

HEXAWARE

Healthcare Data Transformation: Revolutionizing Global Health Analytics Through Big Data

Powering Next-Generation Healthcare Intelligence with
Cloud-Based Analytics

Case study



Client

| Client

- Challenge
- Solution
- Benefits
- Summary

Pioneering Healthcare Intelligence

Our client is a global healthcare conglomerate that emerged from the strategic merger of a leading healthcare data provider and a renowned contract research organization. With over 100 years of cumulative experience, this organization specializes in human data science, utilizing big data to drive insights that transform patient outcomes and enhance overall public health. Their commitment to healthcare data transformation has positioned them as a key player in the evolution of healthcare analytics, focusing on precision medicine, predictive analytics, and real-time decision-making.



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Navigating the Data Tsunami

The digital revolution has opened the floodgates to an overwhelming amount of data, creating both opportunities and challenges for healthcare organizations. Our client faced several critical obstacles, including:

- **Data Overload:** With access to millions of patient records, pharma sales data, social media feeds, and institutional data from government agencies, the sheer volume was daunting.
- **Infrastructure Limitations:** Their existing IT infrastructure, primarily old Enterprise Data Warehouses (EDW), was ill-equipped to handle the real-time analytics required for modern healthcare needs. These systems were designed for structured data and struggled with the influx of unstructured data.
- **Time Constraints:** Onboarding new data was a lengthy process, taking over 12 months, which hindered timely decision-making and responsiveness to market changes.
- **System Obsolescence:** Over 100 legacy systems were nearing end-of-life support, posing a risk to the continuity of operations.
- **Efficiency Bottlenecks:** Data processing was done sequentially, leading to delays in insights and decision-making.
- **Data Redundancy:** Multiple data sources contained duplicated information, complicating analysis and leading to inconsistencies.



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Architecting a Next-Generation Data Ecosystem

To address these challenges, we initiated a comprehensive multi-level program that leveraged cloud and big data technologies. Our approach focused on four key pillars:

1. Advanced Data Lake Implementation

- **Rapid Storage Solution:** We implemented a Data Lake to provide fast, reliable, and secure storage for vast amounts of raw data. This allowed the organization to store diverse data types (structured and unstructured) cost-effectively.
- **Instant Access:** Business users gained immediate access to data without waiting for the data warehousing team to model it. This democratized data access and empowered various teams to derive insights independently.
- **Interactive Dashboard:** We developed dynamic dashboards that visualize health trends, enabling stakeholders to explore data interactively and derive actionable insights.

2. Cloud-Based Infrastructure

- **Hybrid Architecture:** Our solution involved integrating on-premises, public, and private cloud environments to create a flexible and robust architecture that can adapt to changing business needs.
- **Elastic Scaling:** By utilizing a multi-tenant cloud, we ensured that the system could scale dynamically, accommodating increased data loads without disruptions.
- **Cost-Effective Solutions:** Leveraging commodity hardware and open-source technologies like Hadoop allowed for significant cost savings while providing high-performance analytics capabilities.

3. Intelligent Processing

- **AI/ML Integration:** We incorporated Machine Learning and Artificial Intelligence to automate data processing tasks, such as data modeling and supply analysis. This reduced manual effort and increased accuracy.
- **Real-Time Analytics:** By replacing slow batch processing with parallel processing and data streaming, we enabled the organization to access near real-time data for critical decision-making.

- **Service-Oriented Architecture:** This architecture facilitated reusability and reduced redundancy, allowing teams to leverage existing modules for standard functions, thus streamlining operations.

4. Data Processing as a Service

- **Unified Data Access:** We provided a virtual single point of reference for all data and services, regardless of format. This ensured seamless access across various teams and applications.
- **On-Demand Flexibility:** The data processing as a service model allowed teams to access and process data as needed, enhancing agility and responsiveness to business requirements.

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Unlocking Value Through Transformation

The implementation of our solution yielded significant benefits across multiple dimensions:

Operational Excellence

- **Time Efficiency:** The time taken to generate country-level analytics was dramatically reduced from **4-6 weeks to just 6 hours**, enabling quicker decision-making and strategic planning.
- **Cost Reduction:** System maintenance costs were slashed by **40%**, and operational costs decreased significantly compared to legacy systems.
- **Reliability:** Achieved **99.9% system availability**, ensuring that critical analytics and data access remained uninterrupted.

Enhanced Capabilities

- **Global Reach:** The new analytics platform now serves over **15 countries**, providing localized insights and enhancing the organization's global footprint.

- **Faster Innovation:** New applications were developed and deployed with a **75% faster time-to-market**, allowing the organization to stay ahead of competitors and meet emerging healthcare needs.
- **Scalable Infrastructure:** The elastic data warehouse design allowed for seamless scaling in response to fluctuating demands, optimizing resource utilization.

Revenue Growth

- **New Revenue Streams:** The organization successfully leveraged the **API Economy**, generating new revenue by offering data services and analytics solutions to third parties.
- **Global Solutions Development:** With a unified data approach, the global teams were able to collaborate more effectively, leading to the creation of **4-5 variant solutions** to cater to diverse market needs.
- **Build Once, Deploy Anywhere:** This strategy allowed the organization to create solutions that could be easily adapted and rolled out across different regions, enhancing operational efficiency.



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Setting a New Benchmark in Healthcare Analytics

Through this transformation journey, our client has set a new standard in healthcare data management. By harnessing the power of big data and cloud technologies, they have not only addressed their immediate challenges but have also positioned themselves as innovators in the healthcare landscape. Their ability to provide timely insights and data-driven solutions is now a cornerstone of their strategy, ensuring they remain at the forefront of healthcare advancements.



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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