

HEXWARE

Transforming Healthcare Vulnerability Data Management Analytics with Microsoft Fabric

Automating digital security data management and reporting

Case study

Client

| Client

Challenges

Solution

Benefits

Summary

A global clinical research organization (CRO) with over 40 years of experience advancing public health through innovative clinical trial solutions. They collaborate with government agencies, biopharma, and non-profits to deliver high-quality research across therapeutic areas. With expertise in study design, data management, biostatistics, and regulatory support, they ensure efficient, compliant trials. Leveraging technology and teamwork, they accelerate medical breakthroughs and improve patient outcomes worldwide.



Challenges

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Our client is a leader in clinical research, leveraging decades of expertise to drive innovation and improve global health. In the healthcare industry, vulnerability data management is critical in identifying and addressing weaknesses in digital health systems to protect patient safety and privacy, ensuring compliance, and maintaining trust. With the rise of cyber threats and intensifying regulatory changes, they looked to build proactive security measures.

They mainly faced challenges in managing and performing vulnerability scans on their data stored in legacy systems. They were heavily reliant on manual processes to extract vulnerability data produced by the Rapid7 cybersecurity tool offered with their legacy systems, leading to delays and inconsistencies in reporting.

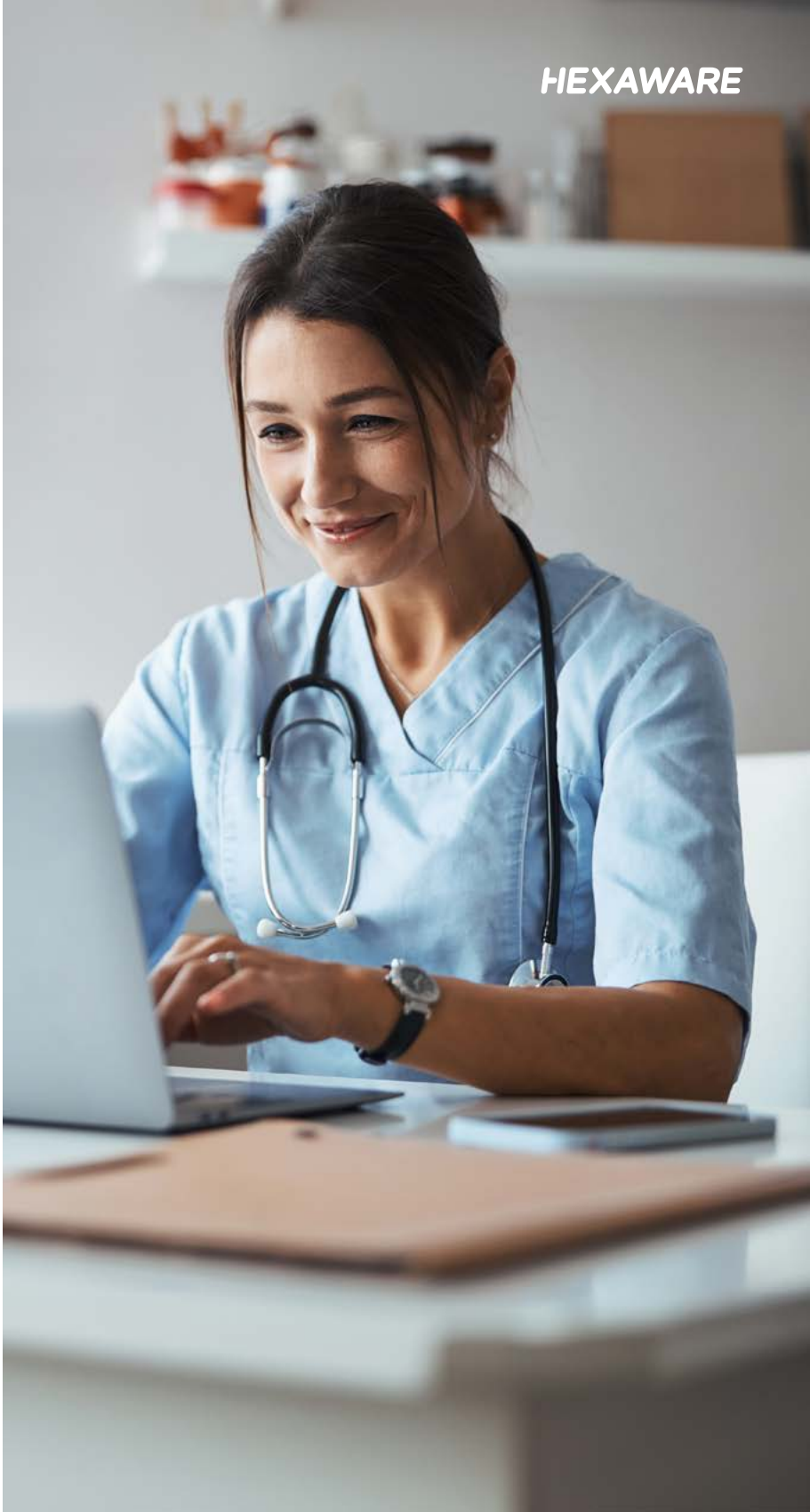
Their systems also lacked integration with modern cloud platforms, leading to inconsistent data accuracy and slow reporting cycles. They looked to leverage Microsoft Fabric capabilities to manage vulnerability management challenges to ultimately scale operations, minimize risks, and safeguard critical infrastructure. Here's what caused issues:

- **Inefficient Data Management:** Offline systems and manual work delay led to security issues and increased errors.

- **Manual Process Limitations:** Manual handling slows responses and increases vulnerabilities.
- **Data Inaccuracy Risks:** Inconsistent data weakens security and misprioritizes risks.
- **Delayed Reporting:** Lack of automation slows insights and proactive action.
- **Limited Insights:** Manual processes hinder trend analysis and risk assessment.
- **Scalability Issues:** Growing data overwhelms manual systems, reducing efficiency.

Cyberattacks on healthcare systems can disrupt operations, compromise patient trust, and violate compliance regulations like HIPAA. Manual or outdated processes for managing vulnerability data increase risks, as they delay responses to threats and hinder proactive security measures.

For our clients, protecting vulnerability data was more than just about cybersecurity—it's about preserving patient trust, ensuring compliance, and enabling uninterrupted care delivery. They needed a solution that could deliver value.



Solution

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Modernize Data Management with Microsoft Fabric

To overcome these obstacles, our client strategized to modernize data management and enhance operational efficiency within vulnerability data systems, improve data governance, and support digital transformation strategy.

- **Automated Data Retrieval and Ingestion:** Hexaware helped automate data acquisition to ensure quick access to security insights. Vulnerability data was automatically extracted from offline systems and emails using Microsoft Power Automate. This automation captured relevant data from incoming emails and offline resources, ingesting it directly into Microsoft Fabric via OneLake for continuous processing.
- **Data Processing & Transformation:** Microsoft Fabric's Medallion Architecture provided a robust framework for multi-stage data transformation. With its bronze (raw), silver (cleaned), and gold (refined) data layers, the architecture enhanced data accuracy, consistency, and quality across the entire pipeline. It also enabled seamless integration with Azure Synapse Analytics within Microsoft Fabric, scaling as data volumes grew.

- **Power BI Reporting:** The transformed data was integrated into Power BI for quick reporting and visualizations. Power BI's native integration with Microsoft Fabric enabled advanced reporting, including automated dashboards that identified vulnerability trends and actionable insights, which were critical for maintaining compliance in the healthcare sector.
- **Security and Compliance:** Integration of Microsoft Fabric with existing Azure B2C was provisioned to authenticate users, providing secure, role-based access to data and reports while ensuring compliance with industry regulations. Additionally, SSO (Single Sign-On) integration with the client's IAM (Identity and Access Management) systems further strengthened data security across the platform by simplifying user authentication and ensuring secure access to multiple applications with a single set of credentials.
- **Strategic Alignment:** This solution aligned with the client's broader digital transformation strategy, enabling them to future-proof their data management infrastructure. Microsoft Fabric's cloud-native capabilities provided scalability for future data sources, ensuring the enterprise could easily adapt to evolving business requirements and security threats.

Key Implementation Drivers

- **Medallion Architecture with Microsoft Fabric:** Helped client-enabled structured, multi-stage data processing, ensuring high-quality analytics.
- **Metadata-based Addition of New Data Sources:** Enabled the dynamic integration of new data sources, ensuring seamless incorporation and data consistency maintenance without requiring manual configuration.
- **Improved Pipeline Troubleshooting:** Enhanced monitoring and diagnostic tools in the pipeline enabled faster identification and resolution of data flow issues, improving the uptime of the data ingestion and transformation process.
- **Highly Secure Integration:** Integration of Azure B2C and SSO within Fabric provided secure, compliant access to data while integrating with the client's IAM solution.
- **Enhanced Reporting Automation:** Expanded reporting capabilities and improved security operations through advanced automation.

This comprehensive solution built with Microsoft Fabric transformed the client's vulnerability data management processes, enhancing security, operational efficiency, and strategic alignment with future business goals.

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The implementation of Microsoft Fabric and associated tools brought the company significant business benefits, transforming their vulnerability data management processes and enhancing overall operational efficiency.

Key Business Benefits

40% Faster Resolution:

By leveraging Microsoft Fabric for unified data governance and automating vulnerability workflows, the enterprise achieved a 40% improvement in resolving vulnerabilities, significantly mitigating security risks.

3X Increase in Efficiency:

Automating key tasks such as data ingestion, transformation, and reporting delivered substantial efficiency gains. By reducing manual efforts, they improved operational efficiency and gained quicker insights, enabling more responsive actions.

2X Improvement in Data Accuracy:

Automated data ingestion ensured consistent and accurate data, significantly reducing manual errors. This improvement enhanced the reliability of vulnerability assessments and decision-making processes.

Quick Threat Detection:

The solution enabled quick assessments of high-alert cybersecurity threats, empowering them to make timely

decisions and take immediate action to protect their ecosystem from potential attacks. This capability was crucial in maintaining a robust security posture.

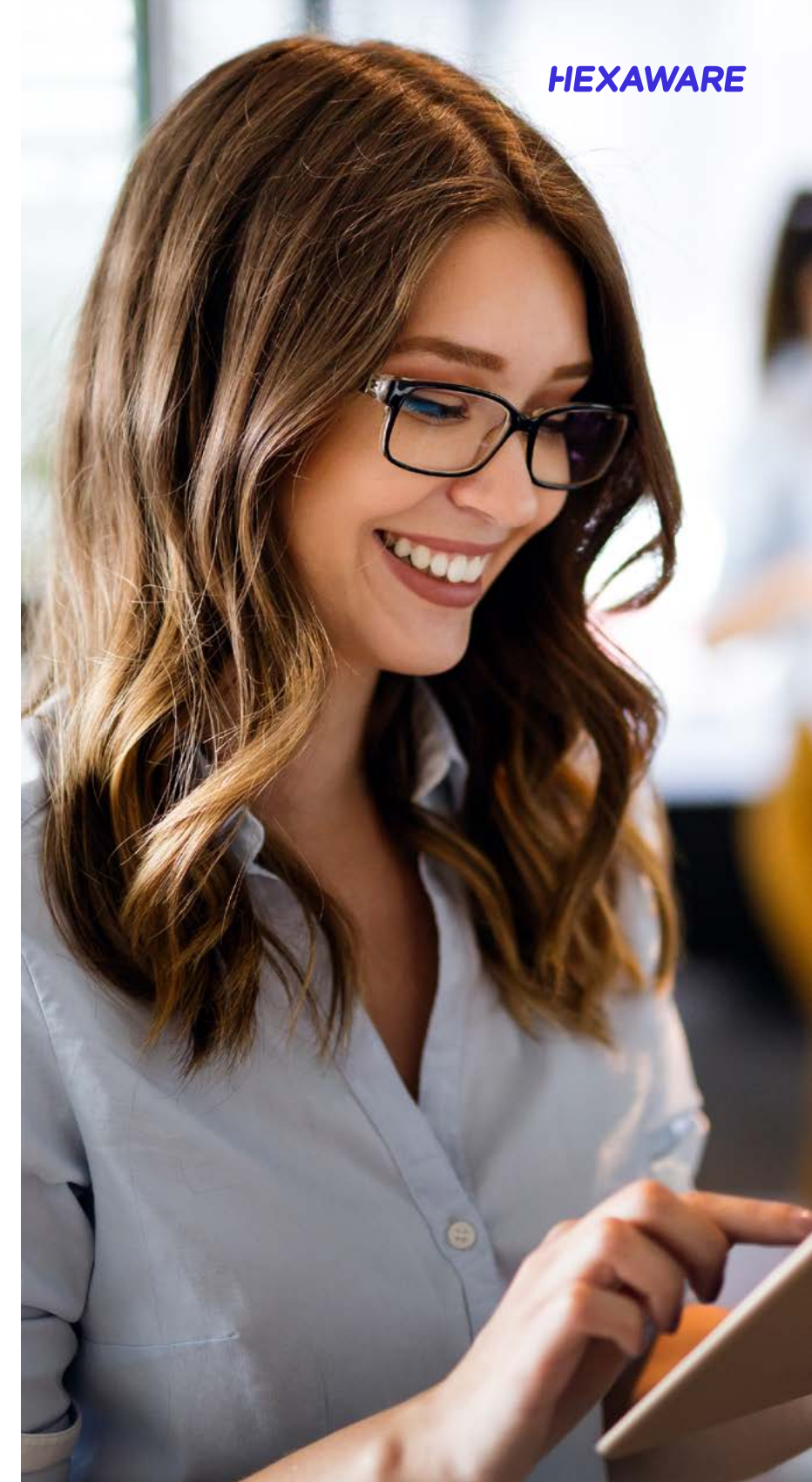
Futureproofing with Data Transformation:

The Medallion Architecture improved the overall data flow, enhancing the quality of reporting and ensuring that insights were based on high-quality, refined data.

Future Integration of Additional Data Sources:

Microsoft Fabric's metadata-driven approach facilitated the seamless integration of new data sources, allowing them to adapt to evolving business needs without significant re-engineering.

These business benefits underscore the transformative impact of modernizing vulnerability data management. They demonstrate how automation and advanced analytics drive cost savings, enhance security, and support strategic business objectives.



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Our client successfully addressed their data management challenges by adopting Microsoft Fabric. This strategic move not only resolved immediate issues but also positioned the enterprise to handle future data management needs efficiently, supporting long-term growth and innovation.

The flexibility of Microsoft Fabric's Medallion Architecture allowed our client to integrate new data sources seamlessly without significant re-engineering. This ensures that the enterprise can continue to evolve and expand its data management capabilities as business requirements change.

Automation of vulnerability data processing using Microsoft's tools improved agility, which is crucial for healthcare's fast pace, where timely responses ensure patient safety and competitiveness. Power BI's analytics enabled trend forecasting and strategy adjustments, optimizing resources and boosting efficiency.

Overall, the implementation of Microsoft Fabric and its technologies empowered the client to overcome their data management challenges and establish a robust foundation for future success, aligning with their long-term growth and innovation goals.



About Hexaware

Hexaware is a global technology and business process services company. Every day, Hexawarians wake up with a singular purpose: to create smiles through great people and technology. With this purpose gaining momentum, we are well on our way to realizing our vision of being the most loved digital transformation partner in the world. We also seek to protect the planet and build a better tomorrow for our customers, employees, partners, investors, and the communities in which we operate.

With offices across the world, we empower enterprises to realize digital transformation at scale and speed by partnering with them to build, transform, run, and optimize their technology and business processes.

Learn more about Hexaware at
<https://www.hexaware.com>.

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