Onix helps a large public university drive student engagement and facilitate greater inclusivity opportunities.

Executive Summary

This customer, a large public university, approached Onix to explore strategies that would enable them to move forward with several key student engagement and inclusivity initiatives. The application of AWS and other complementary platforms provided the capability to design and implement a back end data system to curate data from university systems and store it within a data lake for consumption, along with a recommendation system based on curated student profile and opportunity data. The two systems integrate with a front-end portal available to students both on the main campus and also online for those engaging remotely. The use of AWS technologies enabled the school to drive student engagement and increase inclusivity for all student segments.

Customer Challenge

The university was seeking to increase student outreach and engagement by creating an online student engagement portal accessible to all its students across the world, both satellite and online campuses, through a web or mobile application as they weren't enjoying the community and culture found at the main campus location. They wanted to expand and enrich their entire student body engagement experience by offering new ways to participate in curricular and co-curricular activities and collaborate with various entities throughout the institution. They also wanted to identify new opportunities to increase engagement with underprivileged students and to foster inclusivity across its student body.

As part of the project, the university wanted to provide students an easy-to-use portal with a complete view of curated data from various university and student organizational systems, one that could deliver recommendations for engagement and learning opportunities based on student profile data.

About the Customer

This public university with an endowment exceeding $3 billion, is more than 150 years old and serves a diverse student body at multiple locations across its state as well as through a growing online presence globally. The institution has a strong focus on inclusivity, and works to engage students with a broad spectrum of learning, volunteer, networking and career opportunities.

Partner Solution

The data that the university had was decentralized and disaggregated. Onix used AWS Glue scripts to import student demographic data from the university's student information system (Peoplesoft), the student organizations' system (Campus Labs), as well as Undergraduate Research and Study Abroad systems. Data from the engagement portal user interface was also extracted. Collected data was then formatted for use by the ML recommendation engine and other uses by the portal. Having this data in a centralized repository would also allow the customer to use the data for potential future analytics needs. The data lake leverages defined access permissions regarding who can read and write to the S3 buckets that make up the data lake. AWS Glue was used to define the various data transformations. Nightly retraining of the ML models and a new model iteration was re-deployed to SageMaker for use by the application. This included the CI/CD process for training and redeploying the model, as well as iterations for the model's development.

Why AWS?

The use of the AWS API Gateway supported creation of API Gateway endpoints, and enabled the application to make calls to the recommendation engine, receiving return results. Newly created Lambda function interfaced with the API Gateway to listen to calls from the student engagement application made to the gateway. This delivered the functionality to take the results sent to the API gateway and route them to SageMaker hosting the Recommendation Engine model. The model returned a result which the Lambda function acquired and passed back through the Gateway to the requesting application.

Amazon S3	Amazon CloudSearch	Amazon Athena
AWS Glue	Amazon API Gateway	Amazon SageMaker

Why the Customer Chose Onix?

Onix won a competitive bid and RFP process by articulating novel and innovative approaches for data collection and engagement opportunity recommendations that demonstrated self learning and eliminated biases. Competitor solutions were rigid and monolithic, a poor fit for the customer's needs for a dynamic, ever changing scalable data solution. The University was a new customer for Onix. However, the customer did have a previous relationship with AWS.

Impact and Results

The project aggregated data sets from information that had long been siloed and fragmented, — and provided an updated view of student profiles, organizations and engagement opportunities, all refreshed on a daily basis. Users were finally able to query and collaborate regarding information across multiple colleges and departments.

The project increased student engagement by providing them a portal offering student-specific engagement suggestions and recommendations, with opportunities available for groups, jobs, internships, travel abroad and volunteerism, all based on each student's unique persona or profile. The solution has increased inclusiveness for underprivileged students by eliminating recommendation bias, and has also helped students become more engaged learners; more thoughtful, better informed and increasingly involved in the university and their communities.

About Onix

Onix is a world-class AWS Advanced Consulting Partner that strives to help customers increase organizational efficiency through cloud-computing solutions. Our expertise covers D&A, App Mod/Migration, Cloud Adoption and MSP. With proven success across hundreds of customers, we build agile yet scalable solutions by partnering with AWS to accelerate customer experience and back our strategic planning and deployment expertise with incomparable service, training and support.

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