



# Modern Data Strategy for Large Health Systems

Business Drivers, Key Trends,  
Focus Areas



As health systems adopt new technology for better diagnosis and treatment, the volume of datasets continue to grow. Healthcare organizations need a modern data management strategy to curate data from multiple applications for optimizing datasets and delivering actionable insights.

- Data Integration & Interoperability
- Next Gen Data Management
- Modern Architecture
- Alignment to Enterprise Analytics
- Security and Compliance



## Modern Data Strategy: Market Drivers & Trends

- 80% of providers reported that the pandemic has impacted their readiness to comply with **new interoperability** and **patient access rules**
- 66% of healthcare firms believe that data entry errors contribute significantly to **record duplication**
- 76% and 66% of healthcare firms are planning to invest in **Big Data / Analytics and Cloud technologies** respectively
- 48% growth rate of **streaming data** in healthcare
- 30% expected CAGR for **IoT** in healthcare industry (2019-2023)
- 18% expected CAGR for healthcare cloud computing market (2019-23)
- 19% expected CAGR for Healthcare Big Data Analytics Market (2019-23)

### Key Drivers

- Exponential increase in volume of healthcare data
- Value based care payment model
- Stringent reporting and compliance requirements
- Enhanced cloud security standards
- Operational and cost effectiveness

**Small and midsize healthcare providers were early adopters of modern data management. However, enterprise organizations are steadily moving towards an updated approach to remain relevant amid today's constantly evolving business environment.**

# Modern Data Strategy: Key Challenges

## Business Challenges



**Fragmented healthcare data** and the lack of single source of truth (SSOT)



**Slow speed to market** due to technology and data limitations



Growing **provider consolidations** driving up healthcare costs



**Consumer-driven** strategy is elusive in the healthcare industry



Alignment to new payment models: VBC and APM with focus on population health



Reduce **total cost of ownership** with optimized landscape and scalability

## Technology Challenges



Complex and unstructured healthcare data management; new standards for integration and **interoperability**



Security of vulnerable systems; increasing **data leakages** and **cyber attacks**



Need for high performance (speed, availability, and flexibility)



**Data Governance and Stewardship:** Ownership of data and quality issues



**Regulatory Adherence:** Changing regulation and compliance needs; performance capture and reporting

# Modern Data Strategy: CitiusTech's Perspective

1

- Consolidate data acquisition, curation and provisioning to create a **single source of truth**
- Establish uniform **governance** and derive data insights from analytic platforms

2

- Adopt **modern data warehousing architectures** with next-gen data management capabilities for faster time to market
- Support newer data formats, facilitate scalability for feature engineering and future demand

3

- Implement **enterprise analytics hub** across use cases such as cross-domain scorecards, sandbox environments for advanced analytics / research, etc.

4

- Leverage enterprise **interoperability hub / API gateway** for simplifying data access and compliance with healthcare regulations

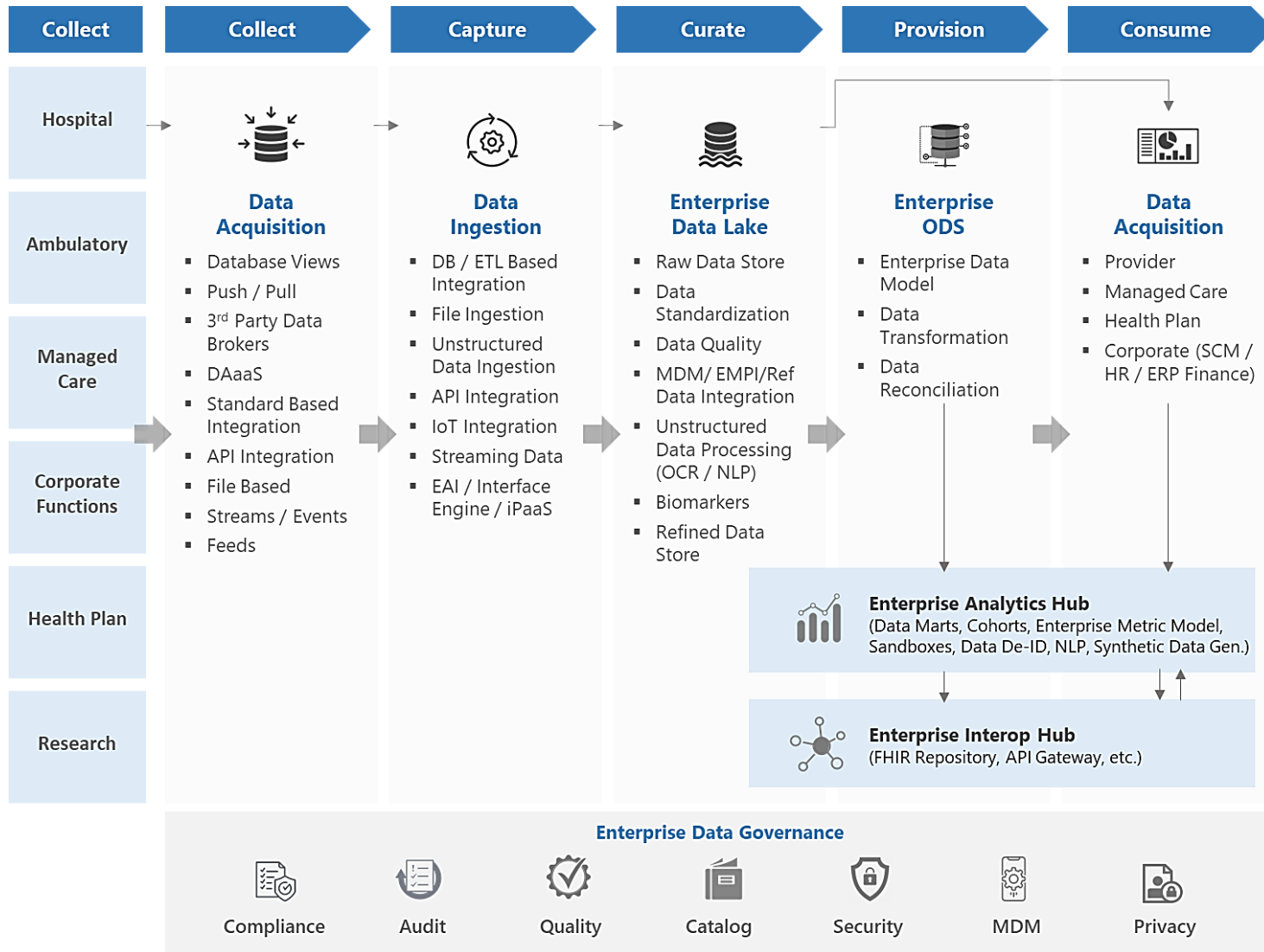
5

- Support **unstructured data processing** by leveraging modern techniques such as OCR, Imaging, Genomics, NLP, AI / ML, etc.

6




- Align business domains and priorities with enterprise analytics strategy to drive clinical, operational, and financial performance goals

# Modern Data Strategy: Reference Architecture



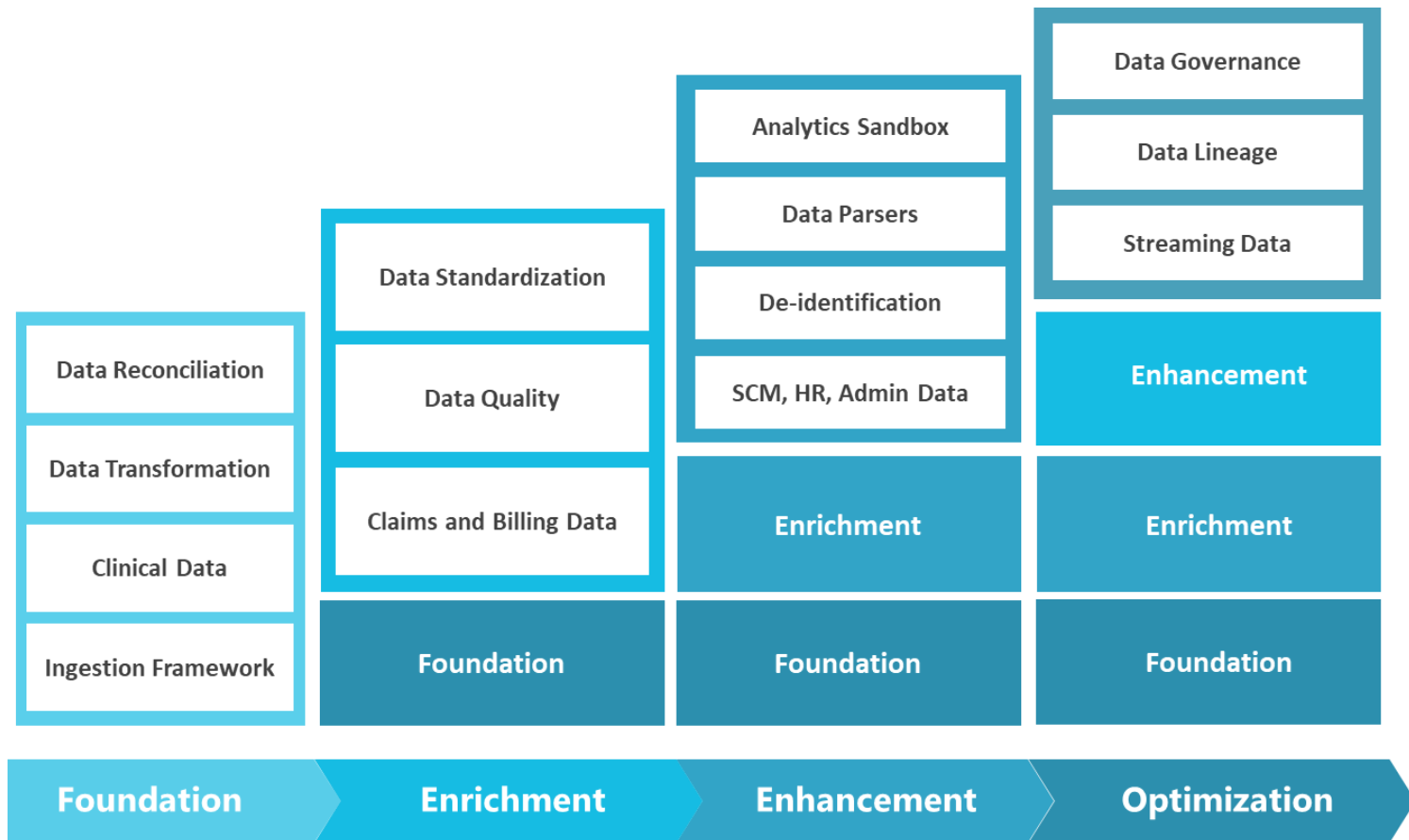
# Modern Data Strategy: Key Considerations

The adoption of Modern Data Strategy entails key considerations and transformation in three 3P's – People, Process and Platform.

 <b>People</b>	 <b>Process</b>	 <b>Platform</b>
<ul style="list-style-type: none"><li>▪ Building a strong team with expertise in healthcare domain and data management</li><li>▪ Training and upskilling resources on technology to support the modern data ecosystem and downstream requirements</li><li>▪ Learning new skills - <b>FHIR, Big Data, Cloud, AI/ML, RPA, NLP, SOA/API, etc.</b></li></ul>	<ul style="list-style-type: none"><li>▪ Strong focus on <b>data quality, governance</b> and <b>stewardship</b></li><li>▪ Security and compliance protocols</li><li>▪ Data retention and archival policies</li><li>▪ Acceleration of data-in to data-out to align with the speed of business</li></ul>	<ul style="list-style-type: none"><li>▪ Functional and technical fitment aligned with business drivers, existing technology investments and skillsets</li><li>▪ Leverage unstructured data and perform complex <b>analytical modelling</b> (unstructured audio / video data)</li><li>▪ TCO/ROI and cost benefit analysis to identify the best solution alternative</li><li>▪ <b>Holistic architecture</b> including new data standards and techniques, pragmatic roadmap, and structured approach to implementation</li></ul>

# Modern Data Strategy: Illustrative Roadmap

To ensure all the activities around data management – from collection to governance – work effectively and efficiently, CitiusTech recommends healthcare organizations to follow a data modernization strategy roadmap that aligns **business analytics domains** with **strategic priorities** to ensure faster and higher ROI.



## About CitiusTech

CitiusTech enables healthcare organizations to drive clinical value chain excellence, across integration & interop, data management (EDW, Big Data), performance management (BI / analytics), data science (predictive analytics, AI, ML) and digital engagement (cloud, mobile, IoT).

### CitiusTech Data Management Proficiency

- Strong interoperability expertise – with coverage of major healthcare data types, formats and standards
- Deep understanding of clinical applications, healthcare data models and reference architectures
- Experience around architecture, development and governance of large-scale healthcare EDW implementations
- Healthcare Big Data expertise – acquisition, modeling, data lake, MDM, security, governance and data quality
- Suite of solutions and accelerators

**300+**

Data Models  
Developed

**250+**

EDW  
Professionals

**500+**

HL7, FHIR  
certified professionals

**\$220+ Mn**  
in revenue



**4,200+**  
healthcare IT professionals

**40 Mn+**  
lives touched

**69+**  
NPS - highest in the  
industry!

**110+**  
healthcare customers





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