Cognizant

Cognizant Adaptive Data Foundation™

Competing With Digital Native Businesses

Digital native business enterprises were founded in the cloud. They were designed and developed to capture and analyze never-ending streams of data that drive their business decisions. And every aspect of their organization is connected. There are no silos.

UNLOCK THE BUSINESS VALUE IN YOUR UNIQUE DATA ASSETS

But what if your enterprise isn't completely digital and has data siloes? How will it compete with the speed, agility and always-available intelligence of a digital native? Traditional companies already have the insights they need for success—hidden in massive amounts of data acquired over years of serving customers as well as that coming from new digital streams.

What's needed is a clear, structured way to transform how organizations source, interpret and consume their ever-growing volumes and varieties of data. Cognizant Adaptive Data Foundation™ is a reference model for creating a cloud-first, AI-driven data ecosystem that enables organizations to generate maximum business value from their unique data assets.

Drive Deep Transformation by Modernizing Data Management

CREATING BUSINESS INTELLIGENCE AT SCALE

Data fuels tremendous competitive opportunities—but only when organizations can derive meaning and insight from it to anticipate and act on market shifts before their competitors do.

That requires real time, 360-degree views of customer behavior, analyzing product and service use to enhance product management decisions and innovation, and capturing insights from devices and processes to simplify complex business operations.

Achieving these goals requires flexible data structures and a streamlined data architecture that quickly turns vast quantities of data into insightful, actionable intelligence. It takes a data ecosystem comprised of processes and technologies that can analyze structured and unstructured data from a multitude of sources and supply meaning to users across, and even outside, the organization. One that delivers information quickly, from simple queries to detailed analytical reports in real time—without missing a beat.

Figure 1. Cognizant Adaptive Data Foundation reference model

Cognizant Adaptive Data Foundation provides organizations with a reference model for developing the new data and analytics foundations required for the digitally savvy consumer world. Cognizant Adaptive Data Foundation identifies the three core elements of a modern data ecosystem as well as the capabilities, processes and technologies that support those elements. Together, these help clients take a structured approach to evaluating and reshaping their data landscapes to provide optimal support for their business transformation.

We deliver the vision with cloud capabilities, pre-engineered platform components, tools and accelerators. These include our Intelligent Data Works, a comprehensive set of technology agnostic accelerators, featuring AI and machine learning-powered workbenches that automate various stages in the data lifecycle, such as data modeling, data integration, testing and DevOps.

With a data ecosystem based on Cognizant Adaptive Data Foundation, organizations can:

• Generate higher returns with more effective monetization of data and by unlocking value in legacy data stores.

• Optimize costs through lower capital expenses and contain data-warehouse costs by transitioning to cloud and by rationalizing and simplifying the data landscape.

• Accelerate time to market with faster insight delivery through AI-enabled data engineering.

Build the data ecosystem organizations require to win in the digital economy with Cognizant Adaptive Data Foundation.

WHAT WE OFFER YOU

FUTURE-PROOF YOUR DATA ECOSYSTEM BY DRIVING BUSINESS TRANSFORMATION

Data ecosystems built on the principles of the Cognizant Adaptive Data Foundation quickly synthesize more and deeper insights based on wider data sources so that organizations are equipped to delight customers with highly personalized, innovative experiences that generate new growth and revenues.

Cognizant Adaptive Data Foundation defines three fundamental elements of the modern data ecosystem: a responsive data architecture, intelligent data management, and delivery at scale. We deliver these through BigDecisions, our Cognizant prebuilt data platform "Buy Solution," or develop a custom "Build Solution" ecosystem using Intelligent Data Works or some combination.

Our Adaptive Data Foundation reference model lays out key guiding principles and enables the intelligence necessary for establishing a best-in-class data and analytics ecosystem.
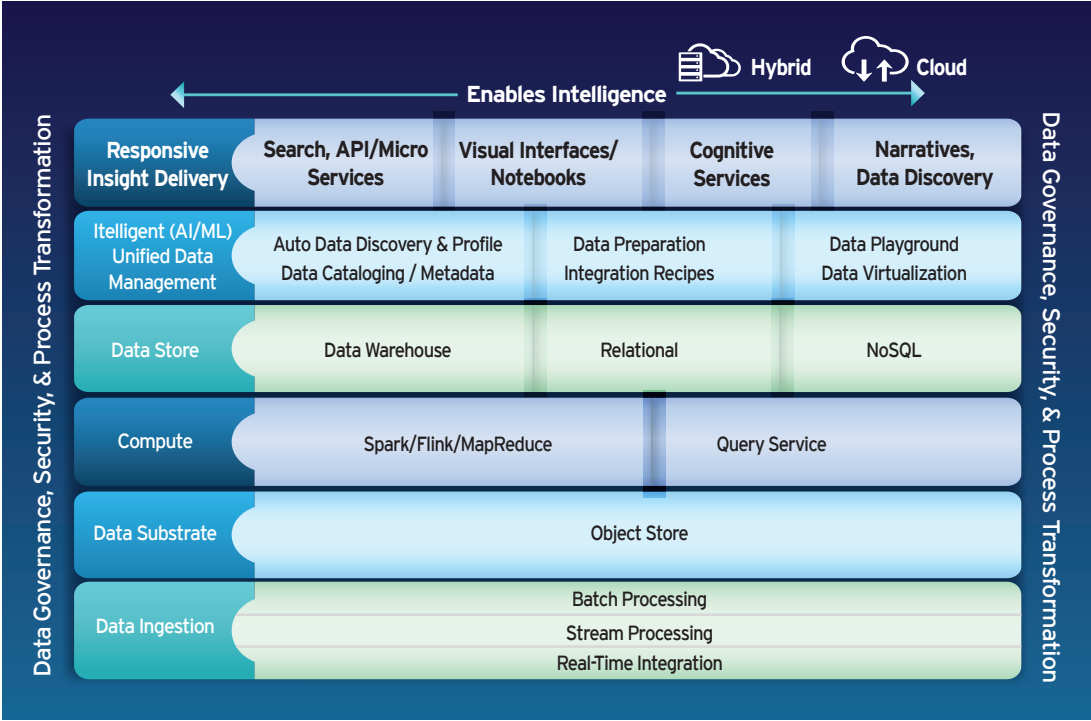

Figure 2. Cognizant Adaptive Data Foundation fundamental building blocks

RESPONSIVE DATA ARCHITECTURE

Responsive data ecosystems must deliver AI and analytics-ready data in different grains, schemas and temporal values to meet diverse and changing enterprise needs. The responsive data architecture defined by Cognizant Adaptive Data Foundation provides options to help organizations simplify, augment and transform their data landscapes to deliver whatever insights and intelligence the business requires. To help engineer an appropriate architecture for an enterprise, our solution:

• Supplies a business value analysis.

• Assists with developing a data strategy.

• Provides a short- and long-term technology roadmap.

• Furnishes target and/or reference cloud-enabled data architecture recommendations.

• Develops smart and open data access, including a universal semantic layer governed by the business that masks underlying technical complexity.

• Determines data governance and security specifications.

AI-DRIVEN INTELLIGENT DATA MANAGEMENT

Our AI and machine learning capabilities make data management autonomous and increasingly intelligent. Tedious tasks, such as reconciling entries in multiple data sources, can be done via automation. Intelligent data management enables frictionless data engineering, so an organization can more rapidly tap its data stores to create and deliver meaning and insights at scale.

Our intelligent data management capabilities include:

• Rapid data integration and preparation

• Self-healing data integration and data quality

• Deep data mastering

• Universal metadata

• Governed self-service

• Unified security

• Scale with a hybrid architecture

• Data or platform migration and/or re-engineering

• Multi-model databases replacing heterogeneous databases

DELIVERY AT SCALE

Delivering at scale requires delivery mechanisms to swiftly adapt to changing business needs. Our tools, including our Intelligent Data Works modules and our digital engineering capabilities, enable us to rapidly develop and test features and capabilities.

Our capabilities here include:

- Autonomous data integration, CI/CD testing and automated metadata discovery and self service.

- Agile, DevOps and DataOps framework that automates, optimizes and simplifies processes.

- Providing "experiments as a service" and assisting data scientists to develop minimum viable products (MVP).

- Establishing multimodal data delivery for services like conversational AI, recognition services and cognitive services.

- Enabling transformation of organizational culture as well as processes.

- DevOps and DataOps.

PHARMACEUTICALS CUSTOMER STORY

A Global Pharmaceuticals Company Cuts Costs, Improves Business Agility

We helped a pharmaceuticals giant save millions of dollars by migrating their legacy mainframe-hosted system to a globally accessible data-driven cloud solution. Our client's legacy data structure cost nearly $4 million annually to operate, yet the company could not get fast answers to business queries. An internal plan to migrate data to the cloud was left incomplete and unstaffed after four years.

With our proven methodology, accelerators and tools, our team successfully and securely migrated more than 150 terabytes of historical data onto Cognizant's Adaptive Data Foundation. Now the company can source, transform and consume data through the cloud and use analytics and AI tools easily to generate business insights and intelligence. Our comprehensive data management solution has enabled this client to:

OUTCOMES

- Reduce external mainframe data-hosting costs by 95%.
- Save $10 million over three years by migrating to the cloud.
- Improve data access and retrieval speeds by 50%.
- Reduce dependence on IT to create custom reports through improved self-service features.
- Enhance its regulatory compliance across the world.

Automation and Intelligence Tools That Drive Faster Business Outcomes

Our clients gain more business value sooner from their data ecosystems with our unique set of tools designed to automate manual tasks and make data accessible when and where it's needed. Our offerings include:
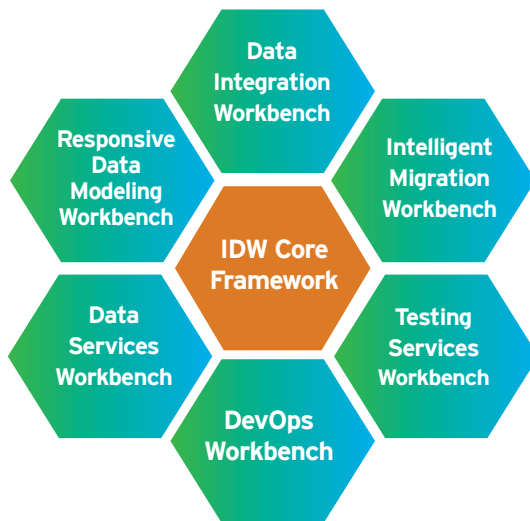

Figure 3. Cognizant Adaptive Data Foundation—Intelligent Data Works

INTELLIGENT DATA WORKS

This unique set of AI and machine learning accelerators builds extensive automation into common, repetitive tasks across the data life cycle, enabling rapid builds of data platforms and capabilities. We may apply the entire set of Intelligent Data Works tools or just those applicable to an organization's specific requirements.

The Intelligent Data Works modules include:

- **Responsive Data Modeling Workbench (RDW).** Automatically generates data models by leveraging AI and machine learning, performs impact analyses and self corrects the mapping to load data into the targets.

- **Data Integration Workbench (DIW).** Accelerates end-to-end life cycle of data integration projects, enabling faster time to market, reduced cost of implementation and improved productivity.

- **Intelligent Migration Workbench (IMW).** Speeds technology migration projects with end-to-end solutions, including downstream and upstream data integration with applications or databases along with the applications that are running on the existing technology.

- **Testing Services Workbench (TSW).** Manages ETL/big data automation QA leveraging the latest big data technologies.

- **DevOps Workbench (DOW).** Provides DevOps capabilities in the context of data management projects.

- **Data Services Workbench (DSW).** Automates the delivery of data to meet the needs of downstream applications, extracts to external systems and end-user reports.

DATAIQ FRAMEWORK

DataIQ refers to the maturity of business data intelligence. The higher the DataIQ score, the more the data enables the organization to drive the right business decisions.

Our DataIQ analysis identifies the existing—or missing—data sets that are critical to achieving business objectives. The tool helps us score and value data assets' relevance and intelligence, enabling us to focus our data engineering efforts appropriately to deliver desired business outcomes.

As a client's DataIQ increases, so does the organization's ability to perform descriptive, diagnostic, predictive and prescriptive analysis by identifying relevant information, reducing noise and redundancy and understanding the scale of complexity in the dataset.

REFERENCE MODEL TOOLS

We also power adoption of the Cognizant Adaptive Data Foundation with the many tools we developed and use for our own data management requirements. These include:

- **BigDecisions®:** An E2E system of intelligence platform covering information management, analytics and decision sciences.

- **OODLE:** Out-of-the-box data lake foundation for the enterprise on AWS and Azure platforms.
- **BRAVO:** One-stop-shop solution for all big data analytics quality assurance needs.
- **BIGFrame:** Facilitates advanced analytics through automated lightning-fast modern-ization of legacy data warehouses (EDW/ Mainframe Systems).
- **OneDevOps:** Fast track DevOps adoption across different software lifecycle tasks.

KEY DECISIONS FOR BUSINESSES

Cognizant works with organizations to help them determine the best roadmap toward developing an ecosystem based on the core elements of Cognizant Adaptive Data Foundation. We evaluate the current data landscape, helping clients decide when and whether to bring legacy, siloed systems into the enterprise architecture or replace them by building or buying new cloud-native applications. We help ensure clients create the right business cases and investment cadence to deliver the required business outcomes.
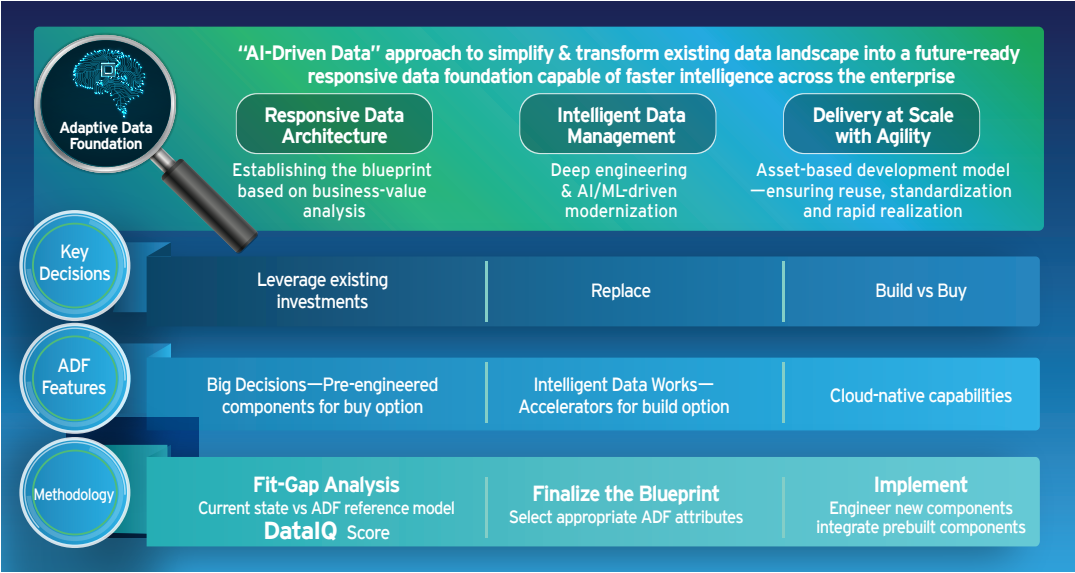

Figure 4. Cognizant Adaptive Data Foundation—Execution Methodology

THE COGNIZANT ADVANTAGE

We bring extensive data-management-specific automation, AI and machine learning expertise to clients. Cognizant also has deep data management expertise, evident in our portfolio of in-house developed tools and solutions, such as Intelligent Data Works. We have strong partnerships with industry-leading data-management cloud providers as well as data integration, advanced analytics and business intelligence solution providers. Cognizant Adaptive Data Foundation has been ratified, endorsed and embedded by our strategic partners, including AWS, Azure, GCP, Informatica and Talend. Our comprehensive skills and resources enable us to architect a feature-rich data ecosystem that aligns with your specific business objectives.

LET'S GET STARTED

Get full value from your organization's data by driving insights and transformation throughout the business with Cognizant Adaptive Data Foundation. To learn more about how we will enable your organization to be intelligent at scale, visit us at https://www.cognizant.com/cognizant-digital-business/applied-ai-analytics.

ABOUT COGNIZANT

Cognizant (Nasdaq-100: CTSH) is one of the world's leading professional services companies, transforming clients' business, operating and technology models for the digital era. Our unique industry-based, consultative approach helps clients envision, build and run more innovative and efficient businesses. Headquartered in the U.S., Cognizant is ranked 195 on the Fortune 500 and is consistently listed among the most admired companies in the world. Learn how Cognizant helps clients lead with digital at www.cognizant.com or follow us @Cognizant.

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