



CASE STUDY

Leading Global Pharma Giant trusts Healthcare Triangle to deal their Enormous Real-World Evidence data

The Client

The client is one of the top 10 pharmaceutical companies in the world that applies scientific expertise and innovation to society's biggest health challenges. Their vast product portfolio is distributed across three divisions that have innovation power and global scale.

The Need

The client hit a bump in their real-world evidence (RWE) efforts when their analytics queries were taking days to complete. On top of that, it was challenging to add new data sources to their platform, sometime taking weeks to set up. They were looking for a technology partner who could help them take their RWE platform to the next level. Scaling was also a significant challenge as the data size was forecast to increase tenfold in the immediate future. The incumbent platform also lacked high availability and backups which led to frequent downtime. Another challenge was to implement the high security and compliance requirements that

are essential in pharmaceutical environments.

AWS and DevOps practices

AWS gives an option of flexible services which are designed to enable companies to build and deliver products more rapidly and reliably. This can be done using AWS and DevOps practices. These services simplify the following:

- Simplify provisioning and managing infrastructure
- Automating software release processes
- Monitoring application and infrastructure performance
- Deploying application code

DevOps is the blend of social methods of insight, practices, and tools that builds an organization's ability to deliver applications and services at high velocity. This helps evolving and improving products at a faster pace than organizations using traditional software development and infrastructure management processes. This speed enables organizations to better serve their customers and compete more effectively in the market.

Reasons for Choosing Healthcare Triangle

Healthcare Triangle (HTI) with its unique combination of cloud, analytics and pharma domain expertise was the ideal partner. HTI solution architects did a comprehensive assessment of the platform architecture and recommended the adoption of CloudEz and moving the entire platform to the cloud. HTI key differentiators are,

- **RWE domain knowledge:** HTI is the partner of choice for RWE implementations at many of the top pharmaceutical and life sciences organizations. We bring years of experience in RWE solutions
- **CloudEz:** HTI is leader in building GxP cloud solutions for complex life sciences use cases such as Genomics and Big Data for many years. The CloudEz platform brings quality, durability and repeatability to your GxP cloud implementations
- **Analytics:** World class analytics leadership in handling big data, machine

learning, prediction, and visualization. In addition to life sciences, we have helped many industries from cyber security to advertising adopt cutting edge analytics technologies

The Work

Once the client awarded the Cloud and Analytics services contract, HTI started setting up a scalable and secure GxP compliant Cloud Infrastructure. The following features were implemented using an Agile approach.

- Secure Virtual Private Cloud was instantiated with the necessary capacity to handle the current data sources and scalability for future data sizes running into multiple petabytes
- High-availability and redundancy was architected into the cloud platform
- The architecture was divided into multiple clusters for data ingestion, data transformation, and analytics so that each stage was individually scalable to accommodate various growth scenarios
- A proper version control mechanism was set up to manage the cloud versions
- Data ingestion service was developed to automate data ingestion from the various sources

- A separate cluster for data staging after ingestion was created to enable easy data transformation
- Impala and Spark were used to transform raw data into information
- All analytics queries were optimized to speed up processing on the analytics cluster
- In-memory technologies were deployed for those visualization use cases that required faster response and handled larger amount of data
- The entire platform was fully managed using a DevOps approach to change management and operations

Results

Within 3 months, the results of the CloudEz platform and the full stack analytics re-engineering approach were apparent to the entire team.

- Data ingestion was an order of magnitude faster and new data sources could be added in a seamless manner
- The most apparent benefits were in the area of query processing -- even the most complex queries were now taking just minutes instead of days



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