

Increase Your Return on Investment by Enabling Teradata Refinery Optimizer

A Holistic View of Refinery Data

Refinery sensor data, when combined with other information such as inventories, movements, blend schedules, and laboratory information management system data, has enormous potential to provide business leaders with the insights needed to make sound, well-informed decisions.

However, large volumes and data silos make it challenging for traditional refinery database management systems to efficiently manage and maximize the value of all the data.

4700% ROI

When the optimizer is used by front line decision makers, knowledge gained yields higher productivity, less time wasted, and greater revenue—all from having a more complete view of the business.

Getting a Better View of Your Data: Refinery Optimizer

In order to fully take advantage of the information being logged from refinery sensors, oil and gas companies are looking to gain a better, more complete view of the data. Through the development of a near real-time refinery optimizer solution, executives and managers are able to improve their understanding of how specific actions affect the overall organization—and the impact on the bottom line. Going forward they are able to make better, more educated decisions based on those observations.

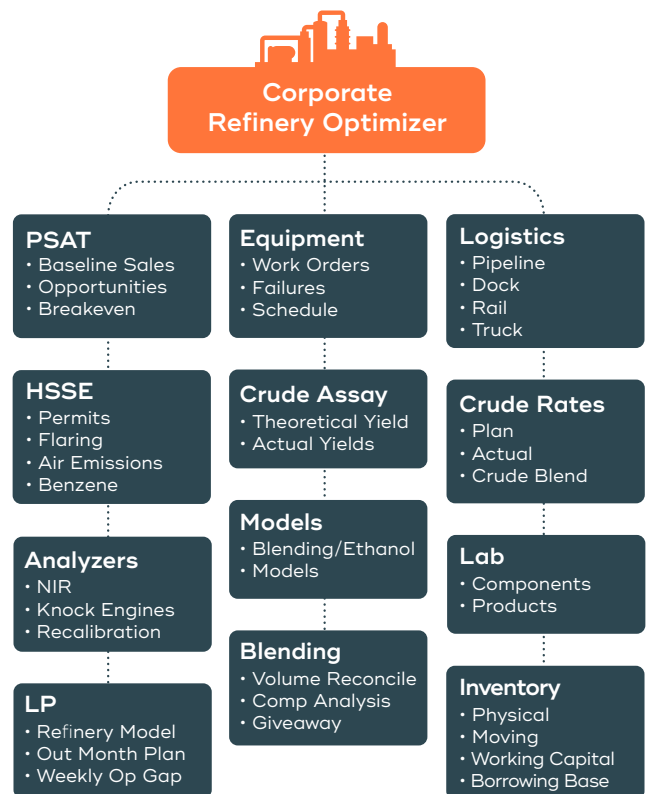
The refinery optimizer also has the potential to push down to operations where decisions are being made at the unit level. When the optimizer is pushed to front line decision makers, knowledge gained yields higher productivity, less time wasted, and greater revenue—all from having a more complete view of the business.

Blending Management

In the case of one Teradata customer, the refinery optimizer was applied to blending management.

Prior to implementation of the Teradata solution, data analysis was constrained, with reporting occurring on a four to six-week basis, averaging 30 blends performed over this time period. The customer was losing revenue opportunities because of their inability to adjust the giveaway. Reid vapor pressure (RVP) and octane giveaway is a multi-million dollar per year problem that affects each refinery and requires a complex calculation using data from several different source systems, taking weeks to complete.

Teradata provided the data management capabilities to source data from all necessary systems, integrated this data into a single data model, enriched it with financial



metrics, and built an application providing real-time access to said information.

By deploying a refinery optimizer, the blend analysis time has been reduced from six weeks to near real-time reporting. With this increased efficiency in data management, the customer can produce two blends per day, doubling production. Blends can now be easily adjusted within hours of production to lower the giveaway, and time previously spent adjusting the blends is significantly reduced. The refinery optimizer gives customers a better understanding of the giveaway by blend basis, allowing more accurate prediction of revenue.

Domino Effect: Unintended Benefits

The deployment of the refinery optimizer in the blending segment for this customer meant the ability to increase production and reduce giveaway, resulting in increased revenue on blends. In addition to meeting that goal, other secondary benefits were inadvertently identified in the process.

Implementation of the Blend Application yielded not only quantitative benefits in reduction of giveaway dollars and an increased number of blends, but also intangible benefits, such as helping operators understand their own blending process better. For example, as a result of information provided from the Blending Application, operators now recognize that when a blend pump is shut down, there is still volume flowing into the blend that was not previously being logged. Accounting for this extra volume has led to more accurate blending, fewer quality issues, higher throughput, and reduced giveaway.

Value of the Solution

Through the adjustment of blends and lessening the giveaway, analysts found an opportunity to increase profits even more. Byproducts to the process allowed the customer to increase revenue, maximizing the value of their assets. The component sale helped to bolster a return on investment of 4700% from the gasoline blending analytics.

Real-time access to this information has already yielded millions of dollars in cost savings in the first year of implementation from a very small effort. Previously, it

The refinery optimizer has led to increased efficiency in data management, allowing for twice as many blends per day, doubling production.

was necessary to delay blending until a zero occurrence of errors, meaning many wasted man hours and forfeited profits. Now, this customer reduced an error rate of 40 percent to less than one percent, with the implementation of the refinery optimizer. This increased time efficiency has allowed the customer to review blends and adjust takeaway, all while increasing profits. Moreover, the customer is now able to simultaneously analyze data in real-time. Not only has this enabled faster access to data analysis, but it has given the customer greater credibility with regulatory bodies, given that they can pull up permits and data in one place.

The Teradata Advantage

Because of this success, the executive optimizer model was applied across this customer's entire organization and deployed to all U.S. refineries. As a result, data analysts were able to recognize patterns and synergies between them, making for even stronger justification for further development across the business.

With Teradata, oil and gas companies are able to more easily gain a holistic view of their business operations via optimizers. With a customized optimizer solution, every business segment is able to benefit from the insights. Inventory management can generate reports in near real-time, rather than on a monthly basis; maintenance decision makers are able to more efficiently schedule part replacement in conjunction with general asset maintenance; and logistical engineers can justify application investments—all based on analytic insights.

Teradata can implement these same solutions for you. Arm yourself with the best possible information, and you enable the best business decisions for your refinery assets and across your business. When you know more, you can do more. **Teradata.com**

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