Modernization of the Data Ecosystem for a Top 15 Pharma Company

About the Client

The client is a global pharmaceutical organization ranked in the top 15, with a revenue of over $30 billion and 50,000 employees.

The Problem

Data Ecosystem Modernization: The organization aimed to modernize its data ecosystem by consolidating data sources, creating clinical data warehouses, enabling advanced analytics, and automating critical processes such as protocol generation.

Solution

The BigRio team collaborated with the client's US team to provide a comprehensive solution that addressed both technical and operational challenges.

1. Cloud Enablement and DevOps Engineering

The BigRio team supported cloud enablement by augmenting the client's Product Engineering team and leveraging their architectural knowledge:

- Developed repeatable processes for deploying high-value solutions in the cloud.
- Designed and implemented tools to simplify cloud adoption while addressing technical complexities.
- Wrote Terraform scripts to automate infrastructure deployment.

- Utilized technologies including AWS, Python, Java, Docker, Kubernetes, FSx, S3, and EC2.
- Built and implemented pipelines using CI/CD tools to streamline application deployment processes.

2. Cloud System Support

BigRio also provided comprehensive cloud system support:

- Designed, implemented, and automated AWS environments, ensuring production readiness and scalability.
- Produced high-quality technical design, build, and procedural documentation.

- Worked collaboratively with internal teams to troubleshoot and resolve issues as needed.
- Supported application deployment and maintenance, and coordinated with support teams to ensure operational efficiency.

3. Data Ecosystem Modernization

The team also streamlined data ingestion from multiple sources and consolidated clinical data warehouses. They:

- Implemented ETL processes to manage data and created data marts for downstream analytics.
- Developed predictive tools for site and country enrollment to optimize study recruitment strategies.

- Built dashboards for visualizing clinical operational data, enabling proactive decision-making and trend tracking.
- Supported the standardization of clinical protocol and informed consent form (ICF) generation to accelerate study initiation.

4. SAS Grid Stabilization and Administration

The BigRio team expanded their expertise in SAS Grid architecture on AWS and completed training in SAS administration and programming. They implemented SAS recommendations to enhance system reliability and stability, and established a biannual hotfix process to maintain infrastructure integrity and prevent disruptions.

Outcome

- **Enhanced Cloud Enablement:** The team successfully implemented scalable and automated cloud infrastructure, streamlining operations and reducing complexities.

- **Operational Efficiency:** Advanced analytics tools and dashboards empowered study managers to make data-driven decisions, reducing risks and optimizing study performance.

- **Stabilized SAS Environment:** The SAS application was stabilized, ensuring uninterrupted performance for FDA submissions.

- **Improved Productivity:** Standardized protocol and ICF generation shortened the timelines for study initiation, improving overall efficiency.

BigRio's DevOps and cloud expertise enabled the client to achieve both technical and strategic objectives. Their contributions included:

- **Cloud Strategy and Automation:** Designed and automated AWS environments, ensuring production readiness and scalability.

- **DevOps Engineering:** Built tools and pipelines using Terraform and CI/CD processes, simplifying cloud adoption and deployment.

- **Collaborative Problem Solving:** Worked closely with internal teams to troubleshoot issues, support deployment, and maintain critical systems.
- **Technical Excellence:** Leveraged a wide range of technologies, including Docker, Kubernetes, FSx, S3, and EC2, to deliver robust and efficient solutions.

Conclusion

The partnership between BigRio and the client enabled a seamless integration of AWS architecture and SAS administration while modernizing the client's data ecosystem. The solution ensured operational efficiency and regulatory compliance by stabilizing critical applications, automating cloud infrastructure, and enabling advanced analytics, paving the way for the successful execution of clinical trials.

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