BCX

Innovative Technologies to Enhance Data Sharing

Data sharing platforms | API | Interoperability

Zjaen Coetzee
Executive: BDM
Business & Digital Advisory Services

BCX

The Governance We **Have**

- One size fits all
- Centre-Out
- Innovation through governance is not a priority
- Hardwired; control-oriented
- Formal decision rights are partially understood and disconnected from local decision making
- Passive; compliance-oriented

The Governance We **Need**

- Multiple styles; sensitive to context
- Encourages innovation at the centre and the edge
- Flexible, dynamic strategy across enterprise and ecosystem
- Distributed, formal and informal decision rights; connected to value
- Active; sensitive to opportunity and risk

The landscape of data governance is rapidly evolving, driven by technological advancements, regulatory changes, and increasing data volumes mostly expected to be impacted by the adoption of Artificial Intelligence into virtually everything

Gartner Predictions impacting Data in general

BCX

Increased adoption of Data Fabric
(driving factor in successfully addressing data management and governance complexity)

90% of Organizations that trade globally will have struggled to mitigate risks from sovereign data strategies and policies and incur costs that limit mission success.

15% of Large enterprises will have evaluated connected governance
(effectively manage complex cross-organizational challenges with governance programs)

80% of Organizations will have deployed multiple data hubs
within their data fabric to drive mission-critical data and analytics sharing and governance

20% of Large enterprises will use a single data and analytics governance platform
to unify and automate discrete governance programs

20% of Top data science teams will have rebranded as Cognitive Science
or Science consultancies, increasing diversity in staff skills by 800%.
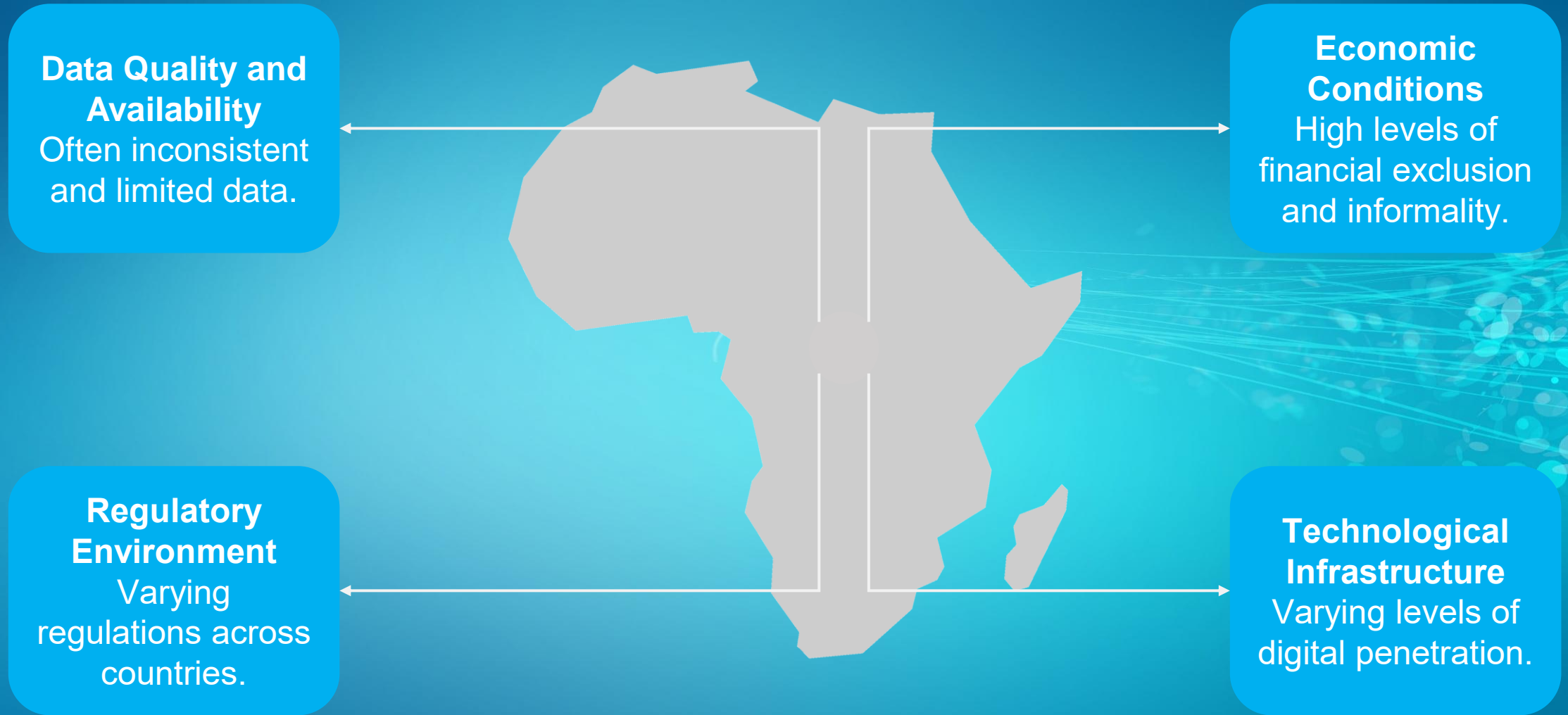
30% of New applications will use AI
to drive personalized adaptive user interfaces, up from under 5% today.

2025

2026

Credit Risk: African Financial Landscape

BCX

Data Quality and Availability
Often inconsistent and limited data.

Economic Conditions
High levels of financial exclusion and informality.

Regulatory Environment
Varying regulations across countries.

Technological Infrastructure
Varying levels of digital penetration.

Emerging Data Trends

BCX

Advanced Analytics & AI Integration

- **Predictive Analytics:** Predict risk factors and creditworthiness, forecast credit risk and assess future trends - including non-traditional data sources like social media, e-commerce, and utility payments
- **Machine Learning & AI:** Pattern detection to identify early warning signs of financial distress or fraudulent activities
- **Natural Language Processing:** NLP is being applied to analyze unstructured data, such as news articles, customer feedback and social media, to gauge market sentiment and assess potential risks that might not be identifiable in traditional data points.

Data Quality & Data Governance

- **Data Lineage and Traceability**: Ensuring the accuracy and traceability of data from its source to its final use is becoming increasingly important.
- **Master Data Management (MDM)**: Centralizing critical data assets through MDM solutions helps in maintaining consistency across different systems.
- **Blockchain for Data Integrity:** Implement blockchain technology to ensure the immutability and transparency of credit data and transactions, reducing the risk of fraud and enhancing trust among stakeholders.

Emerging Data Trends

BCX

Real-time and Near-real-time reporting

- **Real-time Risk Monitoring:** There is a growing emphasis on real-time data processing for immediate risk assessment and decision-making. This is crucial for responding quickly to market changes or emerging risks.
- **Streaming Analytics:** Organizations are adopting streaming analytics to process large volumes of data in real-time, enabling dynamic risk management and reporting.
- **Dynamic Risk Scoring:** Implement real-time monitoring systems that continuously update credit scores, and risk profiles based on the latest data, allowing for more responsive risk management.

- **Data Privacy Compliance:** Organizations must ensure that their data governance frameworks protect personal data while also allowing for accurate risk assessments.
- **Data Anonymization:** Techniques such as data anonymization and pseudonymization are being used to protect sensitive information while still allowing for robust data analysis.
- **Differential Privacy**: Apply differential privacy techniques to aggregate and analyze data while ensuring that individual data points remain confidential.
- **Homomorphic Encryption:** Use homomorphic encryption to perform computations on encrypted data, enabling institutions to share and analyze sensitive data without exposing it.

Data Privacy & Security
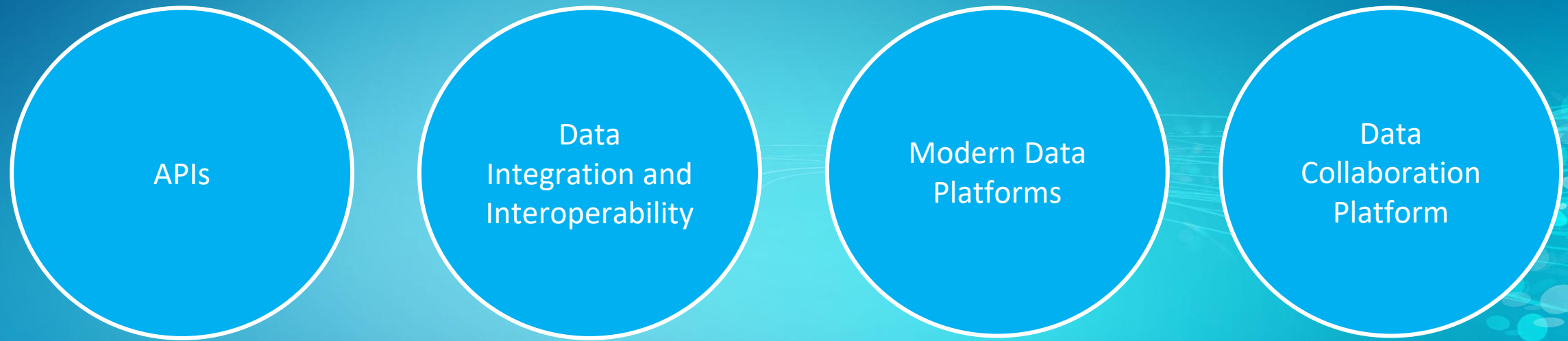
Emerging Data Trends

BCX

Cloud Adoption and Data Lakes

- **Cloud-based Data Governance:** Financial institutions are increasingly moving to cloud-based platforms for their data governance needs. This provides scalability and flexibility in managing large datasets.
- **Data Lakes:** The use of data lakes is growing, allowing organizations to store vast amounts of raw data that can be analyzed later. This is particularly useful for unstructured or semi-structured data relevant to credit and risk analysis.
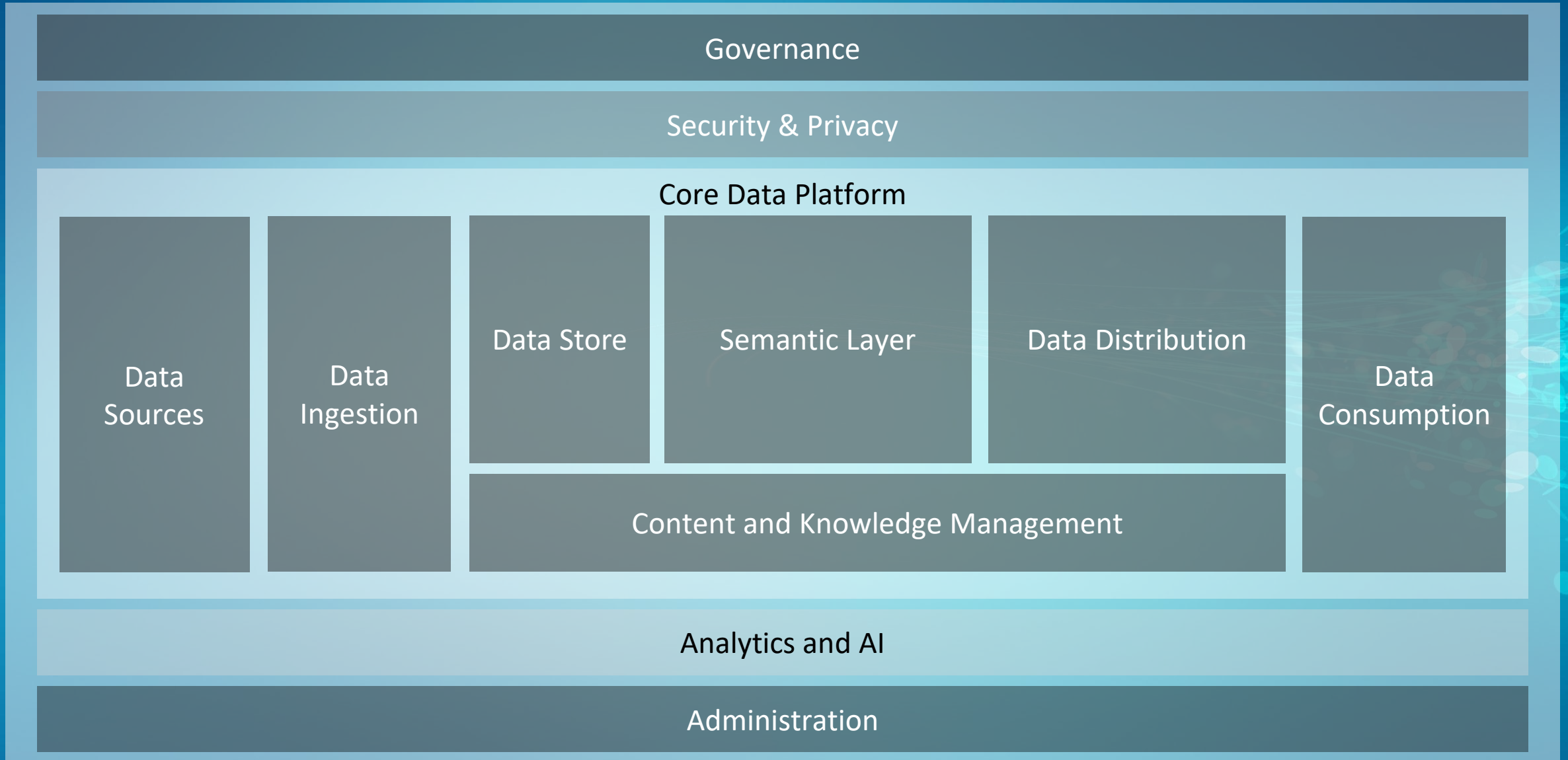
- **API-driven Ecosystems**: The adoption of APIs is enabling better integration between different data sources and systems, facilitating more comprehensive risk reporting and analysis.
- **Data Integration Tools**: Advanced data integration tools are being used to combine data from disparate systems, providing a unified view necessary for accurate credit and risk assessments.
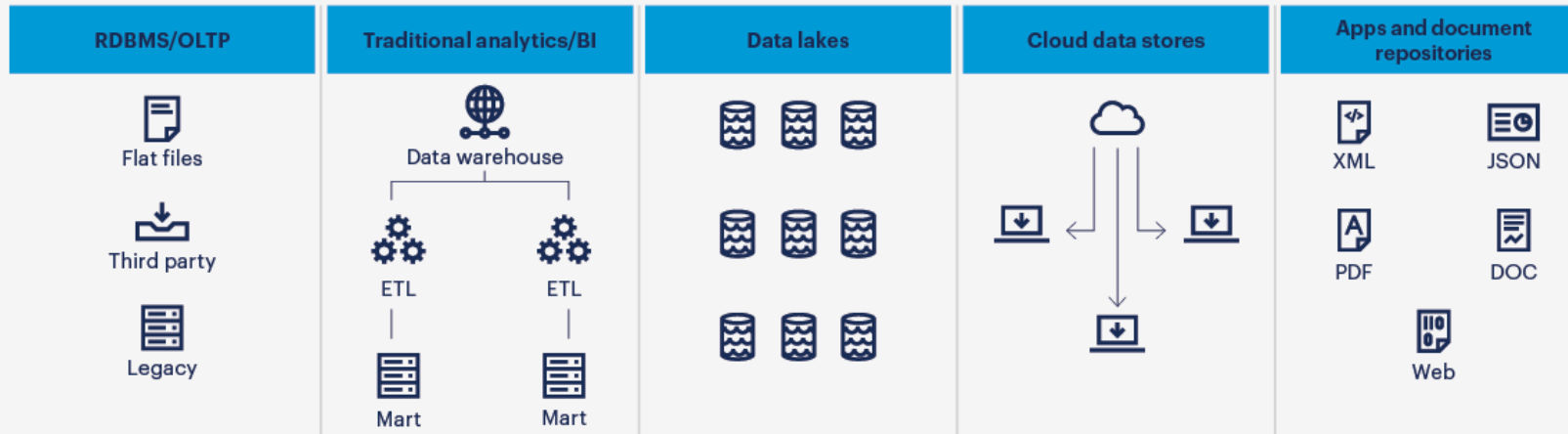
Interoperability & Integration

Leading Technologies for Data Sharing

BCX

APIs

Data Integration and Interoperability

Modern Data Platforms

Data Collaboration Platform

The Modern Data Stack

BCX

Governance

Security & Privacy

Core Data Platform

Data Sources	Data Ingestion	Data Store	Semantic Layer	Data Distribution	Data Consumption

Content and Knowledge Management

Analytics and AI

Administration

Data Fabric

Data Fabric Is an Integrated Layer of Connected Data

Data Fabric

BCX

- Unified Data Access
- Data Virtualisation
- Metadata Management
- Data Integration & Interoperability
- Security & Compliance
- Data Orchestration
- Data Governance
- Scalability & Flexibility
- Self-Service Data Access
- Automation and AI/ML Integration
- Real-Time Data Processing
- Data Lineage and Provenance
- Multi-Cloud and Hybrid Cloud Support

databricks

snowflake

IBM Cloud Pak

A data fabric architecture is designed to simplify and unify data management across diverse environments, making it easier for organizations to share, access, and analyze data.
Internal and External Data Collaboration

Data Virtualisation

BCX

- Unified Data Access
- Real-Time Data Integration
- Data Abstraction and Simplification
- Security and Access Control
- Data Governance and Compliance
- Cross-Platform and Multi-Source Data Queries
- Scalability and Performance Optimisation
- Data Transformation and Integration
- Metadata Management
- Support for Cloud, On-Prem, and Hybrid Environments
- Data Lineage and Auditability
- Interoperability
- Data Federation
- Self-Service Data Access

denodo

dremio

TIBCO

Data virtualization is a technology that allows users to access and manipulate data from various sources without requiring physical data integration or movement. It acts as an abstraction layer, presenting data from different systems in a unified view, making it easier to share, access, and analyze data.
Internal and External Data Collaboration

Data Collaboration Platforms

BCX

- Data Sharing and Integration
- Data Governance and Compliance
- Data Security and Privacy
- Collaborative Tools
- Scalability and Flexibility
- Cross-Organisational Collaboration
- Reduced Risk
- Data Anonymisation
- Secure Cloud Collaboration

omnisient

A data collaboration platform is a software solution designed to streamline the process of sharing, analyzing, and deriving insights from data across different teams, departments, or even organizations. It acts as a central hub where diverse data sets can be brought together, cleaned, transformed, and analyzed collaboratively.

Better Suited Towards External Data Collaboration

Catalyst for Data Sharing: Alternative Data

BCX

Types of Alternative Data:

- **Mobile phone data:** Call records, SMS data, location data, and mobile money transactions can provide insights into financial behaviour and repayment capacity.
- **Retail Customer Data**: Customer spend behaviour, product performance, basket size, average spend
- **Social media data:** Online activity can reveal social connections, spending patterns, and potential fraud risks.
- **Satellite imagery:** This can be used to assess the condition of properties, agricultural land, and infrastructure, which can correlate with creditworthiness.
- **Bureau data:** While not entirely alternative, bureau data in Africa is often limited. Enhancing it with alternative data can significantly improve credit risk models.

Challenges and Considerations

- **Data quality and privacy:** Ensuring data accuracy, completeness, and compliance with data protection regulations is essential.
- **Model development:** Developing robust models that effectively incorporate alternative data requires specialized expertise.
- **Regulatory environment:** Understanding and complying with relevant regulations is crucial.
- **Ethical considerations:** Using alternative data responsibly and ethically is vital to maintain trust.

Alternative data is becoming increasingly crucial for credit risk assessment in Africa, given the challenges of traditional credit scoring models.

Visual Data Sharing
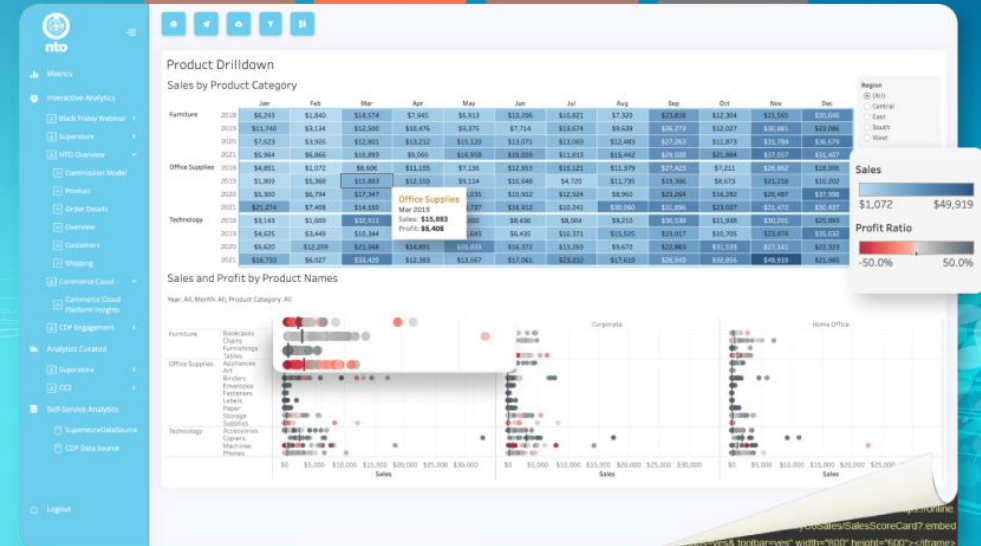
Data visualisation tools such as Tableau can be used for data collaboration, monetisation and sharing within and across organisations in a secure and well governed manner.