Data Strategy

WHAT OUTCOMES SHOULD YOUR CLIENTS & EMPLOYEES EXPECT FROM DATA?

NEW PRODUCTS AND SERVICES

- Innovation
- AI and Advanced Analytics
- New revenue streams
- New business models

RAPID SPEED TO MARKET

- Transparency of performance and customer data points
- Better understand customer needs and behavior and what matters the most
- Optimize those that matter the most

HIGHER EFFICIENCY & PROFITABILITY

- Improve transparency
- Optimize business operations
- Better and faster decisions
- Reduce direct and indirect costs

OPTIMIZED CUSTOMER EXPERIENCE

- Better understand customer needs and behavior
- Gather data points from every customer interaction
- Optimize customer journey

INCREASED REGULATORY COMPLIANCE

- Enhanced analytics and reporting
- Compliance to external regulations
- Reduce operational and regulatory risks

*By 2020, **80%** of organizations will initiate deliberate competency development in the field of data literacy, acknowledging their extreme deficiency.* [1]

*By 2021, **75%** of large enterprises will consider the office of the CDO a mission-critical function comparable to IT, business operations, HR and finance.* [1]

*By 2022, **90%** of corporate strategies will explicitly mention data as a critical enterprise asset.* [1]

*By 2022, **more than half** of major new business systems will incorporate continuous intelligence that uses real-time context data to improve decisions.* [2]

THE CHALLENGE IS THAT TRADITIONAL PLATFORMS INHIBIT CHANGE

NOT Flexible Enough to Handle New Data

COSTLY to Own and Maintain

LONGER Time to Change

OUTDATED / End of Life Technology

ISSUES with Scale / Performance

MODERN DATA TRENDS

WE'RE SEEING A VARIETY OF NEW ORGANIZATIONAL & TECHNOLOGICAL TRENDS BEING ADOPTED TO CREATE BUSINESS VALUE

CLOUD DEPLOYMENTS

More organizations are leveraging Cloud solutions to rapidly stand up analytics or operational environments

GOVERNED DATA LAKES

Governed & trusted data lakes evolve to become central source of data for the enterprise, which includes the evolution of data catalogs & metadata management

RAPID INSIGHTS DISCOVERY

Investments in AI/ML to enhance data exploration capabilities to identify patterns, trends & business opportunities previously unknown

BUSINESS SELF SERVICE

Greater use of search, NLP, SQL & self-service tools for intelligent data preparation, operational intelligence & visualizations for consumption

MODERN HYBRID ARCHITECTURES

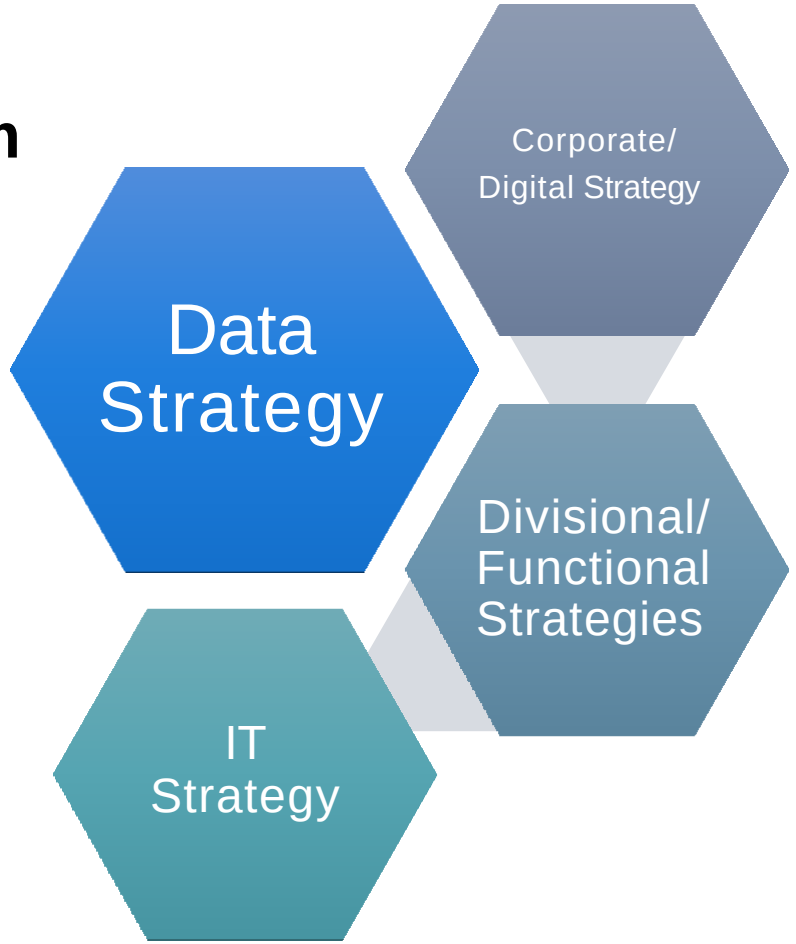
Leaders are leveraging several technology components for accelerating data movement

AUGMENTED DATA MANAGEMENT

Use of NLP & RPA to automate manual tasks to allow users with less technical skills to be more autonomous when using data.

WHAT DRIVES THE NEED FOR A DATA STRATEGY?

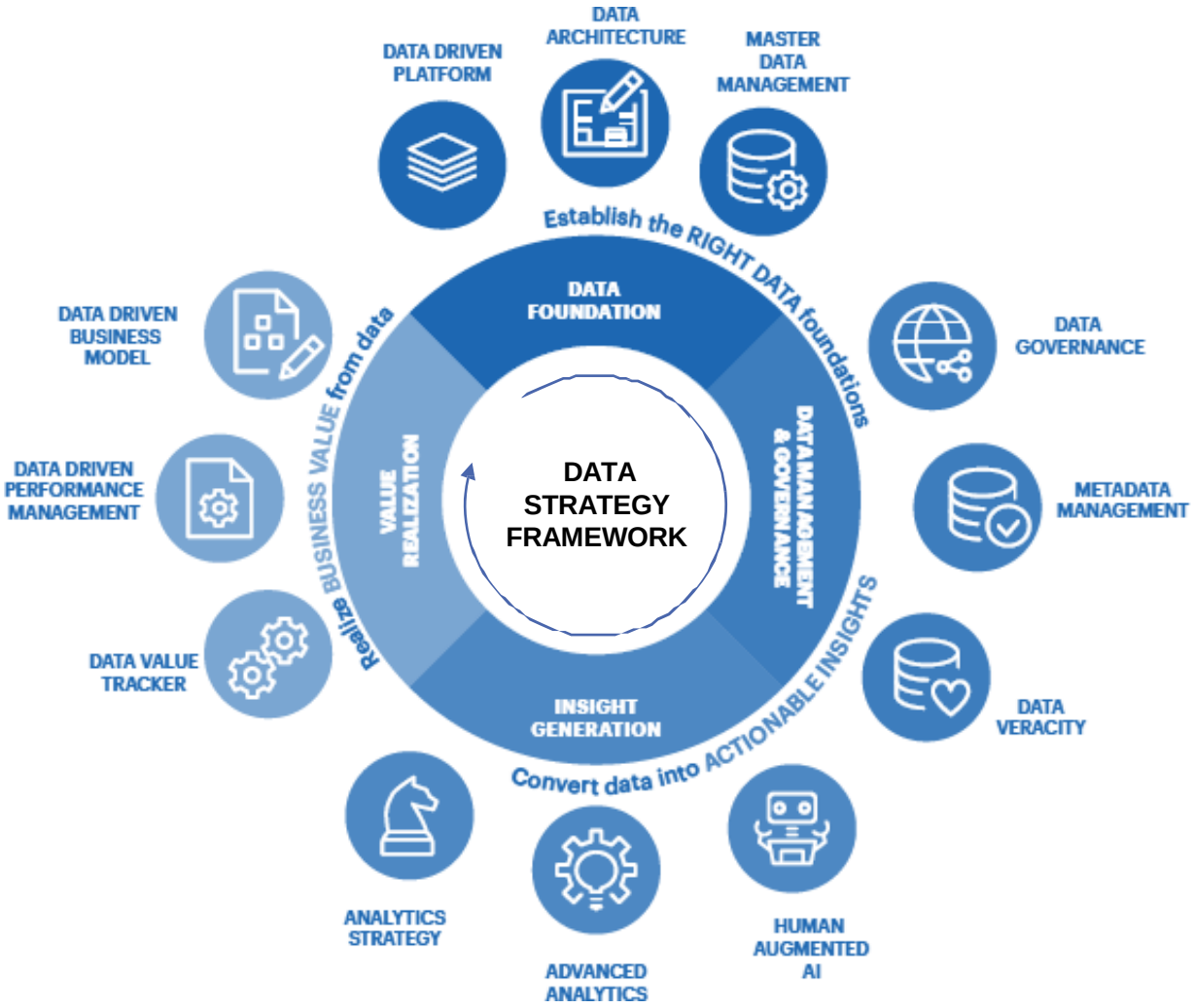
- **New Executive Leadership**
- **Mergers & Acquisitions**
- **Competitive Pressure to Digitally Transform**
  - To inform decision making
  - To understand customers and trends
  - To provide smarter services and products
  - To improve internal operations
  - To create additional revenue
- **Technology Driven Need**
  - Data Center Consolidation
  - Eliminate Technical Debt
  - Moving To The Cloud
  - Self Service



Development of a Comprehensive Data Strategy Requires Close Coordination Between the Business, Data and IT

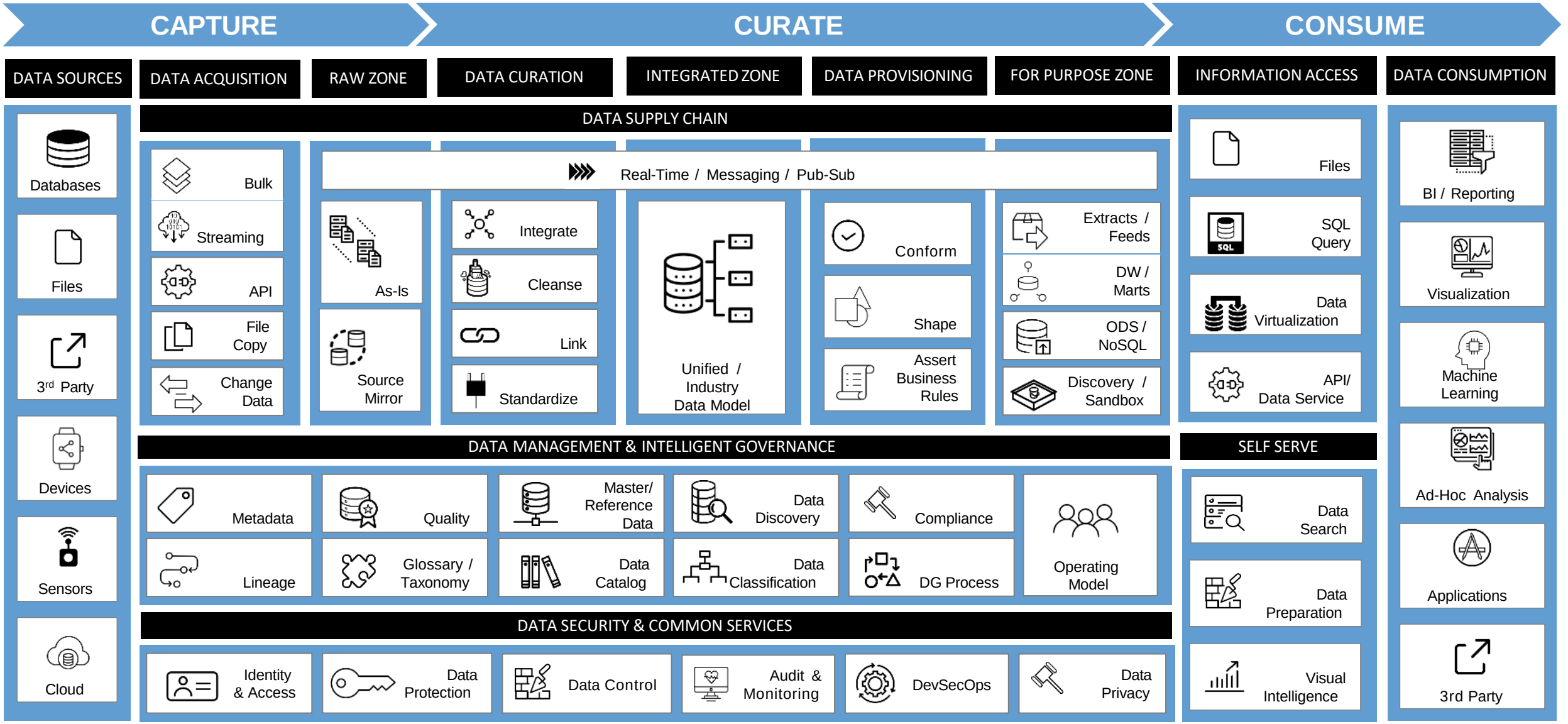
BECOMING A DATA POWERED ENTERPRISE

Based on our experience of working with data-driven companies, data-strategy engagements across industries and C-suite interviews, we developed a framework centered around 12 critical capabilities an enterprise needs to become a data-powered enterprise.

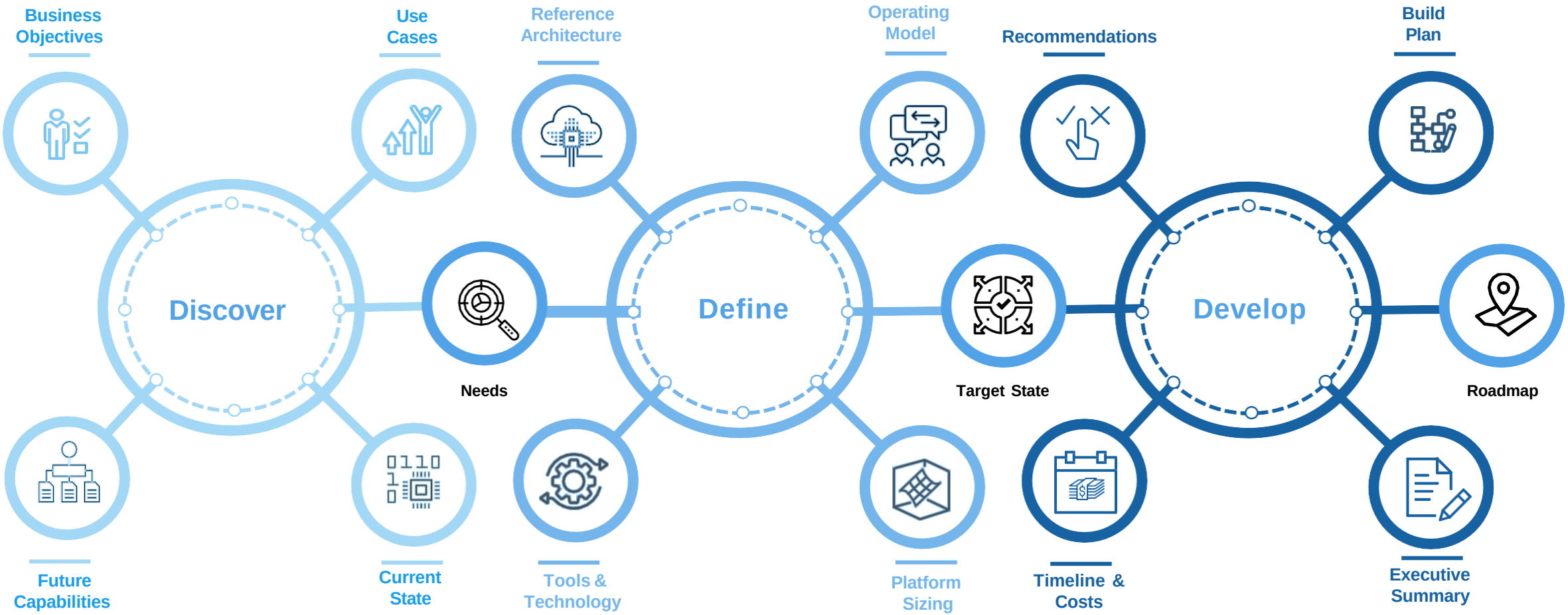


Data-driven champions execute on these 12 strategic capabilities which enable them to RELEASE VALUE TRAPPED IN DATA

OUR CAPABILITY REFERENCE ARCHITECTURE IS BUILT ON MODERN DATA ARCHITECTURE PRINCIPLES TO ASSIST ANALYSIS AND GUIDE RECOMMENDATIONS



GETTING STARTED: OUR THREE SPRINT APPROACH



SPRINT 1– DISCOVER CURRENT STATE ENVIRONMENT, USAGE PATTERNS AND FUTURE CAPABILITY REQUIREMENTS

Objective

Establish an understanding of the current data foundation and supporting data management capabilities. Engage business and IT stakeholders to get a broad perspective of desired data and technology needs. Aggregate requirements and usage patterns into themes and priorities that will help define a future state architectural vision.

Tasks

Interview Key Stakeholders

Business Stakeholders (Example)

- Fraud Risk
- Credit Risk
- GMS Risk
- Regulatory & Finance
- Global Servicing Network
- Global Risk, Banking & Compliance
- Cornerstone, Marketing
- Global Commercial Services
- EDA, GMS

IT Stakeholders

- App Dev
- Security
- Infrastructure

Capture Current State & Future Needs / Outcomes

- Interview key executives. Understand the importance of data in the overall business vision
- Meet with various business units to understand their data use cases including their consumption patterns
- Meet with various technology stakeholders to understand the technology stack and current/planned data initiatives
- Identify types of business and technical use case patterns that need to be supported, including but not limited to database migration, discovery, exploration, analytics, business intelligence, visualization, operational
- Understand data types, sources, formats and methods of data acquisition desired
- Identify capabilities needed in the platform – image and document processing, NLP, AI/ML, time-series, metadata tagging, etc.
- Define the required Information security and data life cycle required

Deliverables

- Project Plan and Kickoff
- Current State Review (use cases, consumption patterns)
- Gaps and Future Capabilities Needs

Timeline

Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 | Week 7 | Week 8 | Week 9 | Week 10 | Week 11 | Week 12

SPRINT 2 – DEFINE THE TARGET STATE REFERENCE ARCHITECTURE

Objective

Establish the Future State Platform and Technology Architecture in support of an effective Data Strategy. The Architecture will include components for the core data platform as well the data management functions.

Tasks

Target State Data Reference Architecture

- Define the capabilities within the reference architecture
- Define any additional data platform components required to support the future state. For example, for streaming data, unstructured data, API based consumption, data catalog, conversational AI.
- Define the data supply chain architecture components – collection, curation and consumption
- Define the data management architecture components – metadata, cataloging, quality, etc.
- Define non functional architecture components – backup and recovery, security and access control, cross-geo distribution, disaster recovery
- Develop target state architecture blueprint for the above, leveraging <VENDOR> reference architecture

Target State Reference Architecture (cont'd)

- Map use case patterns to the reference architecture
- Map existing tools and technologies to the Reference architecture
- Identify potential vendor solutions and tools for areas where gaps exist
- Review and iterate with American Express stakeholders

Deliverables

- Target State Reference Architecture
- Straw Operating Model

Timeline

SPRINT 3 – DEVELOP THE PHASED EXECUTION ROADMAP

Objective

Develop an Execution Roadmap defining the various phases of work. Roadmap will take into consideration business priorities and evolve the capabilities necessary to support new projects or initiatives. Focus will be on an agreed initial set of use cases. Executive summary including outlined recommendations tied back to the opportunities they will address and the business value expected to be realized.

Tasks

Roadmap

- Consolidate all recommendations into workstreams and themes
- Sequence workstream activities over phases / timeline
- Identify major dependencies across workstreams
- Develop Implementation Roadmap including timeline and milestones.
- Identify key benefits in each phase
- Estimate costs (rough order of magnitude) for each phase of work

Executive Summary & Wrap-Up

- Create executive summary of the Data Strategy engagement
- Kick off additional work streams

Deliverables

- Execution Roadmap
  - Prioritized roadmap to implement operationalize capabilities in a phased approach
  - Benefits and estimated, high-level costs aligned to Roadmap
- Executive Briefing Presentation

Timeline

Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 | Week 7 | Week 8 | Week 9 | Week 10 | Week 11 | Week 12

REPRESENTATIVE STRATEGY TIMELINE & DELIVERY PLAN

Activity	Week 0	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10
SPRINT1 **DISCOVER REQUIRED USAGE PATTERNS AND CAPABILITIES**	Project Setup	• Project kickoff • Team onboarding, access existing documentation, tools/network if necessary • Set up interviews and other meetings **Data Discussions With Select Business & Technology Stakeholders** **Document Current State Stack & Identify Capability Needs** • Current State of Data • Data Architecture • Data Integration • Data Management • Data Warehousing, Data Lakes **Current State Review**						• Master and Meta Data Management • Data Governance and Quality • Visualization & Analytic Consumption Patterns • Data Science, ML, AI • Data Security				
SPRINT 2 **DEFINE THE TARGET STATE ARCHITECTURE & OPERATING MODEL**				**Prioritize Business, Data And Technology Capabilities Necessary In The Target State** **Develop Target State Reference Architecture** **Stakeholder Reviews** **Health Check The Operating Model For Supporting Target State . Develop API Strategy Framework.** **Target State Architecture Review**				• Socialization of findings and priorities is critical across all stakeholders • Review proposed solution architecture • Iterate as necessary which will inform the Execution Roadmap		
SPRINT 3 **DEVELOP THE EXECUTION ROADMAP**							**MVP Planning** **Create Near/Mid/Long Term Execution Roadmap** **Rom Estimates Based On Priorities** **Final Executive Readout**				

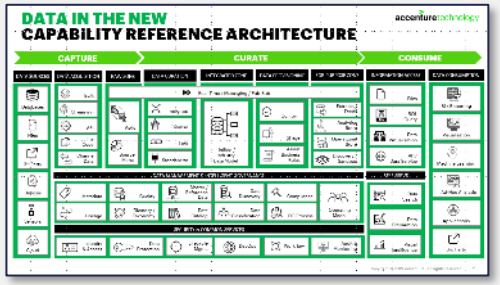
SUMMARY OF CORE DELIVERABLES

DELIVERABLE	WEEK	DESCRIPTION	VALUE
Project Plan & Kick-Off Deck	1	Plan highlighting weekly activities including interviews, documents to review, executive checkpoints and deliverables for the project [MS PowerPoint]	*Informs all stakeholders in terms of planned activities, dependencies, required participation.*
Project Status Reports	Weekly	Weekly status report with progress to date, deliverables status, issues and risks (MS PowerPoint)	*Creates end to end project transparency.*
Data Use Cases & Data Consumption Patterns	4	Priority data use cases and consumption patterns gleaned from discussions with internal and external data consumers [MS PowerPoint]	*Helps to prioritize planned business capabilities for MVPs and Roadmap.*
Current State Data Architecture & Future Data Capabilities Needs	4	Document current data and technology landscape and capabilities including data sources, existing data assets, existing technologies, existing high-level data flows, integration patterns, and required future data capabilities [MS PowerPoint]	*Confirms the current technology landscape, current data capabilities and required capabilities to satisfy prioritized use cases.*
Current State Readout	5	Synthesis and validation of current state findings including current approach, prioritized use cases and current state architecture gathered from the stakeholder interviews and other sources [MS PowerPoint]	*Communication of summarized findings, unresolved issues and next steps.*
Target State Data Architecture	8	Target state Data Architecture showing all components of the data supply chain and data management capabilities with tools and technology overlay [MS PowerPoint]	*Illustrates major components of the future state data supply chain.*
Execution Roadmap	9	Implementation work plan organized in workstreams and phased to deliver data capabilities including high level cost estimates (ROM) [MS PowerPoint]	*For funding, technology planning and stakeholder alignment purposes*
Executive Briefing Presentation	10	Summary of the Data Strategy and final recommendations to socialize with all stakeholders [MS PowerPoint]	*For funding, technology planning and stakeholder alignment purposes*

<VENDOR> TEAM COMPOSITION

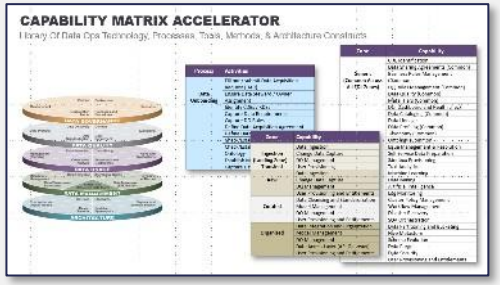
ROLE	ALLOCATION	RESPONSIBILITIES
Data Strategy Lead	Full Time Weeks 1-10	• Seasoned program leader with expertise in data strategy, data science, and large-scale AI/ML cloud deployments • Manage day to day project planning and management activities. Acts as the single point of contact for American Express • Lead development of roadmap and executive summary • Provide oversight for joint client and <VENDOR> delivery teams
Data Strategy Architect	Full Time Weeks 1-10	• Understands current state environment • Provides industry leading best practices and insights to inform future state architecture • Develops target state conceptual data architecture • Recommends tools and technologies • Assists in estimating level of effort for roadmap workstreams, roadmap development, demos
Data Strategy Analyst	Full Time Weeks 1-10	• Documents future state vision • Documents use case patterns desired • Documents capabilities needed in future state • Provides inputs on data governance, data quality strategy recommendations • Contributes to development of Roadmap and executive summary
Data Governance Lead	Full Time Weeks 3-10	• Leads and guides on the definition of the Organizational Model • Leads and guides on the definition of the Data Governance Framework/Operating Model • Leads and develops technology capabilities requirements for scalable data management • Creates and socializes the Data Governance roll out plan
Data Governance Analyst	Full Time Weeks 3-10	• Supports the Data Governance Lead • Performs detailed analysis, organizes existing artifacts • Assists with documentation

DATA STRATEGY ACCELERATORS



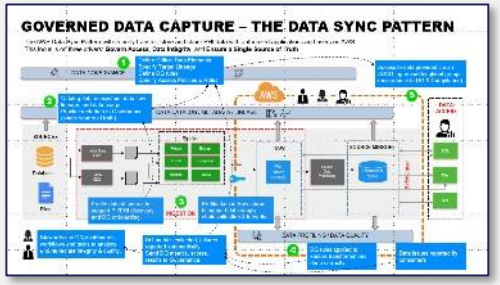
Modern Data Platform Reference Architecture

Reference Architecture showing all components of the data supply chain and data management including tools and technology overlay



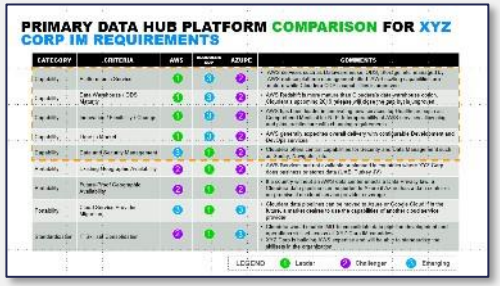
Modern Data Capabilities Inventory

Organized inventory required / desired capabilities across the ownership and operations spectrum for a modern Data platform.



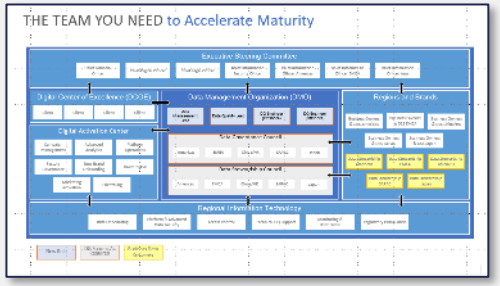
Proven Architectural Patterns

Proven, flexible architecture patterns tailored to what must be accounted for in the current technology environment as well as required capabilities of the future state architecture.



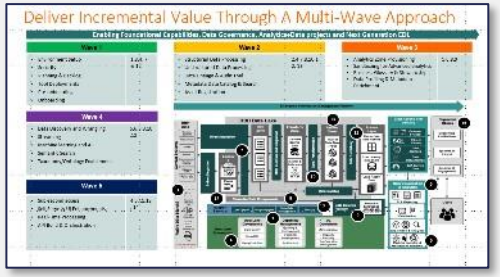
Vendor Tool Comparisons

Intelligence on vendor tool features and capabilities, especially the cloud providers including Amazon, Microsoft, and Google as those capabilities relate to our Reference Architecture



Straw Operating Model

Outline options and initial content for a straw operating model which will have the flexibility to evolve depending on the requirements of the data governance organization



Execution Roadmap

Based on prioritized use cases, funding availability, and ability for the organization to introduce new capabilities. Outcomes driven execution plan with budgetary cost estimates.

WE ARE READY! COLLABORATING SECURELY AND EFFECTIVELY IN TODAY'S ENVIRONMENT

- **We Will Operate With Flexibility –** If your enterprise has preferred communication tools and procedures, we will be flexible. For instance, if you prefer to use Zoom or other collaboration tools, we are happy to accommodate. One note, we are not allow to download certain types of software on our <VENDOR> issued laptop without special permission.

- **Calls and Virtual Meetings –** <VENDOR> has adopted **Microsoft Teams** as the platform for calls and virtual meetings. Microsoft Teams is a unified communication and collaboration platform that combines persistent workplace chat, video meetings, file storage, and application integration. The service integrates with the company's **Office 365** subscription office productivity suite and features extensions that can integrate with non-Microsoft products.

- **Secure File Sharing** – If there is a need to share sensitive files, <VENDOR> has secure facility the <VENDOR> External File Share (AEFS) tool. Documents will be scanned via Data Loss Prevention (DLP) technology for sensitive data. Any information shared will trigger security alerts.

- **Whiteboarding** - If we need to virtually whiteboard with non-<VENDOR> participants, we can reach out to the NextGen Comms team for a Mural license.

CREATING A DATA-FIRST VISION

Shift to a **service oriented delivery model** to enable self-service

Work in **agile sprints** to change and adapt quickly

Invest to **increase the "data IQ"** of the organization

Become **cost competitive** and then re-invest to scale up

Establish clear **operating model with define roles & responsibilities between the business and IT**

Orient the enterprise data backbone data capabilities to **business-centric services**

Enable **self-service by adopting API first** philosophy

Build enterprise ready data capabilities in **cloud for scale and performance**

Establish golden data sources (MDM) to improve trust in data

Create a data marketplace so data consumers can find, understand & trust data

DATA + AI AT THE CORE OF DATA-LED TRANSFORMATION – 3 TOWERS – 10 OFFERINGS

DATA + AI FOUNDATIONS

Develop holistic data strategies and architect, engineer and/or modernise platforms to unlock and accelerate data-led transformation.

DATA +AI STRATEGY & ARCHITECTURE

- **CDO agenda** with view on centralised data functions & CDO ascent
- **Strategic assessment** with external & <VENDOR> benchmarking models
- **Data+AI strategy** with business case, capabilities definition, costing, rapid data lab & roadmap
- **Enterprise data warehouse to cloud strategy** with migration, tooling and architecture.
- **Modern data architecture** with current & target states, reference arch. & implementation plans.
- **Data operating model** with roles, organisation, data factories, processes and operationalisation.

SUPPLY CHAIN

- **Intelligent data warehousing** with modernization, migration and automation (ML).
- **Data self service**: with automation.
- **Data lake industrialization** with modernisation, governance, lineage and security.

PLATFORM AND TECHNOLOGY

- **Data on Cloud** with multi cloud, architecture, migration, consumption, cloud mgt & accelerators.
- **Data on Azure, Data on AWS** and **Data on GCP.**
- **Integration and migration** with batch & real-time and mass migration with DW or lake migration to cloud
- **Enterprise platform data** with ERP data challenges, ERP capture & curation, ERP governance, archiving and data functions for ERP.

Key enablers: Data lighthouse | Studios with dawn of new data, data of the possible, what the tech & prove your data

GOVERNANCE, MANAGEMENT & ETHICS

Design and implement sustained data management and governance to enable secure, consistent, ethical and governed use of data.

DATA GOVERNANCE

- **Governance model** with current state review, strategy design, policies, metrics, demand, org structure, implementation models and operationalization.

ENTERPRISE DATA MANAGEMENT

- **Smart data management & quality** with data lineage, profiling, big data governance, single consolidated views, AI/ML and as a service capabilities.
- **Master data management** with strategy, roadmap, tool selection, implementation, operationalization and “as a service” capabilities.
- **Metadata management** with marketplace foundations, data search, discovery & cataloguing, integrated metadata exchanges and tooling, and data access & control protocols.
- **Product information management** with strategy, roadmap, tools, implementation and operationalization.

SECURITY/ETHICS AND COMPLIANCE

- **Security and compliance** with discovery, classification, obfuscation /masking/encryption, loss prevention and machine led compliance.
- **Data ethics** for use & controls within limits, laws, regulations and intended context and purposes.

Enabler: Intelligent data suite

DATA STORYTELLING & AUTOMATION

Transform businesses with the power of augmented insights, data science, and artificial intelligence and automation at scale.

AUGMENTED INSIGHTS

- **Business intelligence and visualisation** for data literacy with design and implementation of capability
- **Visualization for CXO office** with design, capability development and implementation
- **Enabling data pipeline for data science** with capability, platform, lab set up.

ARTIFICIAL INTELLIGENCE

- **Machine learning for technology/IT** with AIOps, ML for full SDLC, operations for ML and mywizard
- **Natural learning processing & understanding** with intelligent context, speech analysers, image analysers, MALTA and SAGA, with industry reference and language detection.
- **Explainable, responsible & compliant AI**

INTELLIGENT AUTOMATION

Automation: with automation engineering services (AES), with value discovery, architecture, COEs, systems implementation, RPA mgt., RPA@Scale and process discovery.

VIRTUAL AGENTS

- **Conversational AI** with maturity assessment, intent discovery, user interactions, implementation & deployment on the *conversational AI platform.*
- **Intelligent advisors**, for AI powered man-machine industry solutions.

Key enablers: MALTA, SAGA | AES | <VENDOR> conversation AI platform | Studios: It’s your bot, analyze any text and where’s the search

The Enterprise Data Strategy Has Three Key Principles

BUSINESS STRATEGY DRIVES THE ENTERPRISE DATA STRATEGY

Data Drives Business Value

- Data-driven decision making is embedded in our culture
- Data is a strategic enterprise asset for The Enterprise and its partners
- Data delivers insights that drive clear business value and accountability
- Data is core to our digital foundation
- We support our partners and stakeholders with data
- Data is used responsibly and ethically

Data Is Managed Effectively

- Data is easily searchable, accessible, and reusable
- Data is secured, protected and governed with risk-based protection and access
- Data accuracy and quality are an enterprise-wide commitment
- Data is virtually centralized, but physically distributed
- Data is constantly transformed to make it actionable

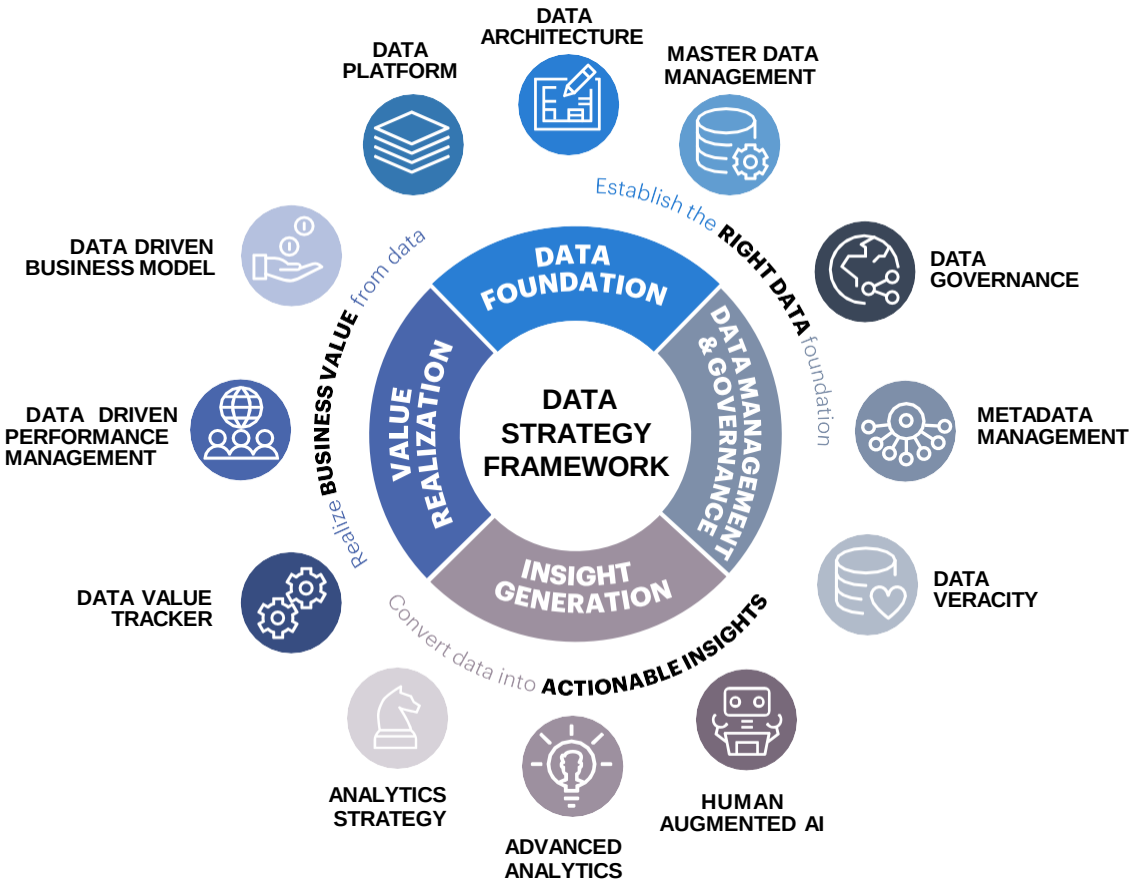
Data Talent & Literacy Maximizes Investment ROI

- Data talent strategy is an enterprise responsibility
- Each functional area has the data talent that it requires to execute its data strategy
- Data literacy is prioritized at all levels across the enterprise
- Data innovation can be unleashed when all tiers of data consumers can generate maximum insights from their training and support

SHIFTING TO CLOUD CAN YIELD 20-35% IN COST SAVINGS FROM SERVERS, FACILITIES, AND LABOR

BENEFIT LEVER	ESTIMATED SAVINGS/ COST AVOIDANCE	COST SAVING DESCRIPTION
Software	21-30%	• License/instance consolidation and changed consumption model; avoid price increases at end of term, avoid major upgrade SW-related costs
Data Center	20-30%	• Space consolidation/rack density (e.g. cages) and power savings (heating, cooling, electrical, UPS)
Network	18-27%	• Network infrastructure savings/cost avoidance, potential circuit consolidation, and traffic compression • Consider scalable pipe to cloud provider to facilitate bursting
Server	36-47%	• Burstable architecture build to non-open enrollment peak • Reduced refresh/support costs
Storage & Backup	31-36%	• Increased storage consumption in public/hybrid cloud • Re-engineering of archive storage to use cloud • Migration to Storage Pods (SAN to NAS)
Labor	25-33%	• Labor costs are improved through reduction of FTEs, which drives savings dependent on level of existing outsourcing of resources • Redesign of processes to reflect changing infra services delivery approach
Analytics & Automation	20-30%	• Event Aggregation/Correlation and Automation predicted to provide productivity gains on infrastructure incidents

DATA DRIVEN ORGANIZATIONS EXECUTE ON 12 DATA CAPABILITY DOMAINS TO ACHIEVE BUSINESS OUTCOMES



1. ESTABLISH THE RIGHT DATA FOUNDATION

They integrate data across the enterprise in a structured way to provide faster access to trust-worthy data that can be used to drive insights and real-time decision making

2. OPERATIONALIZE DATA MANAGEMENT AND GOVERNANCE

They focus on controlling and managing data at scale so that it can be leveraged as an enterprise-wide strategic asset

3. CONVERT DATA INTO ACTIONABLE INSIGHTS

They leverage analytical insight generation to serve as the gateway to insight-powered enterprises; integrating data-driven decisions across the business functions

4. REALIZE VALUE FROM DATA

They ensure implementation of analytics strategy is generating business benefits and driving sustainable returns for the enterprise

DATA STRATEGY & ROADMAP CASE STUDY

LEADING INSURANCE PROVIDER

Challenges

- **Leading global health service company**, offers health, pharmacy, dental, supplemental insurance and Medicare plans to individuals, families, and businesses.
- Operational Data landscape is **silo'd by Business Unit**, lacks an Enterprise Source-of-Truth, and contains a number of **point solutions with redundant data**
- Limited ability to re-use solutions due to **lack of a central authority** for **design** and build of enterprise data solutions
- Ungoverned decisions re: data and technology proliferate data point-solutions and tool / technology redundancy, causing **Increased complexity** and operating expense
- **No source-of-truth for each domain** degrades Customer and Provider Experiences and limits business process efficiency and flexibility

How <VENDOR> Helped

Established **Strategic Enterprise Data Architecture** with efficient Data Supply Chain, delivered through **Data Management capabilities** enabling **Systems with high-quality, trusted data**

- Evaluated Customer, Provider, Producer/Intermediary and Client/Buyer **data assets** across Commercial, Government, and Health Services **Business Units**
- **Pinpointed challenges with existing assets** and capabilities vs. **reference architecture** and industry **best practices**
- Defined target state **Strategic Operational Data Architecture**, guiding principles and **recommendations**
- **Established** a **roadmap**, including near-term **next steps to mobilize toward target state**

High Performance Delivered

- Increased **data capability ROI** by building scale and competency
- **Reduced time** of developing data assets necessary for business solutions, such as those needed for **Digital initiatives**
- Facilitated **cross-domain business needs** with business outcomes spanning **customer experience, affordability of care, regulatory compliance, operational efficiency, and growth**
- Enabled HI2 interoperability to meet **regulatory compliance** and enable modern customer experience when using digital applications
- **Decreased costs** of tool licensing, specialized resources, and data management

DATA STRATEGY & ROADMAP CASE STUDY

LEADING INSURANCE PROVIDER – INTERNATIONAL MARKETS

Challenges

- **Leading global health service company**, offers health, pharmacy, dental, supplemental insurance and Medicare plans to individuals, families, and businesses.
- International Markets division sought our help to **architect an enterprise data management** solution that enables increased business value from data
- Looking to improve **Quality, Cost, Revenue, and Innovation** while meeting and preparing for current and future **Data Privacy** laws
- Balance global **Business and Compliance needs**, while standardizing existing data platforms and capabilities across common technologies
- Develop a Roadmap stand up the architecture in a phased approach over time

How <VENDOR> Helped

Vision Definition & Current State Discovery

- Interviewed **consumers, architects and privacy office** stakeholders. Documented current capabilities and pain points as well as future needs.
- Developed Use Cases, Consumption Patterns and Current State Platform Data Architecture

Future State Recommendations

- Defined target state **data and technology architecture** along with governance and policy framework that in combination, provide reusable patterns for data storage and consumption

Roadmap for Execution

- Developed **strategic plan** for standing up recommended target state architecture and governance and policy framework

High Performance Delivered

- **AWS** chosen to be the **primary platform** for the data architecture, with **Azure** as a **secondary** option and **Cloudera on-premise** as a 3rd option
- **Data Hubs** to enable **central data access & reporting**, use of **innovative AWS services, build of common services** across Data Hubs, and **enforcement of Data Privacy** requirements
- International Data Supply Chains have considerations around **country-specific** data ingestion, data curation, and data protection patterns into data hubs
- **Data governance** and **compliance policies** will align to the architecture. Collibra will manage **business metadata** and a data catalog (e.g. ASG, Manta) will scan **technical metadata** and **lineage**
- **Data Hubs** planned for **North America**, **Europe**, and **Asia-Pacific**

DATA STRATEGY & ROADMAP CASE STUDY

LEADING INSURANCE PROVIDER

Challenges

- The client is a leading insurance provider with a 70+ €B Gross Written Premiums yearly and composed of 7 Business Units and 70+ Legal Entities worldwide
- The client is structured in a federated model so each Business Units govern and carry on independently their own data strategies which implies a great displacement on data governance and management maturity between countries and a lack of potential synergies
- The idea was to establish a function at Group level to orchestrate a shared Data Strategy and to act as facilitator for best-practice and common capabilities sharing

How <VENDOR> Helped

<VENDOR> supported the Group Chief Information and Digital Office (CIDO) designing and establishing the “Enterprise Information Management” (EIM) program with the aim to commit Business Units on a shared Data Strategy and to exploit synergies by centralizing core data governance and management capabilities.

In particular, <VENDOR>:

- Designed the shared EIM framework and maturity model
- Performed the EIM assessment on 5 Bus to understand current maturity levels
- Defined the Group target operating model and policies for Data Governance
- Designed the Group’s reference Conceptual, Logical and Metadata model
- Evaluate the Business Case for the reference data model adoption

High Performance Delivered

- 6 Business Units on board, committed to share a Data Strategy and core capabilities at Group level
- Assessed a medium-low maturity level for EIM capabilities, identified common initiatives to be launched at Group level to exploit synergies and Business Unit’s specific initiatives
- Estimated 17.5 €M potential benefits at Group level in 3 years for digital initiatives accelerated by the local bridging of the reference data model
- Started program phase 2 to on board new Business Units, extend the scope of the reference data model and support Business Units mapping toward the reference data model

DATA STRATEGY & ROADMAP CASE STUDY

DEFINING GLOBAL COMMERCIAL INFORMATION MANAGEMENT STRATEGY

Challenges

- Diversified global Pharma & Biotech leader that makes a wide variety of Health Care products ranging from Rare Disease to Animal Health Care. Due to a changing product portfolio, new distribution models, the growing influence of provider / payer networks and recent merger, there has been an increased need to effectively manage and exploit the company's information assets.
- The absence of a coordinated information management vision frustrates the organization's ability to adjust to changing market conditions and results in slowness to action and missed opportunities.

How <VENDOR> Helped

- Initiated by CIO while partnering with Chief Commercial & Marketing Officers and other business & IT executives, created Enterprise Information Management vision and associated roadmap of actions that addressed business challenges.
- Led more than two dozen discovery sessions, 6 workshops across business & technology leads to summarize, assess and prioritize Information needs from a value perspective, crafting architecture, technology, operating model and change management recommendations to incrementally provide value through a practical and executable roadmap supported by planned resources (potential partners & vendors) who will get to work with the client

High Performance Delivered

- Produced a 3-year roadmap refining the Vision by enabling required Data, Analytics & AI capabilities in delivering the new Commercial milestones while aligning business and IT leadership towards a common vision
- Solution enabled rapid analysis of more information, Cost Savings (Improved Operational Efficiency / Reduced Run Costs) and Reduced risk of non-compliance

DATA STRATEGY & ROADMAP CASE STUDY

MULTINATIONAL INVESTMENT BANK

Challenges

Large banking client wanted to shift from Teradata to a Hadoop platform to cut costs and support business needs around agile analytics and better data quality. There were barriers to downstream usage and confident decision making due to the current architecture.

These were arising due to the following challenges -

- **Semi-structured application logs** were being parsed and converted into a structured format for downstream usage. This approach was infeasible since log formats were changing dynamically. The business required **search and visualization** capabilities to analyze application logs, attach, identify tags and derive intelligent insights.
- There were issues in **data reconciliation between Teradata and Hive tables** (which were used by business users), leading to a lack of trust in using that data.

How <VENDOR> Helped

- Given the client's need to ensure downstream consumption and data trust, <VENDOR> focused on alignment on objectives, use-cases and success criteria for implementation. This was followed by a development of architecture options for log analysis and data reconciliation.
- For log analysis functionality, tools like MongoDB, Splunk and ELK were evaluated and an evaluation framework developed. ELK stack was suggested as the best-fit for the client which would be effective for:
    - Their log search and parsing needs
    - Real-time and batch mode processing of logs
    - Visualization and dashboard building needs
    - Their time and budgetary constraints
- <VENDOR> created a Reference architecture model to handle semi and structured data that was the best-fit for the client's ecosystem and business user needs

High Performance Delivered

- Developed a plan to handle reconciliation issues along with a Demo of
    - How to use <VENDOR> proprietary tool, IDF to ingest logs from HDFS into Elasticsearch
    - Detailed view on how to use Kibana for complex explorations and build real-time dashboards with **accurate reading of tags**
    - How to create value by promoting downstream use through HBase and QlikSense, **using collated datasets from different sources**

DATA STRATEGY & ROADMAP CASE STUDY

GLOBAL FINANCIAL SERVICES: BIG DATA ANALYTICS AND DATA MANAGEMENT AS A SHARED SERVICE

Challenges

- Multiple business units within the company **recognized the need to improve sales, marketing and underwriting strategies within and across the enterprise through analytics** but had no competency developing a big data solution that would meet the need
- **Silos of data within business unit systems were not easily accessible or integrated.** External sources of data that could enrich the value of data locked up in the internal silos were being discovered but a vision and method for acquiring and integrating with internal sources was not completely understood.
- Strategic direction to move more data and processing to cost effective cloud solutions were in conflict with privacy and security policies regarding regulated data movement outside of the environment
- **The lack of an analytics database, a holistic view of across sales activities, sophisticated models and datasets** hindered the ability to target customers, sales prospecting, and accelerating underwriting

How <VENDOR> Helped

- The <VENDOR> team worked closely with our client team to conduct extensive stakeholder interviews and workshops for KPIs, learning what the business units were trying to achieve, and how to connect the dots with analytics for more informed business decisions backed by empirics
- <VENDOR> engineered Proof of Concept solutions that were prioritized based on complexity, diversity, data richness and quality, in phases of increasing momentum, difficulty, and business value
- In partnership with business stakeholders, **<VENDOR> discovered, sourced, curated and integrated highly varied internal and external data**
- In partnership with technical stakeholders, **<VENDOR> architected a multi tenancy Data Lake which offered regulated data security compliance and role based access** to data assets that could be shared across business units in accordance with governance policies
- **The Data lake was augmented with Kariba self-service** which allowed for business unit self service to facilitate analytics and insight hypotheses to be rapidly discovered, tested and operationalized

High Performance Delivered

- **Visualizations that improved prospecting** by better targeting of companies for financial advisors, and better profiling/targeting of financial advisors for wholesalers. More inputs and improved capacity for testing yielded higher confidence in prospect targets and more precise messaging activities.
- **Improved sales management information** for wholesaler business planning, and territory management as well as Partner and Rep management for advisor segmentation and measuring the effectiveness of offers.
- **New ability to profile participant needs and identify likely candidates for bringing in additional assets.** Incorporating results of new post-mortem analysis ability
- A **robust Operating Model** that's flexible but detailed which institutionalized Big Data and Data Management as a Shared Service in alignment with Risk Management, Security and Privacy, and Compliance policies.

EDW MIGRATION TO THE CLOUD CASE STUDY

LEADING MANUFACTURING FINANCIAL COMPANY

Challenges

- Financial and leasing division of a **leading manufacturer** was experience performance and scalability issues with Exadata
- BI report and Data Scientists were **being restricted due to concurrency and work loads issues**, in many cases scheduling work for the next day
- Client had to determine the best approach and effort to migrate Data Stage jobs and BOBJ reports
- Client wanted a plan to migrate, if the PoC is successful, before migration of US to their Global ERP system

How <VENDOR> Helped

Analyzed their **entire data warehouse DDL & DML** (views, materialized views and stored procedures), **determining Snowflake conversion options**

- **Build a complexity and conversion** estimator for over eighteen hundred (1800) Data Stage job
- Offered a multiple release plan to alleviate initial user issues using replication and then migrate the **rest of the Data Stage jobs**, considering new ETL tools also
- **Build a ten year cost model for Snowflake and a multi-release roadmap**

Technologies

- AWS / Snowflake
- Exadata / Data Stage

High Performance Delivered

- **66% Improve:** Architecture will significantly improve ETL processing time
- **500 DML/DDL:** Analyzed 500+ DML and DDL to determine conversion risk and effort
- **1800 DS Jobs:** Built complexity model and cost of both rewrite and lift/shift with Data Stage or new ETL tool
- **10 Years:** Ten year Snowflake sizing and cost model with global delivery and 24/7 active warehouse
- **2x Return:** Expected return from conversion to Snowflake and retirement of Exadata platform

EDW MIGRATION TO THE CLOUD CASE STUDY

US PHARMACEUTICAL COMPANY

Challenges

- Global pharmaceutical company, worth around US$11 billion. It has significant presence in North America, Europe and Asia Pacific, with a focus on therapeutic in oncology, urology, infectious diseases and immunology. The company has a high growth trajectory and promising revenue earnings potential. However, the current sales operations and field support systems are not conducive to the changing business conditions.
- The company's **on-premise data warehouse was IBM's Netezza** for which support is expected to end in June 2019. A daunting task facing the business was how to integrate data from across multiple sources. The internal stakeholders—for instance, field staff, R&D and compliance teams—required several approvals prior to running reports which impeded speed to market of services and new product development. To achieve greater flexibility, scalability, integration, cost reduction and ease of management, **the company decided to migrate the existing data warehouse, ETL jobs and other BI applications to the cloud.**

How <VENDOR> Helped

The solution was devised for highly critical data related to sales ops like incentive compensation, prescription (Nrx/TRx) data, alignment data etc.

To accomplish the task at hand, <VENDOR> advised the client to migrate its current data warehouse to Amazon Redshift, and our data professionals created the following roadmap for migration:

• Enterprise data management service (EDMS) to migrate to AWS Platform.

• Two phased approach to migration:

- First, migration of the data warehouse with its 2.5 TB of data and 400 to 500 interfaces to the cloud.
- Second, movement of applications and ETL jobs to the cloud.

To ensure superior performance and prevent compatibility mismatch during migration, the <VENDOR> team proposed using its propriety Smart Data Mover cloud tool.

High Performance Delivered

Upon successful migration of the enterprise data warehouse to the cloud, the client realized:

- Centralized and highly integrated data, revealing one version of truth.
- Five times faster access to data insights driven by advanced analytics and self-service BI tools.
- Reduction in cost of data management and the total cost of ownership by approximately 40 percent.
- Collaboration across the entire ecosystem which is expected to increase efficiency by 25 percent.
- Speed to market which will lead to revenue growth by approximately 20 percent.