Cognizant

Offering Overview

Data Modernization Method

Empowering data to be instrumental in the modern enterprise

Modern enterprises require modern decisioning. These data-driven businesses are engineered to capture and analyze never-ending streams of data. This allows them to empower intelligence so they can anticipate market changes, quickly adapt operations and forge alternate pathways to deliver products and services to their clients. They do this from a modern data and analytics infrastructure.

Unleash data to empower smarter decisions

What if your enterprise isn't completely digital and your data is siloed? How will it compete with the speed, agility and data scale of companies that have already invested in a modern data platform?

Most 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 which is coming from new digital streams. The problem is getting to all of it. 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's Data Modernization Method is the fastest way to architect a modern data backbone while operating within a framework of ethical data governance and privacy compliance. It consists of products, accelerators, frameworks as well as value-added services to construct a cloud-first, rapidly accessible and compliant data ecosystem that enables business leaders to be instrumental in the way they face changes in their environment from their unique data assets.

Transform data into competitive advantage
And deliver near-term cost-savings

Capital, while always a precious resource, is even more scarce today. Legacy infrastructure costs can be 55% higher that cloud data costs.[1] They have poorer performance and limit the organization's access to data. By moving data from on-premises infrastructure to cloud environments, organizations are able to reduce their data center, software licensing and appliance/warehouse costs by up to 40%.[2] Moving to a cloud-based environment, enables organizations to benefit from improved performance, and integrate structured and unstructured data in a democratic environment to empower real-time intelligent decision making.

When data is available in an agile and scalable architecture, it can fuel tremendous competitive opportunities, but only when organizations can derive meaning and insight from it to anticipate and act on market shifts in real time. With up-to-the-minute 360-degree views of customer behavior and analytics on product and service usage, product managers and marketers can make better-informed decisions. Captured insights from devices and processes can also be used to simplify and streamline complex business operations.

Data modernization enables organizations to seamlessly scale to process enormous volumes of every data type. This allows them to pinpoint bottlenecks in supply chains and helps improve product assortment, pricing, forecasting and marketing channels, driving costs down and revenues up. These new business models monetize data – generating direct revenues from data sets, insights and analytics-based services.

An innovative, structured approach
Laying the groundwork for digital transformation

We start by making data complete and clean to empower reliable intelligence that drives optimal decision-making. Behind the scenes, this includes a foundation for intelligent, secure and cost-efficient autonomous data operations. This architecture supports both legacy migration and the addition of new software that delivers the features and functionality our clients need to become more digitally native.

Our data modernization method provides organizations with a reference model for developing the new data and analytics foundations required for a chaotic and sometimes unpredictable business world. It identifies the core elements of a modern data ecosystem as well as the capabilities, processes and technologies that support those elements. We embed privacy and security into data modernization initiatives by design and default. Together, these help clients take a structured approach to evaluating and reshaping their data landscapes to provide optimal support for their business transformation while reducing the risk of non-compliance with data privacy regulations.

Cognizant delivers this vision with cloud capabilities and pre-engineered platform components, tools and accelerators. Our Intelligent Data Works includes a comprehensive set of technology-agnostic accelerators, featuring AI and machine learning-powered studios that automate various stages in the data lifecycle, such as data modeling, data integration, testing, DevOps and DataOps.

A data ecosystem based on Data Modernization Method allows organizations to[3]:

❙ Generate higher returns with more effective monetization of data and by unlocking value in legacy data stores and integrating it with real-time data from social media, IoT and more.

❙ Reduce total cost of data by 40%. Lower capital expenses and contain data-warehouse costs by transitioning to the cloud and by rationalizing and simplifying the data landscape.

❙ Accelerate time to market by 30-40%, with faster insight delivery through AI-enabled data engineering.

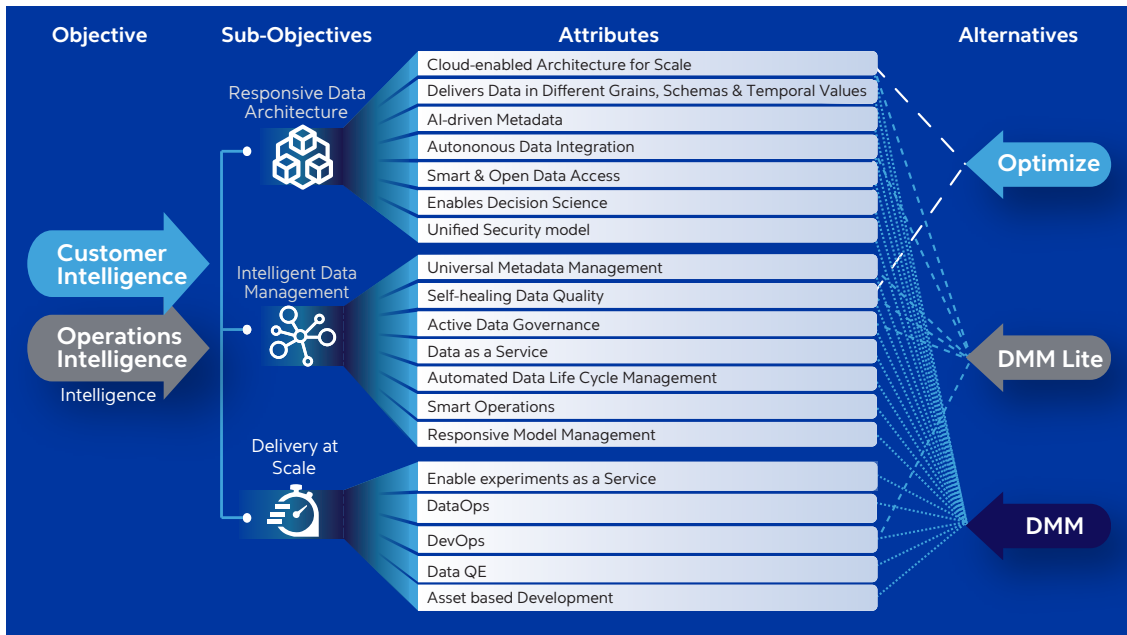❙ Start realizing value within three-six months.

Figure 1. Cognizant AI Data Modernization Method, a reference model

What we offer

A future-proof data ecosystem to drive business transformation

Data ecosystems built on the principles of our Data Modernization Method drive intelligence that quickly synthesizes more and deeper insights based on wider data sources so that organizations are equipped to better engage customers with highly personalized, innovative experiences that generate new growth and revenues.

A method that defines the three fundamental elements of the modern data ecosystem: a **responsive data architecture, intelligent data management and delivery at scale**. Cognizant can also deliver these elements through a prebuilt ready-to-use data modernization platform.

A reference model lays out the key guiding principles that enable the intelligence necessary for establishing a best-in-class data and analytics ecosystem.

An end-to-end sustainable global privacy program in which confidentiality and security is embedded into data modernization initiatives by design and default.
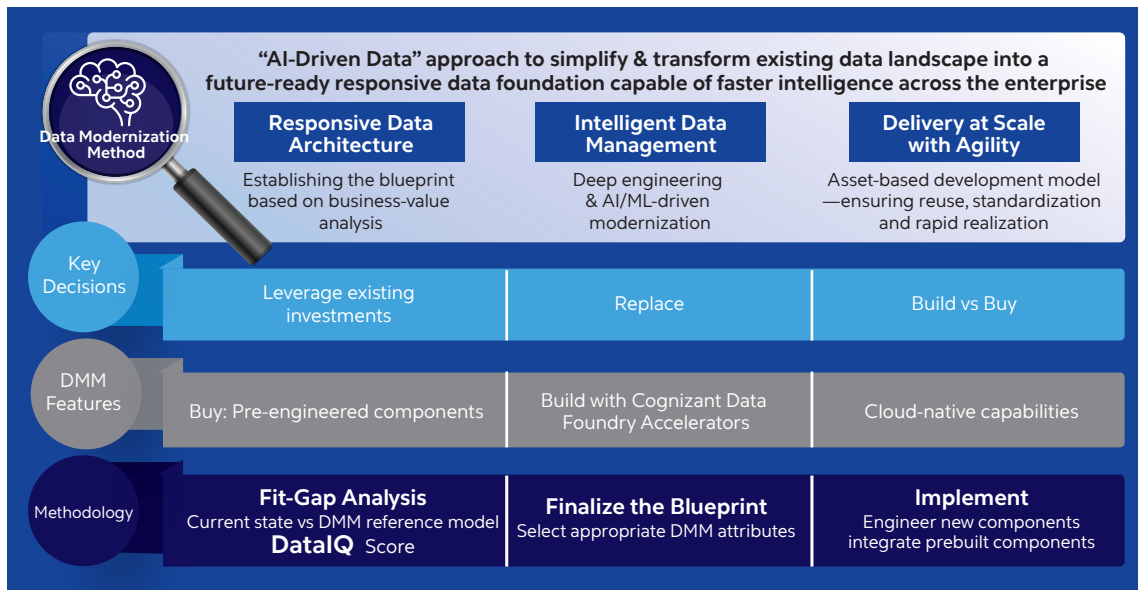

Figure 2. Cognizant AI Data Modernization—Execution Methodology

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. These are built to allow for rapid access to all types of data. The responsive data architecture defined by the Cognizant Data Modernization Method 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, this 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, data privacy and security specifications
- Creates a data foundation for AI

AI-driven intelligent data management

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.

Cognizant's intelligent data management capabilities include:

- Data preparation and integration
- Deep data mastering and universal metadata
- Governed self-service and unified security
- Scale with hybrid architecture
- Data and platform migration, reengineering
- Adaptive data models
- Multimodal database replacing heterogeneous databases

Delivery at scale

Delivering at scale requires delivery mechanisms to swiftly adapt to changing business needs combining data and AI. Tools, including our data foundry modules and our digital engineering capabilities, enable us to rapidly develop and test features and capabilities.

These capabilities include:

▌ Autonomous data integration, continuous integration/continuous deliver (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.

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

▌ Enabling transformation of organizational culture as well as processes.

A reference model lays out the key guiding principles that enable the intelligence necessary for establishing a best-in-class data and analytics ecosystem.

> Bret Greenstein, SVP and Global Head of Data & AI

Intelligent Data Works
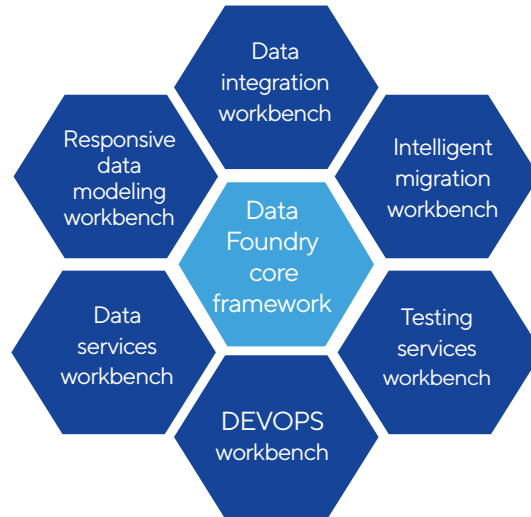
A flexible, capable data foundry

Figure 3. Cognizant AI Data Modernization Method—intelligent data foundry

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. These automation and intelligence tools drive business innovation and outcomes to create an AI data pipeline.

Cognizant's Intelligent Data Works is a unique set of AI and machine learning accelerators to build extensive automation into common, repetitive tasks across the data life cycle, enabling rapid builds of data platforms and capabilities. All or any combination of these data foundry tools can be applied to meet an organization's specific requirements.

Intelligent Data Works includes:

- **Responsive Data Modeling Studio:** 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 Studio:** Accelerates the end-to-end life cycle of data integration projects, enabling faster time to market, reduced cost of implementation and improved productivity.

- **Intelligent Migration Studio:** 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 Studio:** Manages extract, transform, load (ETL) big data automation – QA that leverages the latest big data technologies.

- **DevOps Studio:** Provides DevOps capabilities in the context of data management projects.
- **DataOps Studio:** Facilitates the full automated of the continuous integration and continuous delivery pipeline process
- **Data Services Studio:** Automates the delivery of data to meet the needs of downstream applications and extracts it to external systems and as well as 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.

DataIQ analysis identifies the existing—or missing—data sets that are critical to achieving business objectives. This tool helps us score and value data asset relevance and intelligence, enabling teams to focus data engineering efforts to deliver the desired business outcomes.

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

Data modernization products

Designed to support the rapid acceleration of a modern architecture, we offer the **Data Modernization Platform** powered by Cognizant BigDecisions®. It is comprised of three modules:

Enterprise Data Migrator: Efficiently migrates data to the cloud so organizations can eliminate the costs associated with legacy systems, freeing both capital and human resources.

Enterprise Data Lakes: Simplify how data is structured and accessed without risking security or privacy. Promote flexibility in implementing proprietary and third-party analytics tools and reduce the burden of unneeded legacy systems and software.

Enterprise Analytics: Experiment with analytics. Accumulate accurate data sets that can be used to deploy AI.

Key decisions for businesses

Cognizant works with organizations to help them determine the best roadmap toward developing a data foundation for AI based on the core elements of its Data Modernization Method reference model. This model, which was created by studying how digitally-native organizations build their data platforms, resulted in the identification of 19 key attributes required for an optimal data platform.

We constantly evaluate the current data landscape to help 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 create the right business cases and investment cadence to achieve their specific business goals; including the ability to take-out costs and facilitate the democratization of data in order to compete using data as an asset.

The Cognizant advantage

Data is our heritage. Cognizant has a 25-year proven history as a data-centric company and is a recognized leader in providing complex IT, data management and digital transformation services. Its thousands of expert associates work with customers to realize their data modernization vision—bringing their extensive data-management-specific automation, AI and machine learning expertise to bring out customers' objectives to life.

Cognizant can move faster than most of its competitors because we have invested in the tools, methodologies and partnerships that make data work. Cognizant has deep data management expertise, evident in its portfolio of in-house developed tools and accelerators, as well as a robust and long-term cloud and data services provider system, including AWS, Azure, GCP, Informatica and Talend. These comprehensive skills and resources enable us to architect a feature-rich data ecosystem that aligns with our clients' specific business objectives.

Cognizant has the experience, expertise and is widely acknowledged as the company that can scale teams and resources quickly to meet project demands. Get the full value from your organization's data by driving insights and transformation. Learn more by visiting cognizant.com/ai/data-modernization.

Endnotes

1   https://blogs.gartner.com/marco-meinardi/2018/11/30/public-cloud-cheaper-than-running-your-data-center/

2   Based on actual client outcomes. Individual results will vary.

3   Ibid.

About Cognizant Artificial Intelligence Practice

As part of Cognizant Digital Business, Cognizant's Artificial Intelligence Practice provides advanced data collection and management expertise, as well as artificial intelligence and analytics capabilities that help clients create highly-personalized digital experiences, products and services at every touchpoint of the customer journey. Our AI solutions glean insights from data to inform decision-making, improve operations efficiencies and reduce costs. We apply Evolutionary AI, Conversational AI and decision support solutions built on machine learning, deep learning and advanced analytics techniques to help our clients optimize their business/IT strategy, identify new growth areas and outperform the competition. To learn more, visit us at cognizant.com/ai.

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 194 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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