Case Study

How a Tribe-Run Casino Unleashed the Power of Its Data

Challenge: Navigating Technological Growth

Technology modernization is a near-constant struggle for many public sector organizations. Saddled with piecemeal systems that were once on the cutting edge, agencies have outgrown their existing technology environments, creating bottlenecks and making it increasingly difficult to manage escalating workloads efficiently.

Wind Creek Hospitality (WCH), an authority of the Poarch Band of Creek Indians (Atmore, Alabama) that manages the tribe's gaming facilities, faced many of these challenges. As the organization expanded beyond tribal casinos, fueled by diversification into commercial gaming and social gaming platforms, it realized the need to evolve its technology capabilities to deliver richer customer experiences.

$1.23 billion
The amount Congress has appropriated to the Technology Modernization Fund as of Dec. 12, 2023
(Source: Government Accountability Office)

80%
The portion of the $100 billion in annual IT spending that agencies put toward legacy IT operations and maintenance
(Source: Government Accountability Office)

8-51 years
The age range of 10 critical federal IT systems
(Source: Government Accountability Office)

Several opportunities emerged:

Decoupling transactional and analytical processing: WCH's data infrastructure was initially developed on a centrally hosted Oracle database, primarily designed for analytical purposes. But as applications were added over time, it needed to do transactional processing as well. This dual-use case and its shared resource architecture made adding new workloads more complicated. This complexity led to more intricate daily operations.

Transition from traditional Java-based APIs to more efficient microservice architecture: The platform consisted of custom ETL services using Java applications and Oracle Packages, plus REST-based application programming interfaces, reporting and many system integrations. Data was replicated to several groups, where additional transformations were applied that created challenges for maintenance and operations. By moving to a microservice architecture, WCH aimed to alleviate resource contention, enhancing efficiency and reducing outages, delay and platform instability.

Adopt CI/DC capabilities by moving away from line-of-business data sources: The existing infrastructure was a hybrid setup in which ETL jobs and WCH's API service were in the Azure App Service Environment as a stop-gap solution. Data from all lines of business were being replicated to the Azure Managed Instance database to serve as a source for ETL jobs.

"Partnering with AIS was like having Sherpas guide us through our cloud and data transformation journey. Their expertise and methodology illuminated the path forward, enabling us to scale new heights in our technology landscape."

– **Ganesh Bala**, Chief Data & Analytics Officer, Wind Creek Hospitality

Solution: Modernizing the Data Platform

With ambitions to construct a Modern Data Platform that addressed these challenges while accommodating storage, data governance and compliance needs, WCH embarked on a transformative journey for their growing casino business. Assessing these factors helped determine the best solution to support the company's expansion and streamline its data management processes.

WCH enlisted help from Microsoft and AIS, a strong partner team that helps organizations adopt, build and enable transformative cloud and data solutions. The team used the AIS Data Delivery Framework to jump-start the project.

They began with a discovery to assess the current environment and create work streams to address the three biggest opportunities, while documenting all the changes to ease future knowledge transfer.

First, they built a secure, manageable landing zone. This enabled them to bring the data platform into the cloud to optimize data movement according to industry best practices. Because this involves critical applications that cannot have downtime, WCH needed to move them without affecting operations.

"Instead of ETL, we follow [data loss prevention]," says Yared Tsegaye, Solution Director with AIS. "That means we bring data into Azure data lakes and then eventually put it into the appropriate destination database. We pulled data out of Oracle and replicated that in Azure, and then once we confirm the data is in two locations," it can move without affecting production or operations.

Second, AIS introduced a DataOps structure for change management. To address an opportunity for better change management processes, AIS implemented DataOps principles. This brought structure to how WCH creates, updates, documents, and deploys data changes. A key benefit is the ability to track data lineage. They now have lineage across the data. In the past, users were running their own queries to know what's happening. The previous lack of transparency in the data led to redundant copies and transformations. AIS helped with a solution that will show them the source, destination and transformations in between so users can start developing trust in the data.

Third, AIS assessed the applications and applied domain-driven design. AIS eliminated many of the applications that were written in Java because they were using the ETL process and moved them into a modern data platform to do the data transfer instead of writing custom code.

"The other applications are APIs that are highly dependent on the database, so we isolated those and created multiple domains running in the APIs," Tsegaye said. "We created microservices with their dedicated database, [and] the communication is clear between those services and the services that are critical that are running on the casino floor."

The team also created an application to help manage high-volume times — weekends and holidays — to ensure there are no delays in the data coming from the casino floor to the casino apps or websites.

Best Practices

Here are six ways to make the path to change smoother:

1. **Thorough assessments.** You can't know where the challenges lie or how to prioritize addressing them without fully understanding the situation.
2. **Make documentation part of your sprint delivery.** By not waiting until the end of the project to record what was changed and built, knowledge transfer can happen in near real time.
3. **Embrace infrastructure as code (IaC).** Treat data as code and use infrastructure as code in development environments and quality assurances phases, in addition to production.
4. **Review analytical workloads for transactional characteristics.** Onboard those workloads to the platform accordingly.
5. **Evaluate implications of multi-region deployments early.**
6. **Use the "Well-Architected Review of DevOps Workloads."** But ask additional questions to tie it to data platform development:
   - Describe your team's goals for tracking and monitoring configuration drift
   - Describe how your team is managing the configuration of your applications