A state lottery hits the jackpot with modernized IT, improved sales

Overview

State governments encompass organizations responsible for creating, administering and marketing lottery games within the state. This includes state-specific games as well as a portion of the multi-state lotteries such as Powerball. The lottery's mission is to transfer funds from ticket sales to other state programs, supplementing tax-based budgets.

Challenge

Legacy systems constrain insights, potential lottery proceeds to agencies

The state governor mandated that the state government should run like a business, with a focus on efficiency and data-driven decision making. That posed a technological and operational challenge to the lottery. The lottery's primary IT resource was an aging legacy system that was expensive to maintain and lacked the flexibility to drive the lottery's data needs. It was not architecturally able to integrate data in a timely manner from the many game vendors who aggregate sales data from the ubiquitous terminals in gas stations, convenience stores and other outlets around the state.

Interfacing with vendors was a challenge for the lottery operations team. A lot of the important data was actually locked up in the vendor systems. To operate the lottery more effectively, the state had to modernize their data management processes.

This technological limitation created operational impedi-ments to greater efficiency. Because data did not integrate easily, any effort to analyze the lottery – what games were popular, or profitable, for instance – required significant manual interventions by IT staff, integration of different data sets in different formats, even data entry off of spreadsheets. The process required a multi-week turn-around time that made it impossible to make adjustments in anything approaching real time.

Because lottery sales were growing, this lack of data flexibility had numerous ramifications. Underperforming games would stay in the field longer than they should. It was harder to determine the ROI of marketing campaigns since most of the data resided with the ad agencies, making it more complex to tie data to sales. Most importantly, funds available for transfer to other parts of the state budget were lower than their potential optimal amounts because of this significant operational lag.

Industry

State government

Challenge

Modernize data management processes to drive lottery revenue

Solution

Software, data integration with a self-service analytics engine

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Solution

Cloud-based analytics engine streamlines insights

CenturyLink architects migrated the lottery's data to the Amazon Web Services (AWS) cloud and created a new data analytics and management solution. This negated the expenses associated with maintaining the legacy mainframe. CenturyLink also used a variety of resources from around the world to reduce costs on implementation and ongoing support.

The new implementation was guided by certain criteria that addressed the challenges faced by the lottery:

- Analytics should be self-service, with no IT intervention required
- All measures of lottery performance should be standardized
- Data should be integrated regardless of original format
- Data provenance should be traceable to help ensure data integrity, and quality

Data flowed from regional game vendors to an AWS Direct Connect connection. More than 30 data sources were integrated in an SQL Server database engine hosted at AWS. The complexity of preparing the data for analysis was hidden from users via an integrated dimensional data mart. This allowed lottery officials to focus on what they wanted to know, rather than worrying about how complex their queries might be.

To automate their self-service queries and data visualizations, CenturyLink architects installed and configured a modern enterprise web-based business intelligence (BI) solution. The BI/data visualization solution allows even casual users to ask questions of the data and visualize the insights produced quickly without intervention by IT staff.

The system streamlined the decision-making processes. The lottery operations people can now just go in and play with the data to test ideas.

Results: Predictive insights, easier management meetings, more money for agencies

Since installing this analytics solution, the state lottery saw a 14 percent rise in funds transferred to various programs throughout state government. That creates flexibility for agencies amidst the regular fiscal cycle. In FY19, the state lottery exceeded its sales target by tens of millions of dollars!

The newly implemented data management processes provided by CenturyLink were a foundational part of the success in 2019.

As one example of the new insights possible, the analytics capability can now smooth out sales spikes that can throw off forecasting. When the multi-state lotteries, such as Mega Millions, post huge jackpots it boosts sales of state-based games–the core of the business. While the revenue might be welcome, these periods are unpredictable anomalies that can actually mask other insights such as underperforming games that need to be retired. With the data analytics solution, trending data is now more accurate and more useful for running the lottery.

The lottery now can forecast sales five years in advance based on historical data. That helps with planning both within the lottery and for state agencies. Sales and profitability of any game are more easily understood as well as regional or seasonal variations in those metrics. IT staff has also been redeployed to other more productive tasks than maintaining the legacy system.

The state found that investing in data analytics freed up resources to focus on what was really important. The lottery's executive director said it leveled the playing field for everyone and broke down the silos while increasing transparency.

Future plans: More data, more data sources

As sales rise, more data is produced. The lottery plans to expand the number of data sources used in the analytics engine. This will allow even more insights to be produced through the self-serve analytics portal.

Learn more by visiting CenturyLink at centurylink.com/sled.

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