Global Retail Firm Automates Competitive Data Extraction from the Web Using Denodo Data Virtualization.

Industry

Retail

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The Need

The profiled company is a leading global retailer. It designs, sources, and markets its products globally through a diversified network of retail, wholesale and franchise channels.

The firm reported positive growth figures for the second time in a row when global markets were teetering from the fright of an economic downturn. In addition to innovative designs and aggressive brand building, its success is largely attributed to forward thinking digital marketing. Its aggressive use of social media to transcend geographical boundaries and appeal to the younger consumer base is an example of a key digital marketing initiative.

The company decided to extend its use of the digital domain by tapping into the wealth of competitor product and pricing data available on the web. It planned to collect this information and use it to drive its product and pricing strategy. Examples of this would be to use competitive pricing information to drive promotion of products or to offer discounts. But the company faced challenges in acquiring and using competitive information for the following reasons:

- **Expensive** - Lots of manual effort expended in extracting the data and keeping it updated.
- **Incomplete** - Manual acquisition had limited scope and was susceptible to errors and omissions.
- **Non-scalable** - The extraction process could not scale to support company expansion.

The Solution

After a competitive proof of concept, the company selected Denodo as it met all of their project requirements and also exhibited a strong understanding of their business. Denodo provided a complete solution that included extraction of data from a variety web of sources, normalization of this data and integration into existing data workflows.

The company has deployed Denodo's data virtualization platform to leverage competitive information from the web. This happens in 3 stages – extraction, combination, and reporting.

EXTRACTION - The Denodo Platform extracts and normalizes competitive data using its sophisticated web automation capabilities. The ITPilot module within Denodo navigates through competitor websites and extracts product information such as name, description, image URL, and price. The Denodo scheduler runs this automated process once a month to create a 'snapshot' of competitive data and stores it in a database for further analysis and historical reporting.

COMBINATION - The Denodo Platform then accesses the extracted data and post-processes the information into virtual data views. This includes:

- **Data transformation and normalization** - Competitors' product data is categorized and transformed so that an "apples to apples" comparison can be made with company products. For example, competitor websites will use their own category nomenclature to identify a group of products. Denodo's mapping ability is used to map competitors' product categories to the retailer's own internal SAP categories.
- **Product de-duplication** - To provide pricing data in multiple currencies, the Denodo software collects information for the same product from a variety of foreign websites. This results in multiple copies of the product data. The Denodo software identifies unique- product instances and combines the pricing data as a single record. Additionally, product name and descriptions default to the retailer's native language for readability. For products found only on foreign websites, the solution uses a service to automatically translate names and descriptions.
- **Data Aggregation** - Aggregate price values are generated based on parameterized queries using date, product category, etc.

REPORTING - The virtual data views created within the data virtualization layer are used to feed custom and ad hoc user reports. The three custom reports created in Denodo are:

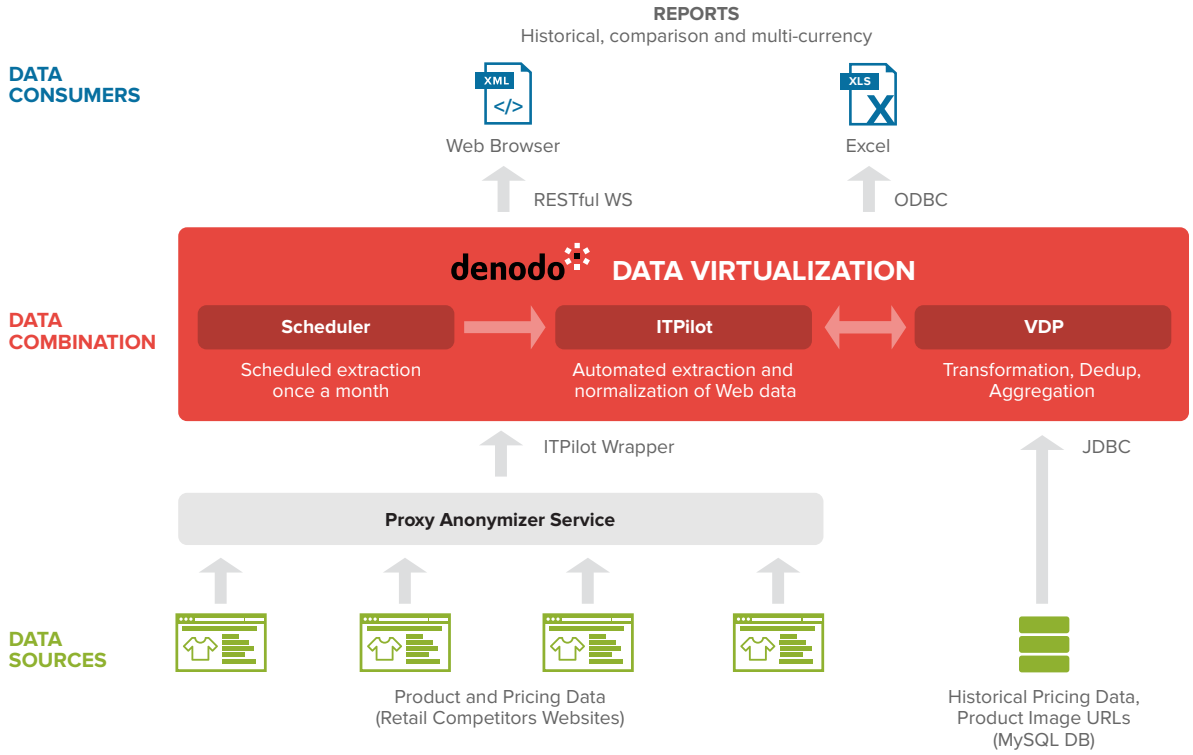
1. Multi-currency report: Product information, including images, together with all available currency prices for a specified date.

2. Historical report: Competitor product and pricing information, provided over a specific time period for a particular currency.

3. Comparison report: Company product information alongside an equivalent competitor product.

The virtual views are published in multiple formats for the users to access using excel or a web browser. Excel connects to Denodo using an ODBC driver. For browser-based reports, the views are published as a RESTful web service. The web interface allows users to customize the view that best suits their analysis. This includes selecting from a list of products, filtering based on parameters such as date, category, vendor and searching by product name, description and ID.

Automated Extraction of Competitive Data using Data Virtualization



Benefits

By deploying Denodo, the company has gained access to the most current competitor pricing and product data. The following are the business benefits:

- **Increased revenue opportunities** - By quickly identifying competitor price and product changes, the company can respond quickly to maximize revenue
- **Reduced resource costs** – The automating the extraction of competitive web data, the company has relieved itself of the high manual effort previously expended on this process.
- **Stronger decision-making** - The company can now cover a much broader and comprehensive list of competitor websites giving it more data points to make informed product and pricing decisions.