Airport Data Platform for Enhanced Traveler Experience

Build a data platform for airports that can create an enhanced customer experience by collaborating with airlines, vendors, and lounge providers using open data standards, purpose-built databases, and extensible serverless architecture.

1. Discover & Catalog
2. Conversion between file formats (CSV, JSON, PARQUET)
3. Propagating changes in incoming data to S3 processed tier
4. Creation of reportable data sets and propagation of incoming data
5. Load data into DynamoDB
6. Scheduling and workflow management.

Build a data platform with schedules, real-time flight information, traveler check-ins, loyalty transactions, lounge usage, transactions in the airport, and loyalty.

Leverage AWS Data Exchange to make the data collection from public sources for demographic and address data.

Optionally, enhance the baggage system with RFID-based sortation and tracking. If not, leverage the bar code scanners and baggage sortation events.

Provide Staging for ingesting all batch and real-time data using cost effective storage classes in Amazon S3.

Use open standards to build the data lake using the same data as the operational data platform.

Use a read pattern schema to make the raw data and curated data readily available for all user roles seamlessly.

Build all reportable data sets in Amazon S3 and leverage Amazon Redshift and Amazon Athena for analytics. Optionally, build data marts in Amazon Redshift for heavily used analytics. For ad-hoc requirements, publish the data catalog and use Amazon Athena for analysis directly using the data lake.

Use Amazon SageMaker to provide standard AI/ML models for operational analytics. Customers can also use Amazon SageMaker to build their own models on top of the data.

Use purpose-built databases like Amazon DynamoDB and serverless architecture to deliver microservices and events for operational data store. Build a real-time operational dashboards and customer applications leveraging these microservices.

Publish flight and customer events to customers and downstream systems for baggage reconciliation and ground transportation.