# Case Study

## The American Express Company (Amex)

## The **Business Problem**

The American Express Company (Amex) is a multinational financial services corporation headquartered at Lower Manhattan in New York City. The company was founded in 1850 and is one of the 30 components of the Dow Jones Industrial Average. It is a Fortune 500 company with a revenue of US$ 36 Billion in 2020.
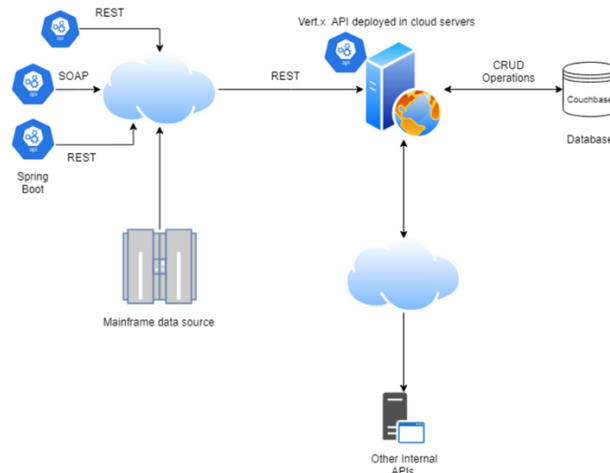
## The **Challenge**

The client wanted to migrate from using mainframe systems as a backend to the latest architecture and infrastructure to facilitate processing times that today's world is looking forward to.

### About
## Cogent Infotech

Founded in 2003, Cogent Infotech is a trusted, award-winning firm with **21+ years** of experience, **150+** government contracts, **10,000+** projects, and a 96% employee retention rate. Recognized as an SBA Small Business and MBE-certified, we deliver excellence through diverse talent, AI-driven recruitment, and cooperative contracts like NASPO Value Point and TIPS-USA.

## Solution **Architecture**

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# The **Impact**

- Outcome
- A significant improvement in read, write processing times have been achieved with the help of asynchronous programming framework (Vert.x) and N1QL database (Couchbase).

- Processing times have been reduced from 48 hours to 1 second

- Data from multiple sources is processed in real-time with almost 99% availability and average processing time less than 1.5 seconds

- Over a period of time we have built trust in the organization as reliable APIs handling more than half a million transactions per day

- Becoming a primary database source for other APIs

- Attracting other portfolios and business units to collaborate with our API

# The **Processes & Solution**

- Real-time Processing of applications and real-time responses from the database are achieved for read, write, and update operations for non-UI and UI-based applications.

- Multiple data sources and APIs integrate with our APIs to use consumer documents stored and processed in real-time.

- Technology stack update to replace traditional mainframe systems

- Real-time processing of transactions with real-time responses for User Interfaces and other APIs.

- Onboarding of new APIs for integration, adding visibility and reliability.

- Event-logging to maintain a history of transactions.

- Messaging queues like Kafka also load data into Hive and Cornerstone.

- With the help of Couchbase database, use N1QL indexes to access and perform database transactions on JSON documents easily.

- Vert.x is used as a framework over traditional spring boot to benefit from asynchronous programming.

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