

Case Study: Banking

Leading bank in Canada implements AI models using MLOps

A leading financial institution deployed AI models at scale with an MLOps solution to ensure repeatable, relevant and consistent performances took place across business functions.

The challenge

Inconsistent deployment processes and multiple development tools, libraries and interpreters created a lack of visibility on models being built and deployed by a leading bank in Canada. What's more, the bank was addressing maintenance overheads, infrastructure issues and a lack of model monitoring and retraining, which caused a lack of governance.

The solution

Cognizant leveraged its partnership with Amazon Web Services (AWS) to design a scalable machine learning (ML) architecture, powered by AWS SageMaker to facilitate shorter model builds and deployment lifecycles.

The solution reduced infrastructure constraints by using AWS Glue for data preparation and Amazon EMR and Simple Storage Service (S3) buckets for storage. The solution also leveraged Amazon

SageMaker, ML frameworks and AWS docker containers to deploy the models to production. Code repository was built using AWS CodeCommit and model monitoring and logging were built using AWS CloudWatch. AWS Lambda and Elastic Container Service (ECS) were also used to deploy the models.

A tailored implementation roadmap was created for the bank to help them build an MLOps pipeline on AWS, set up process governance, build new models and transition existing ML models from Dataiku to AWS SageMaker.

As part of the model scripting and building process, data scientists set up models and training features with the correct files (.tar/.pkl/ONNX), mathematical and statistical expressions for the algorithm, placeholders for input data and action points for predictions and outcomes based on the model types and use cases.

AWS Step Functions were leveraged for automation, with data ingestion and transformation addressed with AWS Glue. Data analysis was addressed with AWS Athena and AWS Fargate was used to manage the servers.

Business outcomes

By automating the model versioning and deployment, the Agile-based, AWS-powered MLOps solution decreased effort by 40%. It also created a well-defined, future-ready data science platform

to address models through an agile and phased approach. Four models (two BMO and two non-BMO) were considered and deployed successfully across the bank with real-time and batch model execution. What's more, the solution accelerated the Agile-based implementation by three months.

About the client

The customer is a Canadian multinational investment bank and financial services company.

About the partnership

Cognizant engineers modern businesses to improve everyday life. Our unique industry-based, consultative approach helps clients transform technology, re-imagine processes and transform experiences ensuring businesses remain agile, relevant and ready to run more innovative and efficient enterprises.

With AWS as our partner, we focus on the outcomes that matter most to businesses and underpin our solutions with deep industry experience and market-leading IP. Cognizant brings more than 6,000 AWS certified professionals, dedicated AWS certified consultants in 43 countries, hundreds of customer launches and successes, and more than 70 transformational blueprints to drive innovation beyond cloud migration.

As a premier consulting partner, Cognizant hold numerous AWS competencies, including AWS Mainframe Migration, AWS SAP, AWS Migration, AWS Financial Services, AWS Healthcare, and AWS Life Sciences. Partner programs include AWS Well Architected, AWS Managed Service Provider, AWS Marketplace Seller, AWS Solution Provider Program, and AWS Public Sector Solution Provider.

About Cognizant

Cognizant (Nasdaq-100: CTSI) is one of the world's leading professional services companies, transforming clients' business, operating and technology models for the digital era. Our unique industry-based, consultative approach helps clients envision, build and run more innovative and efficient businesses. Headquartered in the U.S., Cognizant is ranked 185 on the Fortune 500 and is consistently listed among the most admired companies in the world. Learn how Cognizant helps clients lead with digital at www.cognizant.com or follow us [@Cognizant](https://twitter.com/Cognizant).



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