

Governance, Risk Management, and Compliance, Streamlined

SOLUTION

Data Virtualization for Governance, Risk Management, and Compliance

INDUSTRY

Applicable to all companies with customers in the EU.

WEBSITE

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.

Governance, risk management, and compliance (GRC) are three formidable topics in their own right, but they are addressed together because a lapse in one area can create an immediate lapse in the other two.

When operating effectively, the three combined facets of GRC enable an organization to survive in a demanding regulatory environment, so that it has a chance to thrive. Conversely, if any of these facets are threatened in an organization, the organization will not be able to remain competitive for long. And although financial institutions are the most familiar with GRC, GRC affects all organizations.

The Information Connection

One critical factor in ensuring that each GRC facet is healthy and functioning is effective information-sharing capabilities. For **governance**, information sharing enables the communication and understanding necessary for senior management to work effectively through all layers of an organization. For **risk management**, information sharing enables organizations to gain unified views of risk across the many varieties of risk, many of which are handled by dedicated departments. And for **compliance**, information sharing enables rapid reporting that impacts business operations as little as possible.

Unfortunately, organizations face a number of challenges with regard to information sharing, particularly around the integration of data:



Disparate data sources. Data is often fragmented across myriad internal and external data sources.



Different data formats. Across the disparate source systems, data is often stored in different formats.



Different data standards. Each industry has its own standards for identifying data entities, and within an organization, it is not uncommon to find data adhering to different standards. In the financial industry, entities might be identified by LEI, CUSIP, or ISIN codes.



Incomplete data. Data sets cannot be easily shared if records are missing or invalid due to a reliance on data stored on different systems.



Unprocessed data. Data cannot be easily shared with other systems if it contains calculations that are not part of day-to-day operations.



Sensitive data. Sensitive data can be shared, but only with individuals that need to see it, and have the privileges to see it. To share sensitive data, sophisticated systems need to be put in place that provides granular, selective access to sensitive information.

Data Virtualization for GRC

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 across GRC activities.

Data virtualization enables organizations to easily create aggregated, consistent views of data, such as risk data, from across the organization, and these views can be selectively shared with full adherence with an organization's data access and privacy policies. In the financial services industry, for example, this means that fund managers, compliance reporting teams, and auditing functions all see the same data, yet all data can be masked, based on each user's role, to comply with local privacy regulations, be they HIPAA Safe Harbor in the U.S., the EU's GDPR, or the U.K.'s DPA.



Purpose Based Processing

Role based access ensures that views can be reused for multiple purposes.

Users and Applications can access single view but ensure that the data returned is applicable for the user/applications purpose.



Consent Based Processing

Integrate real-time with consent management systems.

Row level, column level policies can be applied in Denodo.

Custom policies have access to context information.



Data Minimization

Create virtual model for data necessary for given purpose.

Limit specific access of data as designed centrally in Data Virtualization Platform.



Data Anonymization

Views can be to offer anonymized reporting of data.

Allow access only to aggregated data.

How might data virtualization address the main information-sharing challenges we listed above?

- ✓ **Disparate data sources.** Using data virtualization, data can be quickly and easily integrated across myriad internal and external systems.
- ✓ **Different data formats.** Data virtualization can connect to data in different formats, using different technologies and protocols. All of these complexities are hidden from users and applications.
- ✓ **Different data standards.** Using lookup tables or in-memory maps, data virtualization can integrate data, even if it originates from different standards.
- ✓ **Incomplete data.** Data virtualization allows data to be brought together across disparate systems for a complete, holistic view into the data.
- ✓ **Unprocessed data.** Data calculations performed on aggregated data – not on partial, siloed data – provide a complete view of risk across the organization.
- ✓ **Sensitive data.** Data Virtualization provides data security and privacy capabilities so that users only see the data that they are permitted to see and nothing more.

Case Studies

This section presents six case studies across a variety of industries, illustrating the power of the Denodo Platform in providing data virtualization to streamline GRC activities, as well as a number of other benefits.

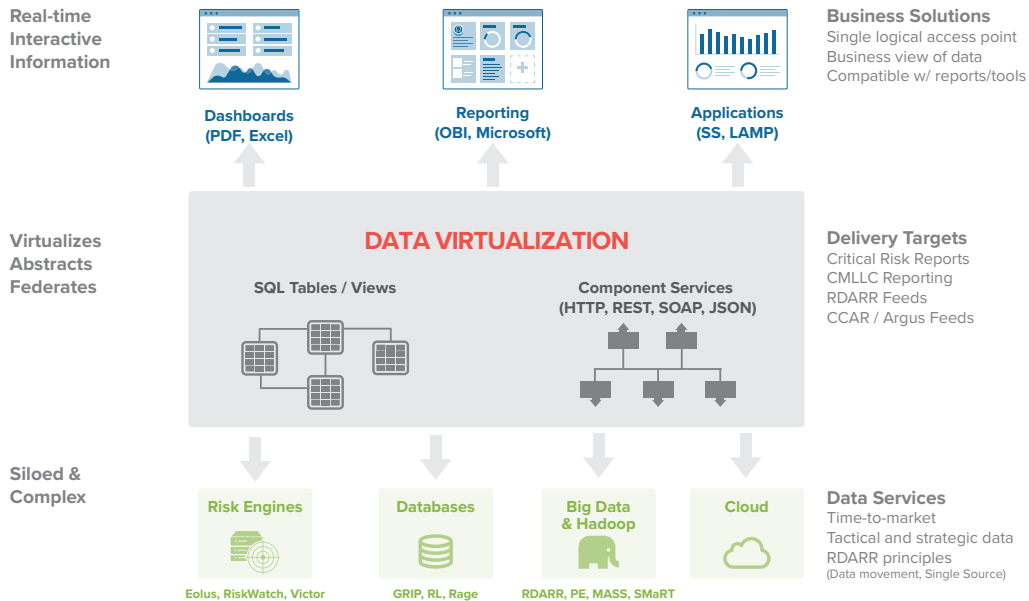
The Largest Bank in Canada (“The Firm”): Gaining a single view into financial market data

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 reports in four months.
- More robust security. The Denodo Platform provided better security, by establishing appropriate access controls for local and global risk managers.

CIT Group: Gaining a unified view into regulatory risk

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.

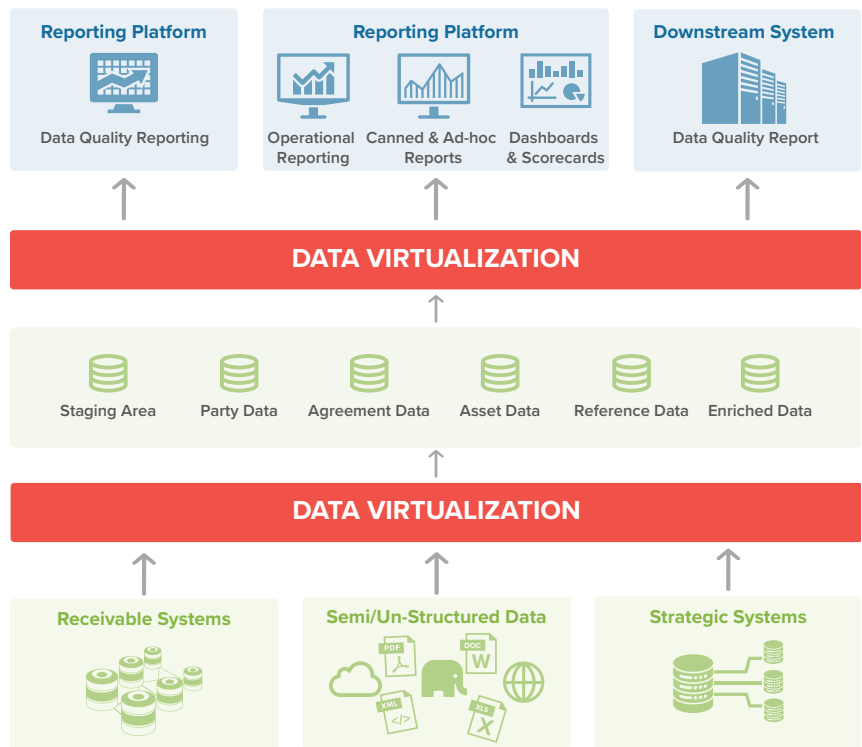
CIT needed a controlled data environment to support the intense regulatory scrutiny. In the legacy architecture, consumers were pulling data directly from source systems. As a result, information that was modified in one system was not always tied across to the other systems, and the company lacked a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

Solution

A data services layer (DSL) acts as a common provisioning point for all consumers, and 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. The DSL draws data from a layer of authoritative data sources, fed by a second data virtualization layer, which integrates the data from the company’s disparate, primary data sources.

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.



A global pharmaceutical company (The Firm): Improving its view of drug safety risk

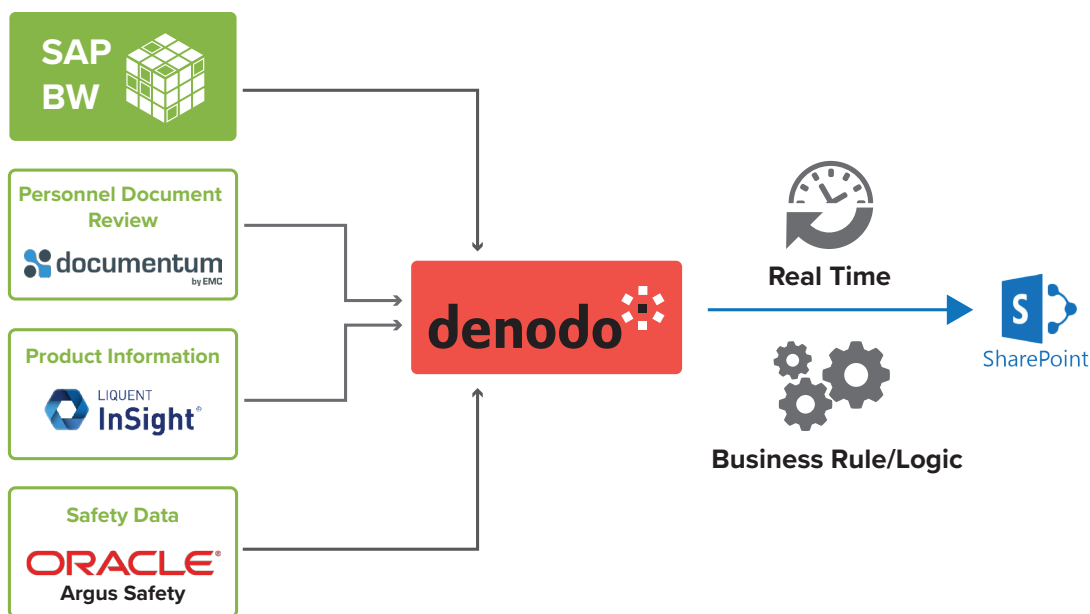
The Firm is a global pharmaceutical company focused on eye care, neurosciences, medical dermatology, medical aesthetics, breast enhancement, obesity intervention, and urologics. For a number of years, the company has been going through mergers and acquisitions, which has led to the consolidation of various systems, particularly those in the HR realm. This, in turn, has caused some information to not be fully managed, and some information was still spread across disparate systems. The Firm needed a centralized component to interact with multiple systems.

In addition, The Firm faced security and compliance issues, as well as issues of drug safety. The company had determined that some terminated employees were still using their Active Directory accounts, and also found out that there was no way to confidently identify which contingent workers were active and which were not.

The Firm needed a component that could interact with HR systems and organize data across various related sources. Similarly, drug safety data came from .NET systems, SAP Systems, and a data warehouse, and The Firm needed a way to build reliable analytics across the three systems, to gain a single view of drug safety risk.

Solution

The Denodo Platform virtualizes and integrates the Firm's Active Directory group and HR data, and provides the integrated data to existing applications for compliance. The HR group also used the Denodo Platform to integrate the LDAP system, so that HR data can be seamlessly validated against the Active Directory account. Finally, the Global Safety and Epidemiology (GSE) group used the Denodo Platform to integrate multiple systems in real time, such as those that housed safety event information (Oracle Argus Safety), product information (LIQUENT InSight), personnel training information (SAP BW), and staff document review information (Documentum).



Benefits

- By implementing the Denodo Platform, The Firm can:
- Improve patient safety, leading to a more comprehensive drug development process.
- Address and eliminate a wide variety of security issues.
- Effectively determine and differentiate active/inactive AD users.
- Save costs, by no longer having to pay penalties for terminated accounts in existence beyond 30 days.
- Remove time-consuming, complex ETL processes that were set up to remove inactive AD accounts.

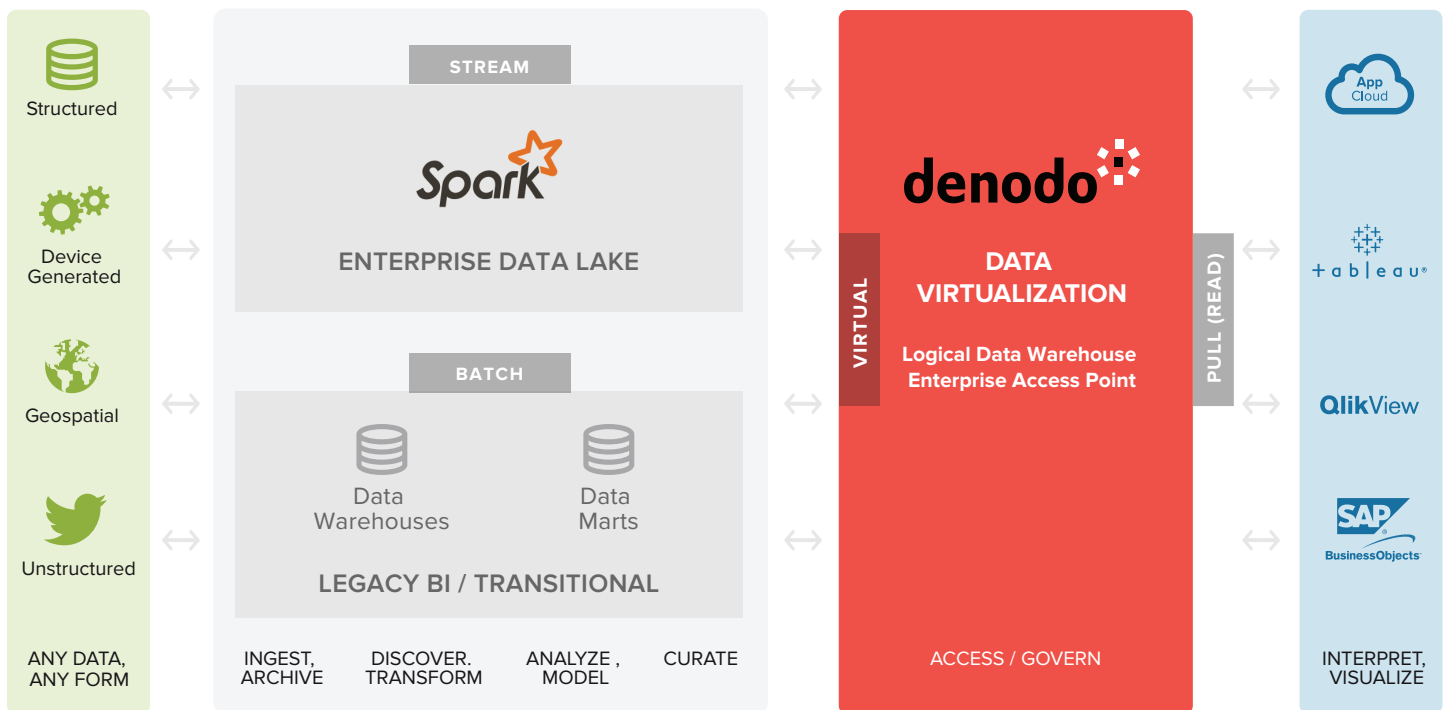
Autodesk: Transforming its revenue model while improving governance

Autodesk is an American multinational software company serving the architecture, engineering, construction, manufacturing, media, and entertainment industries. The company decided to transform its revenue model from being based on conventional perpetual licenses to being based on more modern subscription-based licenses. Autodesk knew that this move had the potential to increase profits and propel growth, but the company's existing BI system, which included an operational data warehouse, could not support this critical change without impacting the finance department's ability to track renewals, subscriptions, and payments.

Autodesk needed a solution that would facilitate the migration from the current systems to the new systems, to support the move to the new revenue model, without severely impacting operations. In addition, Autodesk wanted to strengthen corporate governance, to enable the company to better comply with Sarbanes-Oxley (SOX) and other regulations, and so the company needed a migration solution that would not inhibit the critical governance initiatives that were in progress.

Solution

Using the Denodo Platform to create integrated, virtual views of the data across all systems, including those supporting the perpetual licensing model and those that supported the new subscription-based licensing, Autodesk created a single, unified access point for enterprise data. With this view, Autodesk was able to facilitate a smooth transition to subscription-based licensing, without impacting daily operations. In addition, because the Denodo Platform enables companies to manage governance and security from a single point across myriad disparate systems, it helped Autodesk to better manage governance, security, and privacy initiatives, with full support for granular access privileges.



Benefits

- Autodesk was able to transform its business model without impacting operations.
- This transformation improved the company's business performance across the organization, bolstered collaboration by enabling the sharing of timely information across business and IT, and improved the company's agility, performance, and profitability.
- Autodesk can now enforce security and privacy protocols from a single point across the enterprise, improving governance initiatives.
- The solution enabled Autodesk's external partners to directly connect to Autodesk's SAP ECC application using web services, which enabled the company to process payments close to real-time.
- The solution helped business and development teams to become more collaborative.

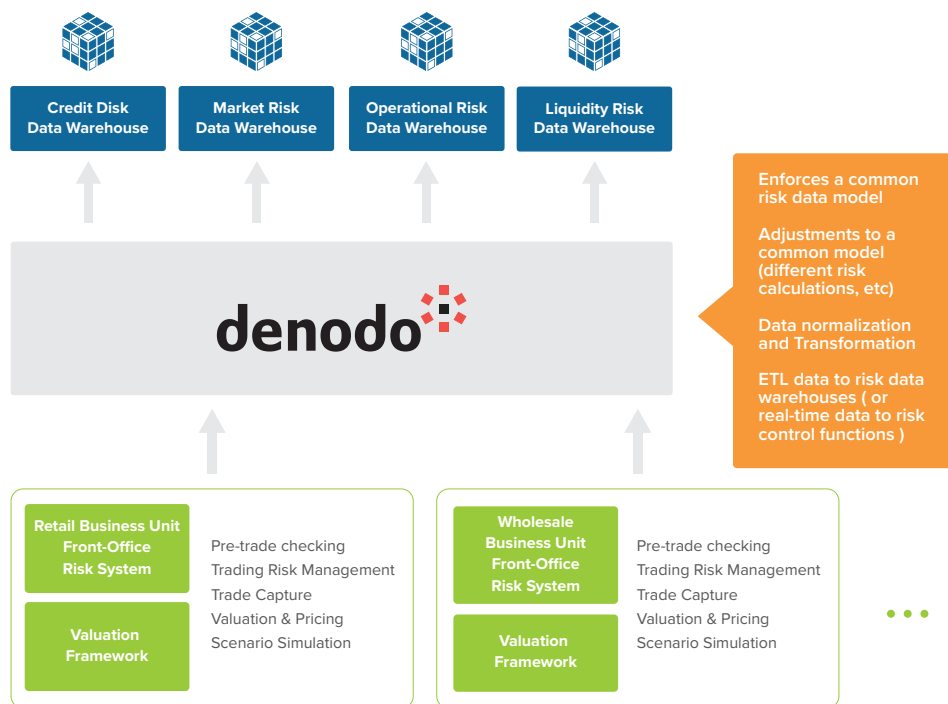
Sumitomo Mitsui Trust Bank: Streamlining Basel III compliance

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 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:

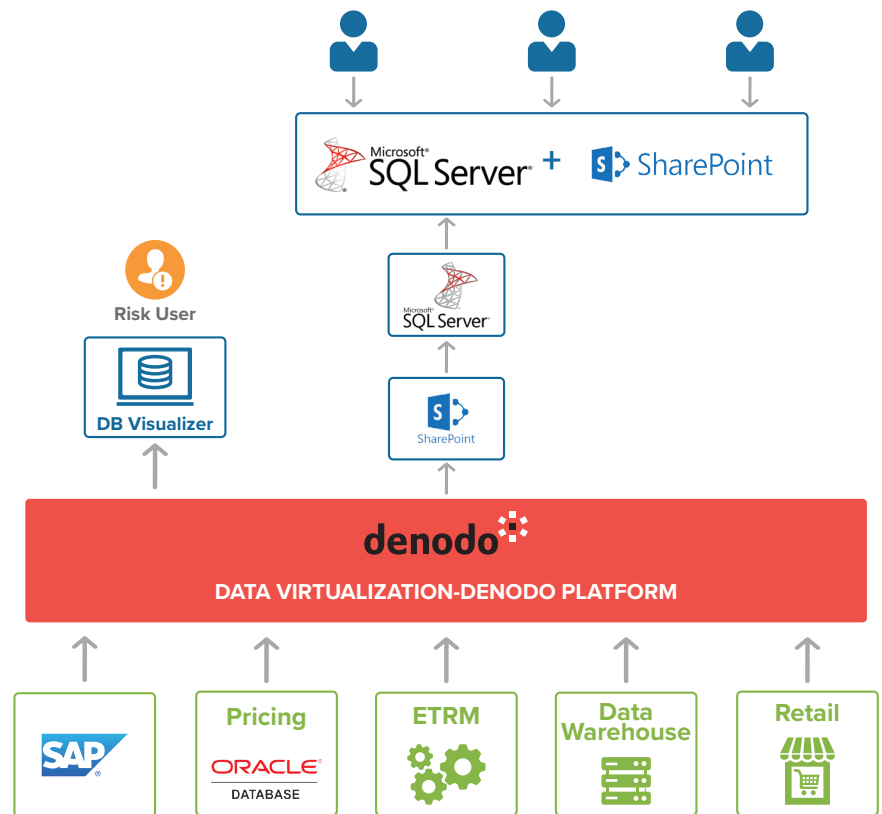
- Easily create and maintain virtual views, reducing IT costs.
- Seamlessly aggregate risk data by business line, region, asset type, industry, or legal entity.
- Keep up with changing data sources, ensuring that timely, accurate data is fed to reporting systems.
- Support ad hoc, data-driven requests.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

TransAlta: Improving compliance

TransAlta is Canada's largest publicly traded generator and marketer of electricity and renewable power. Recently, the company realized that its ETL-based data integration processes could not adequately support the heavy ad hoc analysis and data exploration that was impacting the company's Energy Trading and Risk Management (ETRM) system, a BI system for energy trading and risk management that was built across four systems: a SAP instance, a pricing database, a retail database, and a data warehouse.

Solution

TransAlta implemented the Denodo Platform, replacing the company's various ETL processes with a single data virtualization layer, and activities that used to take a couple of days now take a couple of hours. The Denodo Platform greatly accelerated access to integrated data in support of analysis and reporting, ultimately in support of compliance. Because the Denodo Platform establishes a single access point for multiple sources, it also provides TransAlta with a robust solution for tracking lineage, from consumer to source. Encouraged by its success supporting the energy and trading solution, TransAlta also deployed the Denodo Platform in the areas of renewable energy, mobile apps, and some key APIs.



Benefits

- Streamlined, accelerated access to data across a variety of disparate sources, for unmatched agility.
- The ability to control access and set security protocols from a single point.
- Cost savings, with the elimination of ETL processes.
- Reduced maintenance, since sources can be easily added or removed without impacting operations.
- Real-time data access, for current and next-generation use cases, such as processing streaming data from the IoT.



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 or call +1 877 556 2531 / +44 (0) 20 7869 8053.