



TECH TRENDS 2021

Creating an agile enterprise built to evolve with Oracle



MACHINE DATA REVOLUTION: FEEDING THE MACHINE

Traditional ways of organizing data for human consumption are not sufficient for the era of artificial intelligence (AI) and machine learning (ML). For decades, companies have collected, organized, and analyzed data with one goal in mind: helping humans make decisions based on statistical fact rather than hunches and emotion. This led to traditional techniques of organizing data in clean tables and rows, with precise labeling. Machines, however, do not need these human-centric organizational constructs. They can assess multiple factors simultaneously and objectively, extracting low-level statistical significance from vast volumes of structured and unstructured data.

Understanding that machines think differently and much more rapidly than humans, AI pioneers are realizing that legacy data models and infrastructure could be a roadblock to ML success. As part of a growing trend, these organizations are reengineering their data management value chains to support ML's possibilities. To this end, they are deploying new technologies and approaches including advanced data capture and structuring capabilities, analytics to identify connections among random data, and next-generation cloud-based data stores to support complex modeling. Oracle offers seamless connections across these areas. Combined with appropriate guidance and know-how, the Oracle ecosystem allows companies to build a firm foundation for "feeding the machine" in a way that drives business value.

FEEDING THE MACHINE

Oracle has an extremely powerful and extensive ecosystem for enabling enterprise analytics. All of the necessary data-to-information components exist entirely within the Oracle platform, beginning with the data itself. These components span Oracle Autonomous Data Warehouse (ADW) for storing data in the cloud; Oracle Data Integrator (ODI) and Oracle Integration Cloud Service (OICS) as the ingestion

layer; Oracle Cloud Infrastructure (OCI) for streaming data in real time; and Oracle Analytics Cloud with Machine Learning for analysis, visualization, and reporting.

All too often organizations do not realize that these Oracle tools and technologies readily fit together into a powerful analytical ecosystem. Oracle technologies are well-suited for enabling the rapid flow and transformation of data to information—without having to send data outside the Oracle ecosystem in order to process it and derive meaningful insights from it. Instead, the idea is to bring algorithms and data visualization techniques to the data that is already sitting in the Oracle database, rather than incurring the inefficiency and security risk of sending that data somewhere else.

The first step in taking full advantage of Oracle's ability to "feed the machine" is for enterprises to understand that everything needed to solve business problems with data and predictive analytics (i.e., AI and ML) is already housed within the Oracle ecosystem. These capabilities can be used to bridge the traditional gap between data scientists on the one hand, and enterprise executives on the other. In many organizations, the former is mainly focused on exploring their technology silos while the latter is concerned with getting a return on technology investments by propagating information across the enterprise to as many different areas as possible. Oracle helps realize the value of an enterprise's critical data and information assets by deriving insights from them and providing the vehicle for delivering those insights throughout the whole organization.

With Oracle, the data management and IT sides of the house can access a lot more data in a shorter amount of time, which allows them to work side-by-side more effectively. When complete, the results of their efforts, in the form of insights and information, can be

promptly delivered across the enterprise using Oracle reporting and dashboarding technologies. In this way, ML and AI investments become an enterprise play, and Oracle becomes the facilitator of business value.

Deloitte can advise organizations to help them better understand how the pieces of the Oracle analytics ecosystem fit together to address specific business problems, such as how to:

Predict a certain type of behavior. For example, which customers are most likely to go to a competitor?

Forecast future outcomes in terms of metrics. For instance, what will our profit be under different economic recovery scenarios?

Identify fraud and anomalies within specific functions. For example, by detecting and eliminating vendor overpayments, a company could quickly reduce its costs.

While there is much talk in the marketplace about the promise of ML, the reality is that a great deal of data wrangling must happen behind the scenes in order to achieve the desired outcomes. The Oracle ecosystem, in concert with Deloitte, can accelerate that work, ranging from data access and manipulation to complex modeling and scoring, thus shortening the path to developing enterprise-wide information delivery capabilities.

ORACLE USE CASE: CLAIMS ANALYSIS ENGINE

A logistics company wanted to find a more effective way to manage accident claims associated with their trucks. More specifically, the company sought to better assess its risk exposure and optimize the experience of its claims adjusters in order to lower its payouts while minimizing fraudulent payments.

To accomplish these goals, Deloitte built a claims analysis engine entirely within the existing Oracle ecosystem. By leveraging the ML algorithms in the Oracle database, the engagement team quickly and effectively accessed all of the required data, without having to pull any of it outside the database. The solution added value in a number of ways: 1) by taking advantage of the existing computational power to find the hidden patterns within the data sitting inside the database; 2) quickly scoring claims according to their level of risk and likelihood of fraud; 3) using an ML model to project the dollar amount that the claims were likely to settle for; 4) accelerating development, testing, and deployment of ML models while eliminating security threats by restricting data movement within the database.

These insights allowed the company to assign high-value claims to the most experienced adjusters and low-value claims to less experienced personnel. It also illuminated previously unknown exposure by providing a more accurate picture of what the claims would settle for. For instance, through the model, adjusters might discover that a claim they expected to close for \$50k had a high likelihood of closing for over \$1M, or vice versa.

In building the engine, the Deloitte team used the Oracle ML platform and 14 data sets, all of which resided completely within the Oracle database. Creating the model outside of Oracle would have been quite complex and introduced a security risk by removing data from the secure Oracle database. Ultimately, the team accomplished its goals of rapidly developing the ML models and putting them into production, thus creating new opportunities for the company to make the most of its Oracle investment.

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