businesses like retail and financial services, there lies a real opportunity to gain competitive advantage by acquiring a deep understanding of transaction-level information alone. Key to gaining this advantage is the ability to quickly analyze as much atomic-level data as can be gathered. Some key questions to ask and understand of your consumer population are, for example:

- *Who is buying? How old is she? What is her household income? Where does she live? Where else does she shop? How big is her family? What is she buying today? What did she buy last week? Was it on sale? Was it promoted? What did she buy with it, and what did she buy it with? What brands has she abandoned? What brands has she recently adopted?*

And in the financial sector, these questions barely begin to unlock the vault of powerful decision-enabling data available to financial services firms:

- *What does a borrower's credit history tell us about her? How much and what kind of debt does she carry? What is her payment history on every loan she's ever had? How does the type of loan impact her propensity to become delinquent or default? Does geography play a role? What econometric factors have the greatest impact on performance?*

The more — and the *more atomic* — the data you can access, the more *potential* you hold for business transformation. The potential lies in your ability to efficiently access raw data, query it in any manner your business requires, and turn data analysis into competitive advantage.

The Limits of the Traditional DBMS

Unfortunately, traditional database and data warehouse architectures hamper both *access* to pure data and the *speed* at which it can be accessed — and therefore used — for the benefit of your business. At issue are myriad, often application-specific filters, intermediaries, and business rules that "process" data during and after the ETL (extract, transform, and load) process, in which data is pulled into a data warehouse and staged for end user and application use. Traditional DBMS (database management system) architectures apply these filters and rules prior to the data being called on by queries and applications. Further processing (indexing, summarizing, cubing, etc.) data in advance of end user query and application use is *supposed* to optimize the data for specific query and application purposes. But the "processing" of raw data prior to its use inherently results in a loss or "rounding out" of information and it limits the creativity enabled by ad-hoc analysis.

A Data Management Paradigm Shift

Today, the "transparent database" concept is transforming the way the world's leading retailers and financial institutions access and analyze data. In short, the transparent database approach eliminates the time and distance gaps between end users or application developers and raw data. This is accomplished by rearranging the processing order in the ETL execution explained above, giving users *faster* access to *better* data.

Until recently, traditional DBMS software and limited processing power have been insurmountable hurdles for developers attempting to enable rapid ad-hoc querying of raw data. But 1010data has developed a transparent analytical DBMS that's fast, flexible, and proven in data-intensive financial services and

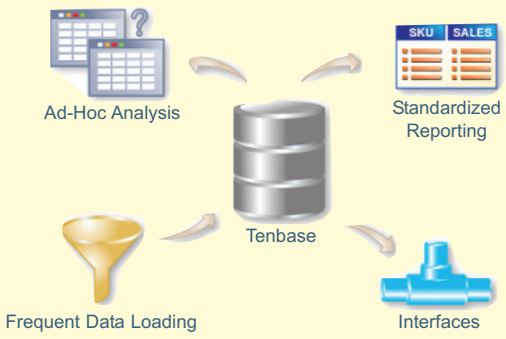
retail environments. The company is allowing institutions to radically simplify ETL and skip cumbersome distractions like data marts altogether, giving business users direct access to raw data with an interface that facilitates limitless, fast, and accurate ad-hoc data querying. This has proven to create significant competitive advantage for world-class retail and financial institutions (see accompanying sidebars).

The Competitive Advantage of More Data, Better Data, and Faster Access

The advantage of fast ad-hoc querying is limited only by your own creativity. For instance, the connection between billions of records of household-level financial intelligence and the consumer, transaction, and inventory data gathered at the point of sale is considered by many to be the current frontier for intelligent

Retail Intelligence Enabled by Transparent Databases

There is no prescribed limit to the departments and business disciplines that can benefit from database transparency. New levels of understanding can be realized by merchandise planners, inventory managers, store managers, site analyzers, supply chain managers, marketing and CRM professionals, finance executives, buyers, and more. But the *power* of database transparency can best be understood by looking at specific examples of how business superpowers are *leveraging* said power. A well-known discount retailer with more than 6,000 locations provides several such examples, market basket analysis among them.



Tenbase, the power behind the company's solution, allows users to repeatedly perform and refine large queries and provides results in seconds or minutes, rather than hours, days, or weeks. Even non-technical users can run sophisticated queries and mine solid, business-critical information from their data.

Using traditional means of analyzing transaction-level data, this retailer was able to determine its average basket size (5 items), but little more than that. Without the ability to access and analyze more granular transaction-level data, the retailer couldn't make the promotions decisions that would lead to an increase in basket size, much less an improvement in basket margin. Further, the queries it *could* run took hours and, in some cases, days to complete.

Within minutes of turning its raw transaction data over to 1010data, this retailer was running ad-hoc queries. It quickly learned that, in fact, very few baskets actually *contained* five items. Basket sizes fell largely into one of two ranges; two or three items per basket or ten to twelve items per basket. The general assumption among merchandisers was natural — the smaller baskets consisted of a soda and candy; the larger baskets held grocery staples. But upon deeper SKU-level ad-hoc analysis, the retailer discovered that high-margin phone cards and gift cards were the most common merchandise in 2-3 item sales. By moving this merchandise to a more strategic location in the store, the retailer realized a double-digit increase in basket size among typical gift and phone card purchasers. Further, SKU-level affinity analysis allowed this retailer to fully maximize its multimillion-dollar promotions budget. It quickly learned which items typically accompanied one another in baskets, and by strategically promoting just one of those items, significantly lifted the sales of the other SKUs too by adjusting product placement to leverage the "halo" purchasing effect. Without reservation, the retailer attributed a $500 million increase in yearly sales to the intelligence it gained through ad-hoc analysis of raw transaction-level data.

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retail decision making. Tapped by a fast and flexible processing engine, consider how analysis of this store of data could lead to smarter store site selection, better-targeted promotions, pinpoint merchandise allocation, deep market basket analysis, and more.

In financial services, the intelligence gained via analysis of billions of rows of historical data creates limitless opportunity for logical risk analysis and decision making. In fact, the financial institutions that leverage the 1010data transparent database approach consider their query and analysis logic such a competitive advantage they won't publicly discuss their success.

Demystifying Mountains of Wall Street Data

Wall Street was the original testing ground for the 1010data DBMS approach. It was here that the company honed its ability to quickly analyze and report on billions of rows of data. Today, 1010data transparent databases are enabling the intense scrutiny being given to mortgage-backed securities, especially in the wake of the financial meltdown. More than 70 of the world's leading asset- and mortgage-backed securities dealers use 1010data as a hosted service to analyze prepayment, delinquency, default, and loss-severity rates. Here, the ability to run ad-hoc queries on hundreds of millions of payment records—in seconds—leads to more effective risk management and portfolio valuation for financial services firms. Bank of America, Credit Suisse, Deutsche Bank, JP Morgan Chase, Goldman Sachs, and NYSE are among the financial services firms leveraging raw transaction-level data via the transparent database concept.

While it holds immense value, raw data — especially data that numbers in the billions of rows — is not pretty to the layman business user. Free access to "query at will" might, in fact, sound daunting to all but the most technically-proficient. To break down the barrier between the answer-seeking user and answer-holding data, 1010data developed a browser-based user interface that's tied directly to your data, facilitating ease of access, analysis, and reporting. The solution is available on your physical site or as a hosted service. In a hosted capacity, you can explore your data using nothing more than a Web browser, almost immediately upon uploading it to 1010data servers.

The true value of this new approach to data access and use lies not in what *others have done* with it, but in what *you can do* with it. 1010data invites you to experience this power yourself, using your data in a no-risk trial. Visit www.1010data.com for more information.

For those who wish to learn more about the transparent database architecture, the following additional resources are available at *www.1010data.com/resources.cover.html*

■ ***Design Considerations for Transparent Databases***

Geared for anyone involved in database design, this text discusses detailed best practices for designing databases in 1010data.

■ ***White Papers***

1010data has created several white papers that are designed to help users understand and begin to harness the powerful analytical potential of transparent databases.

■ Information on application program interfaces, video demonstrations of the functionality and user interface, and more.

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