

# Facilitating the Digital Transformation in Banking

Banks are Leveraging Data Virtualization to Enable Greater Agility in Responding to Customer Needs

## SOLUTION

Data Virtualization for the Banking Industry

## INDUSTRY

Applicable to all Industries

## WEBSITE

[www.denodo.com](http://www.denodo.com)

## PRODUCT OVERVIEW

The Denodo Platform offers the broadest access to structured and unstructured data residing in enterprise, big data, and cloud sources, in both batch and real-time, exceeding the performance needs of data-intensive organizations for both analytical and operational use cases, delivered in a much shorter timeframe than traditional data integration tools.

The banking industry is undergoing a massive transformation, driven by the need to provide advanced customer service. In a study of 107 global financial services decision makers, Forrester found that improving the customer experience was the top business requirement that drove the companies' transformation needs, followed by the need to integrate channels and the need to provide innovative new products and services.

Such a transformation is not trivial, as it affects the entire institution, on many levels. It will necessitate advancements in one or more of the following ten capabilities, and most assuredly, others as well:

1. Risk reporting and analytics
2. Liquidity management
3. Client reporting and customer relationship management (CRM)
4. Customer propensity and upselling
5. Multichannel usage integration and analytics
6. Social media integration
7. Personalized marketing campaigns
8. Personalized Pricing
9. Fraud detection
10. Mergers, migration, consolidation, and modernization

Data virtualization is a flexible technology that facilitates digital transformation. In this brief, we illustrate how data virtualization can help to transform a banking institution with respect to facilitating the development of improvements across each of these capabilities. We close with four case studies of banks leveraging data virtualization to enable digital transformation.

## What is Data Virtualization?

Data virtualization is a data consolidation and integration technology. But whereas most data integration solutions move a copy of the data to a new, consolidated source, data virtualization offers a completely different approach.

Rather than moving the data, data virtualization provides a view of the data, leaving the source data exactly where it is. This means that companies do not have to pay the costs of moving and housing the data, and yet they still gain the benefit of data integration.

Because data virtualization accommodates existing infrastructure in its existing state, it is relatively easy to implement, compared with other solutions. And because it provides data in real time, from a variety of systems that are normally very time consuming to integrate, such as transactional processing systems and cloud-based storage systems, it can support a wide variety of uses.

## Data Virtualization Benefits

By leveraging data virtualization, banking institutions can gain:



A highly detailed, 360-degree view into customers' changing needs and behaviors.



Improved client reports, that integrate data from multiple sources.



Timely financial intelligence, to make better, more informed pricing decisions.



A unified, real-time view of risk across the entire organization.



More effective fraud detection, with a view into real-time and historical transactions.

In the next section, we cover how data virtualization can help to transform a banking institution with respect to each of the ten capabilities listed above.

### 1. Risk Reporting and Analytics

For regulatory reporting, including the reporting of risk and performance numbers, banks often struggle with integrating disparate sources to obtain a single view of the risk data, a view that reconciles any differences that might arise. The primary difficulty in this struggle is the time it takes to create such reports, multiplied across the areas of risk that are pertinent to the bank, such as market, credit, counter-party, or operational risk. Similarly, banks are often called upon to satisfy Basel III requirements, which can be particularly challenging when banks are undergoing mergers and consolidations.

For such initiatives, data virtualization is a natural fit, as data can be consolidated, in real time, across myriad disparate sources, to satisfy the needs of any report. With data virtualization, data is no longer the bottleneck; stakeholders can produce detailed, reliable, integrated reports, with point-and-click ease, as if all of the data were formatted and stored on their own laptops. In addition, because all of the relevant data passes through data virtualization as a separate layer, data virtualization can also perform data quality checks as it consolidates the data and makes it available to consumers.

### 2. Liquidity Management

To more effectively manage liquidity across a financial organization's disparate departments and holdings, banks need ready access to aggregated liquidity positions focused on such domains as currency, geography, or applicable products. They then need to run these numbers against standard ratios such as the net stable funding ratio (NSFR) and the liquidity coverage ratio (LCR) in a timely manner, to gain a granular, dynamic view into the organization's liquidity.

To facilitate such efforts, data virtualization can unify views of each department's holdings, for a true aggregated view into risk, capturing highly granular developments, to support weekly or monthly reports supplemented with real-time changes. It can integrate information from other sources, as well, such as external sources for market intelligence or identifying emerging needs, or an organization's own ERP systems, to track orders and accounts receivable and payable data, to better predict the organization's cash needs.



### 3. Client Reporting and CRM

These are two different, but related activities. In preparing reports for clients, banks are trying to provide powerful functionality to customers, to earn their loyalty, such as enabling them to perform what-if scenarios using a simple web browser. Similarly, banks need to carefully manage each customer relationship (CRM). For enabling client-initiated reports and enabling reports about clients, both activities require data to be integrated in real time.

For such activities, data virtualization establishes data-as-a-service, a service that can be readily consumed by applications, or by internal experts or external clients, in a self-serve manner. This enables a variety of client applications, such as an aggregated view into events and conferences, for an interactive broker, or enabling clients to invest hypothetical amounts, to measure the performance of different instruments. On the CRM side, it enables companies to more effectively analyze customer spending patterns.



### 4. Customer Propensity Analysis and Upselling

If banks could better understand what their customers wanted, or how customers would be likely to engage with them, they would be better able to offer them new products and services that meet their needs. In today's customer-centric market environment, this means empowering representatives at the point of customer contact, with the correct customer profile, enhanced with the most relevant, up-to-date information, offers, and scripts.

To support such initiatives, data virtualization provides representatives with a real-time view into the customer's activities, a detailed understanding of what the customer needs, and an offer for a product that could meet those needs.



### 5. Multichannel Usage Integration and Analytics

Customers interact with their banks online, in person, on the phone, and increasingly, in other channels as well, such as text and even social media. Unfortunately, it is challenging to maintain consistent information across disparate channels, and customers experience such discrepancies as lapses in the seamless customer experience that they have come to expect. To provide this seamless experience, banks need to provide better integration between channels, so that they can analyze their efforts across all channels in a concerted fashion.

Data virtualization creates a real-time, dynamic view into all applicable communication channels, and makes this view readily available to analysts, to ensure that each customer's experience is consistent across the channels.



### 6. Social Media Integration

Banks and other financial institutions are increasingly interested in enriching their understanding of customers with additional data points drawn from their customers' interactions and relationships on social media platforms. But to effectively capitalize on social media data, banks need to be able to quickly integrate it with other sources of data, such as the sales data stored in CRM applications.

Data virtualization forms the bridge that seamlessly connects both sources of data, and makes the integrated data instantly available for analysis.



### 7. Personalized Marketing Campaigns

One important aspect of customer service is proactively targeting specific customer segments with specific products. To do so, and do so effectively, banks often need to integrate third-party data with a view in the spending patterns of particular customer segments, which can be gleaned from records of customer transactions. For example, banks may offer a promotion to users of a particular phone, or preferred members of a particular rewards club.

Once again, data virtualization can enable such campaigns by making it extremely easy, and quick, to report on third-party data in concert with dynamically changing transactional data.



## 8. Personalized Pricing

When it comes to pricing, all customers want preferential treatment, but when banks recognize a long-standing, loyal customer, they know that such treatment can enrich the customer relationship for the bank's benefit as well as for the benefit of the customer. However, personalized pricing requires a real-time, 360° view of the customer, including usage and referrals, as well as a view into all his or her interactions.

Data virtualization, once again, provides this critical view, and makes it available to representatives in real time, to enable better, more informed pricing decisions. Most importantly, data virtualization makes it possible to automate many of the functions of personalized pricing by maintaining a detailed profile on each customer that accounts for the customer's usage, referrals, and other information, so that a customer's preferential status will be automatically known by all representatives. Data virtualization also enables predictive pricing interventions. For example, if a customer inquires about paying off his entire loan, there is a good chance that the customer is planning to move elsewhere, and data virtualization enables banks to act on this information.



## 9. Fraud Detection

To more effectively detect fraudulent activity, and be compliant with regulations like the anti-money laundering (AML) rules in connection with the Bank Secrecy act, banks need to be able to distinguish normal activity from fraudulent activity, based on a detailed history of customer behavior, including payment patterns.

Data virtualization can aid fraud detection in three ways:

- By creating consolidated data views that expose patterns that could be easily missed.
- By providing companies with rich user profiles, to be used as context to support the real-time identification of fraudulent activity online.
- By facilitating the creation of audit or compliance reports, detailing which individuals have access to which data.



## 10. Mergers, Migration, Consolidation, and Modernization

This last group of initiatives are not particular to banks, but because they greatly impact all of the above initiatives, they deserve special mention here. Whenever there is a change to the infrastructure, data becomes more difficult to integrate, and it takes more time to do so, negatively affecting stakeholders' ability to leverage the data for informed, profitable decisions.

During such activities, the benefit of data virtualization is that it not only greatly diminishes the impact of such activities, but consumers of the data often do not even realize that there has been a change. This is because data virtualization automates access to the data sources, and, as mentioned above, creates a view into the data that makes users feel as though the data was in a single place. Behind the scenes, a variety of sources are accessed, but the user doesn't need to know or care about such details. During a systems migration, users might be accessing both the old and new sources simultaneously, and be gradually moved to the new system, without the users' knowledge.

## Case Studies

This section presents the case studies of four banks, illustrating the power of data virtualization in action.

### Seacoast Bank

Seacoast Banking Corporation of Florida is one of the largest community banks in Florida, with approximately \$4.0 billion in assets and \$3.2 billion in deposits as of March 31, 2016. Recently, Seacoast was feeling the impact of maintaining separate systems for such functions as back office operations, data warehousing, and loan origination, and a series of mergers and acquisitions were adding to the complexity.

Seacoast banking users from Core Banking, Internet Banking, Risk, and other groups had to request static reports from the IT team for operational and analytical purposes. This ad hoc, manual reporting process was both inefficient and time consuming. Seacoast wanted to implement a modern BI tool that would help users to slice and dice the data to meet their analytical reporting needs.

### Solution

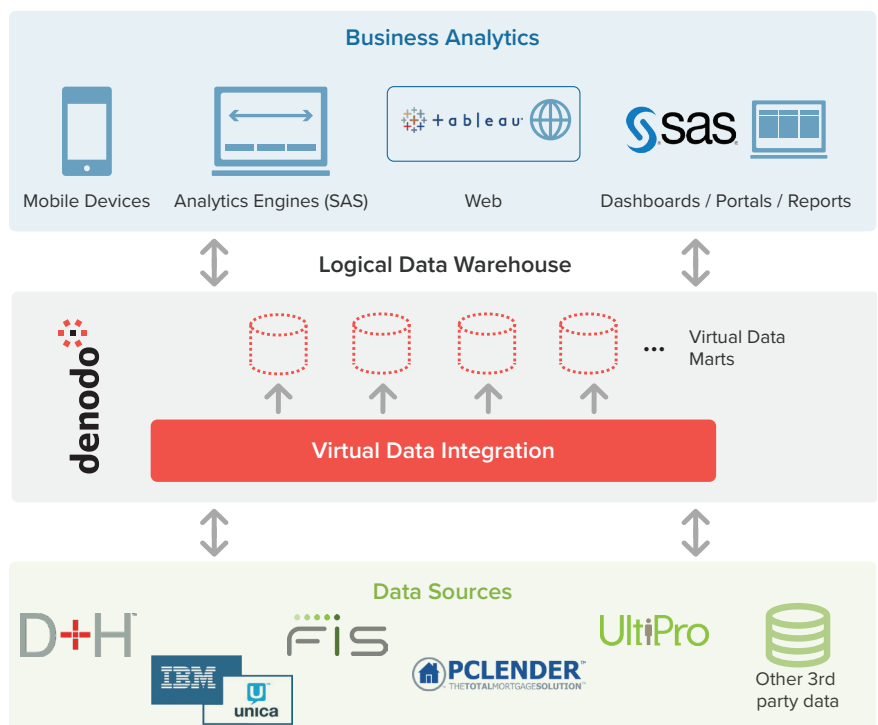
Seacoast leveraged the Denodo Platform, which uses data virtualization to seamlessly integrate operational data across cloud-based and on-premises information systems and deliver the aggregated views to analytical and reporting tools such as SAS and Tableau. With the Denodo Platform in place, Seacoast is now able to provide enterprise-wide self-service BI and develop interactive trend reports using modern reporting tools.

More importantly, Seacoast is now quickly accessing, unifying, and modeling new data to serve multiple business units, which enables the bank to handle credit administration, risk mitigation, internal operations, and Bank Secrecy Act requirements, in near real-time. Seacoast can now quickly pull data, which the bank regards as a significant, value-added improvement.

Mark Blanchette, VP and director of Business Technology and Data Management at Seacoast Bank, says that “Denodo’s data virtualization technology has played the most important role in enabling our business users to garner valuable information through self-service reporting. The Denodo Platform’s capability has significantly increased the speed at which business is carried out at Seacoast Bank.”

### Benefits

- The Denodo Platform has significantly improved the ability of Seacoast’s banking operations groups, such as Deposit and Loan Operations, to make timely, accurate decisions.
- The Denodo Platform integrated the data in less than half the time that a traditional extract, transform, and load (ETL) solutions would take, enabling Seacoast to meet the operational and analytical needs of multiple business units within the organization.
- Data virtualization technology helped Seacoast to reduce reporting time from up to three days for static reports to as little as two hours for interactive, self-service reports that serve business users in loans, deposits, fraud, credit, and risk departments.
- Powered by the Denodo Platform, Seacoast can now perform critical business operations, such as loan processing, in real time.



## CIT Group

Founded in 1908, CIT is a financial holding company with more than \$65 billion in assets. Its principal bank subsidiary, CIT Bank, N.A., has more than \$30 billion of deposits and more than \$40 billion of assets. CIT became a Systemically Important Financial Institution (SIFI) or “too big to fail” bank after it acquired a large retail bank.

CIT needed a controlled data environment to support the intense regulatory scrutiny. In the legacy architecture, the consumers were pulling data directly from source systems. As a result, information that was modified in one system was not always tied across to the other systems. To avoid this problem, CIT needed a common data access layer to link across various silos. The bank also needed smart data governance processes in place, to ensure that stewards are accountable for their data and can efficiently manage its quality.

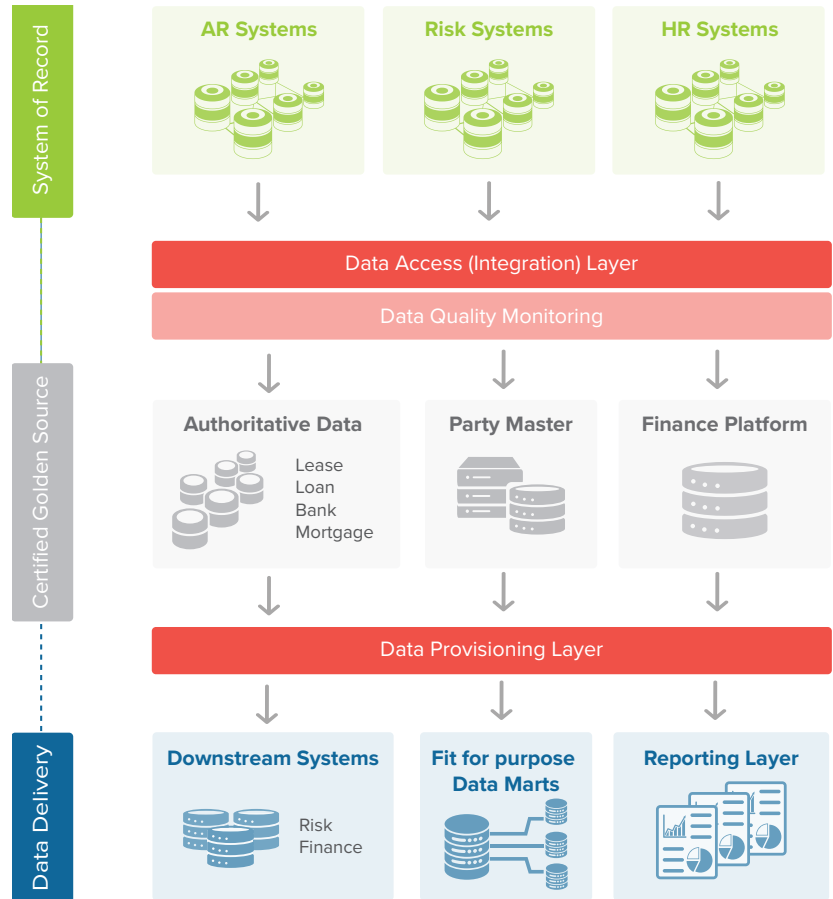
## Solution

A data services layer (DSL) integrates data and becomes a common provisioning point from which to access all authoritative sources of data. Data virtualization is core to this layer, helping abstract the data from the sources and presenting it to consuming applications through a unified interface. The Denodo Platform provides these key data virtualization capabilities within the DSL for the management and movement of data within the controlled data environment.

Bill Fesq, chief architect and chief data officer at CIT, says, “Denodo provides data virtualization technology that is core to our data services layer to expose data from sources, apply business rules for quality monitoring, and create a proper interface that can be consumed by multiple downstream users.”

## Benefits

- The Denodo Platform enabled faster time-to-market and incremental information delivery.
- The data services layer became the common provisioning point for all of CIT’s data instead of the legacy point-to-point integration.
- Data virtualization reduces data replication and unnecessary copies of data.
- The Denodo Platform enables smart data governance through enforcement of policies, standards, and procedures, and capabilities such as efficient data lineage, metadata management, and monitoring of data quality before consumption.



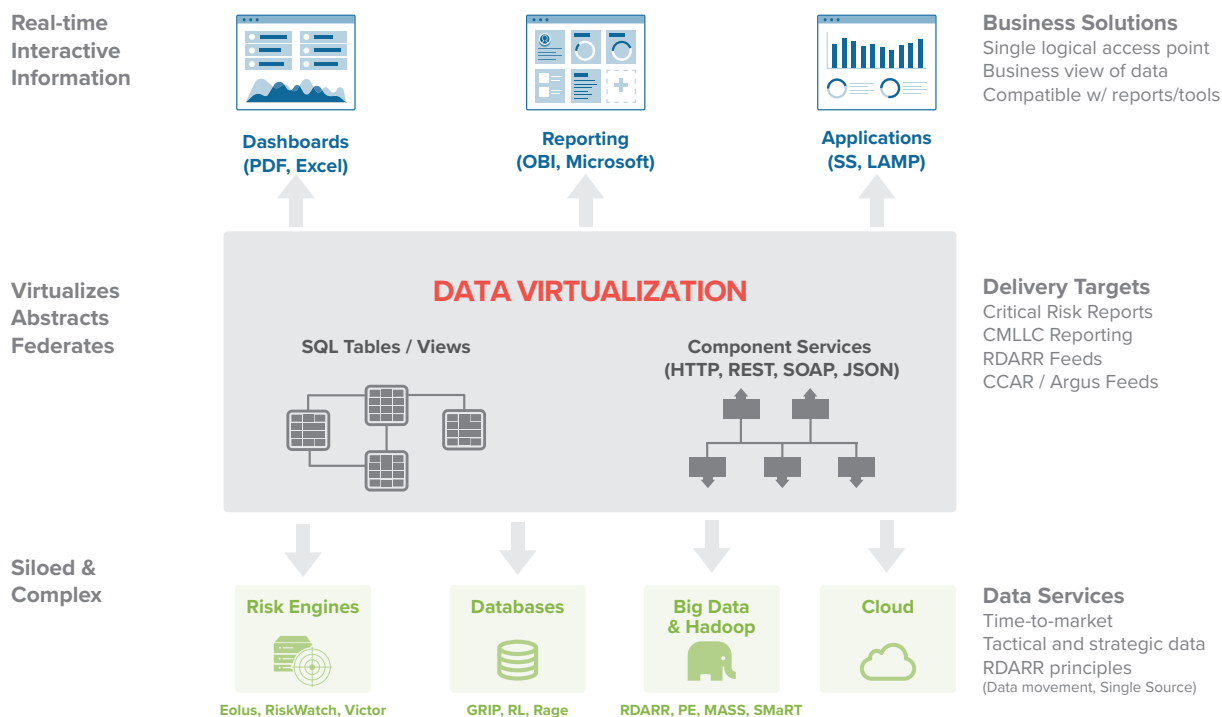
## The Largest Bank in Canada (“The Firm”)

The Firm, based in Toronto, Ontario, and its subsidiaries, represent the largest bank in Canada by revenue and market capitalization, and serves over 16 million customers with 78,000 employees in over 40 countries worldwide.

Recently, because of the bank’s substantial, diverse holdings, THE FIRM discovered that local and global risk managers did not have consistent views of financial market risk, as they were relying on separate data sources that were difficult and time consuming to integrate. Aggregating the risk data, and reporting on it, were impacting the bank’s time-to-market, which was not a sustainable condition.

### Solution

THE FIRM implemented the Denodo Platform, which uses data virtualization to connect five critical databases that were functionally and geographically separated. By creating virtualized views drawing on the five sources of risk data, integrated, the platform establishes a single source of truth for all of the local and global risk managers, who tap into the virtualized view using Tableau and Oracle Business Intelligence Enterprise Edition (OBIEE). Because the Denodo Platform manages data access, it also provides a convenient way to centrally manage security controls.



### Benefits

- A single view of risk data. By aggregating market risk data, the Denodo Platform has dramatically improved reporting efficiency.
- Improved time-to-market. Using data virtualization, THE FIRM was able to complete a year’s worth of data integration efforts in four months.
- More robust security. The Denodo Platform provided better security, by establishing appropriate access controls for local and global risk managers.

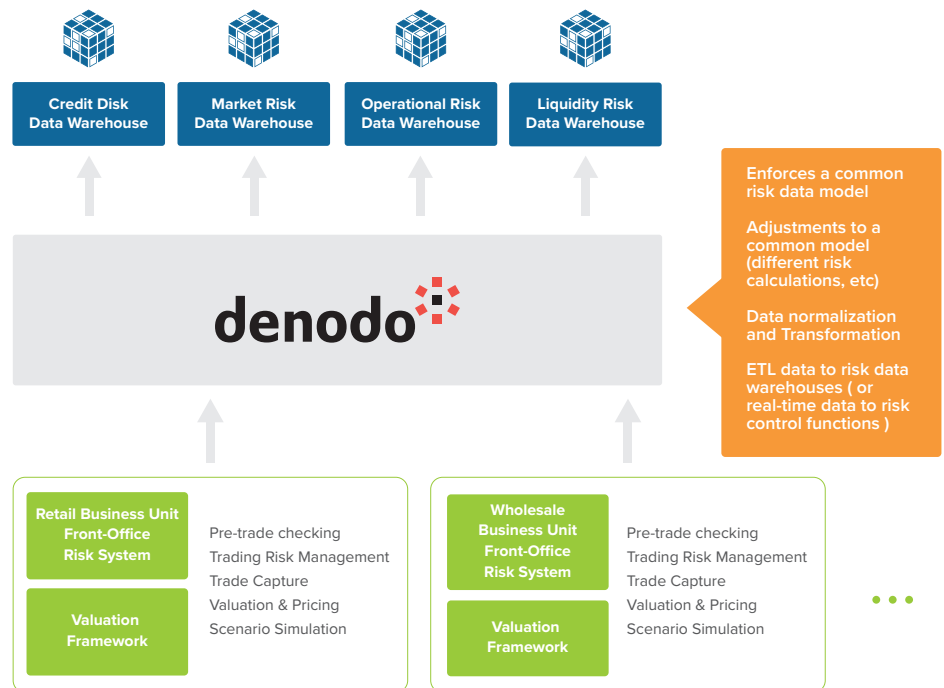
## Sumitomo Mitsui Trust Bank

Sumitomo Mitsui Trust Bank (SMTB) is a Tokyo-based financial holding company. Several banks come together to form SMTB, and the company was making heavy ongoing investments in extract, transform, and load (ETL) tools dedicated to integrating the data for reporting and analysis. Whenever a new data source was changed, the ETL tools needed to be rewritten, which was costly and time-consuming.

Most importantly, SMTB lacked a single view of risk across multiple data warehouses set up for storing data about different types of risk, such as credit, market, operational, and liquidity risk. This made it challenging to manage risk and also to report on it, to satisfy Basel III requirements.

### Solution

SMTB leveraged the Denodo Platform to provide a unified, virtual view of over 20 disparate data sources, including the sources for risk analysis mentioned above. The platform provided timely, integrated risk data that was also more accurate, comprehensive, and granular than the data SMTB was able to extract from the separate sources using ETL tools. This greatly facilitated Basel III requirements.



### Benefits

- After implementing the Denodo Platform SMTB was able to:
- Easily create and maintain virtual views, reducing IT costs.
- Seamlessly aggregate risk data by business line, region, asset type, industry, or legal entity.
- Keep up with changing data sources, ensuring that timely, accurate data is fed to reporting systems.
- Support ad hoc, data-driven requests.
- Maintain greater accuracy in reporting due to reduced replication; reports are accurate, reconciled, validated, and tailored to the audience and context.



### About Denodo

Denodo is the leader in data virtualization providing agile, high performance data integration and data abstraction across the broadest range of enterprise, cloud, big data and unstructured data sources, and real-time data services at half the cost of traditional approaches. Denodo's customers across every major industry have gained significant business agility and ROI.

For more information, visit [www.denodo.com](http://www.denodo.com) or call +1 877 556 2531 / +44 (0) 20 7869 8053.