Cognizant

Offering Overview

AI Data Modernization Method

A Digitally Transformative Data Foundation

Digital native business enterprises were founded in the cloud. They were designed and developed to capture and analyze never-ending streams of data that enable real-time intelligence and hyperpersonalization. And their data foundation provides adaptability and agility for business innovation.

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 data scale 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's AI Data Modernization is the fastest way to achieve an AI-driven data foundation with a proven method and platform, to source all the data that matters to their business and deliver enterprise-wide intelligence.

Our reference model is a foundation 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 ecosystem

Creating 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, as well as capturing insights from devices and processes to simplify complex business operations.

Businesses need the accurate, current predictions and prescriptions of the Cognizant AI Data Modernization Method to run their operations more smoothly and effectively. They need an adaptable and agile architecture that supports new business models and experimentation and reduced time-to-market. They also need to be able to seamlessly scale to handle and process enormous volumes of every type of data. And, most importantly, to provide a consistent customer journey with personalized experiences that drive business growth and loyalty.

We start by making data complete and clean to generate reliable insights to drive 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.

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Our data modernization method provides organizations with a reference model for developing the new data and analytics foundations required for the digitally savvy consumer world. It 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 this vision with cloud capabilities, pre-engineered platform components, tools and accelerators. Our data foundry includes 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.
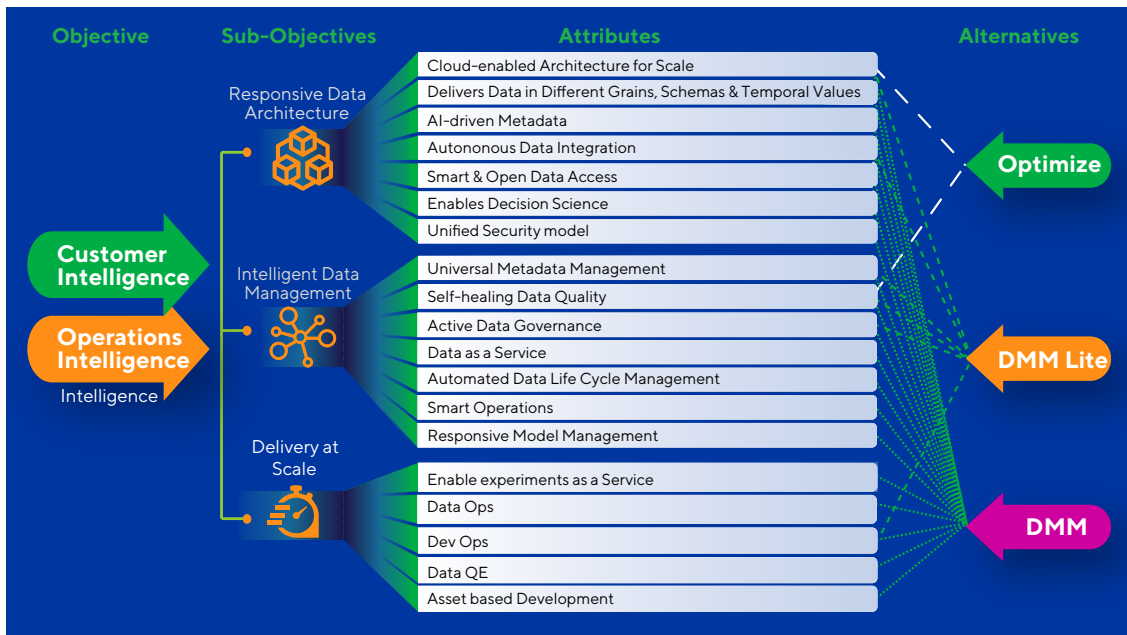

Figure 1. Cognizant AI Data Modernization Method, a reference model

With a data ecosystem based on our Cognizant AI Data Modernization Method, organizations can:

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

❚ 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 with a minimum viable solution in 6 months

What we offer you

Future-proof your data ecosystem by driving business transformation

Data ecosystems built on the principles of our data modernization method quickly synthesize 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.

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

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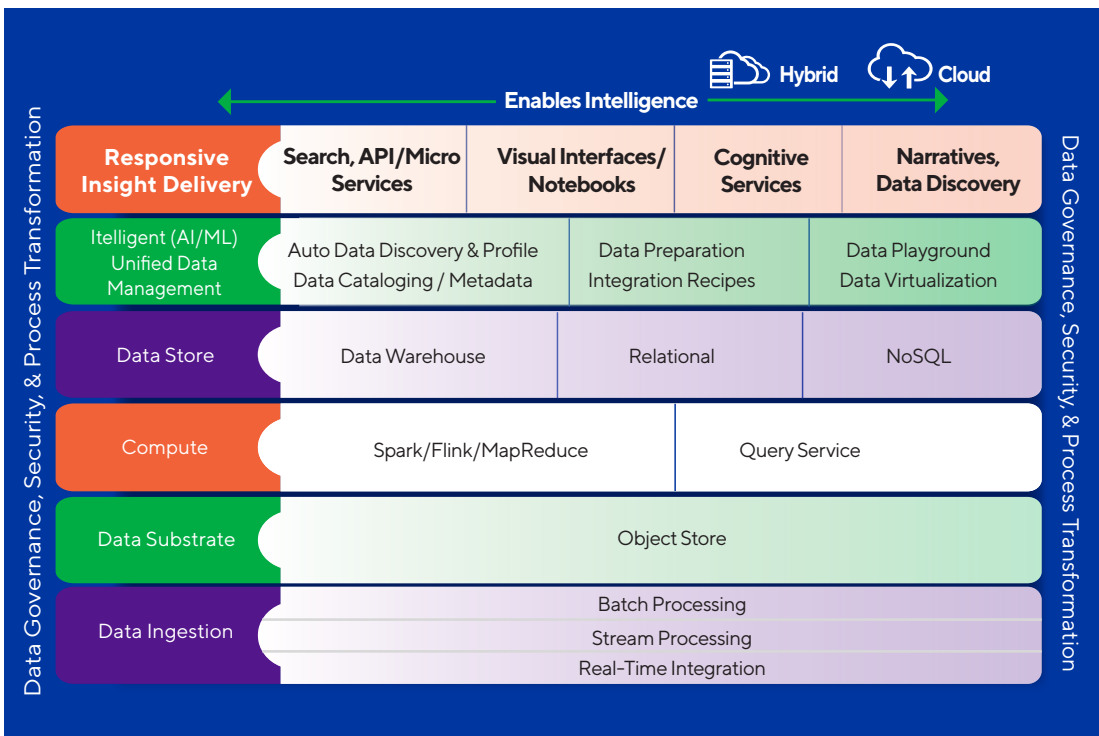

Figure 2. Cognizant AI Data Modernization Method fundamental building blocks

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 our 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, 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:

- 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
- Multimodal database replacing heterogeneous databases

Delivery at scale

Delivering at scale requires delivery mechanisms to swiftly adapt to changing business needs. Our tools, including our data foundry 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
- 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

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. 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 over $3 million annually 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

A flexible, capable data foundry

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. These automation and intelligence tools drive business innovation and outcomes.
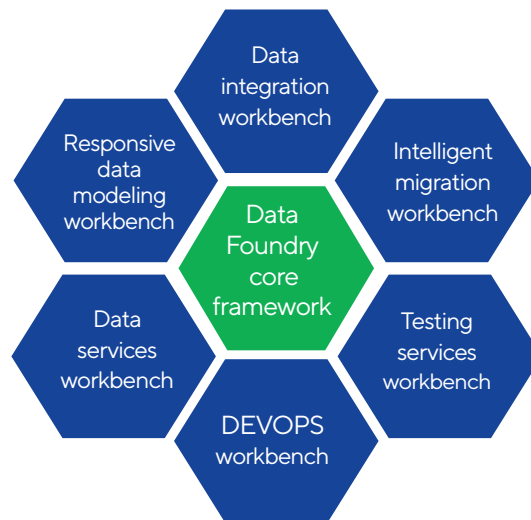

Figure 3. Cognizant AI Data Modernization Method—intelligent data foundry

Cognizant's unique set of AI and machine learning accelerators 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.

Data foundry modules:

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

I **Data Integration Workbench:** 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 Workbench:** 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:** Manages ETL/big data automation—QA leveraging the latest big data technologies.
- **DevOps Workbench:** Provides DevOps capabilities in the context of data management projects.
- **Data Services Workbench:** Automates the delivery of data to meet the needs of downstream applications and extracts it 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 asset relevance and intelligence, enabling us to focus our data engineering efforts appropriately to deliver the 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.

Data modernization tools

We power data modernization with the many tools we developed and use for our own data management requirements. These include:

- **Data Modernization Platform:** Transform data into business insights faster, activate a culture of collaborative analytics and make AI mainstream in your organization
- **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
- **Enterprise Data Migrator:** Facilitates advanced analytics through automated lightning-fast modernization 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 its AI Data Modernization Method reference model. 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 that our clients create the right business cases and investment cadence to achieve their specific business goals.
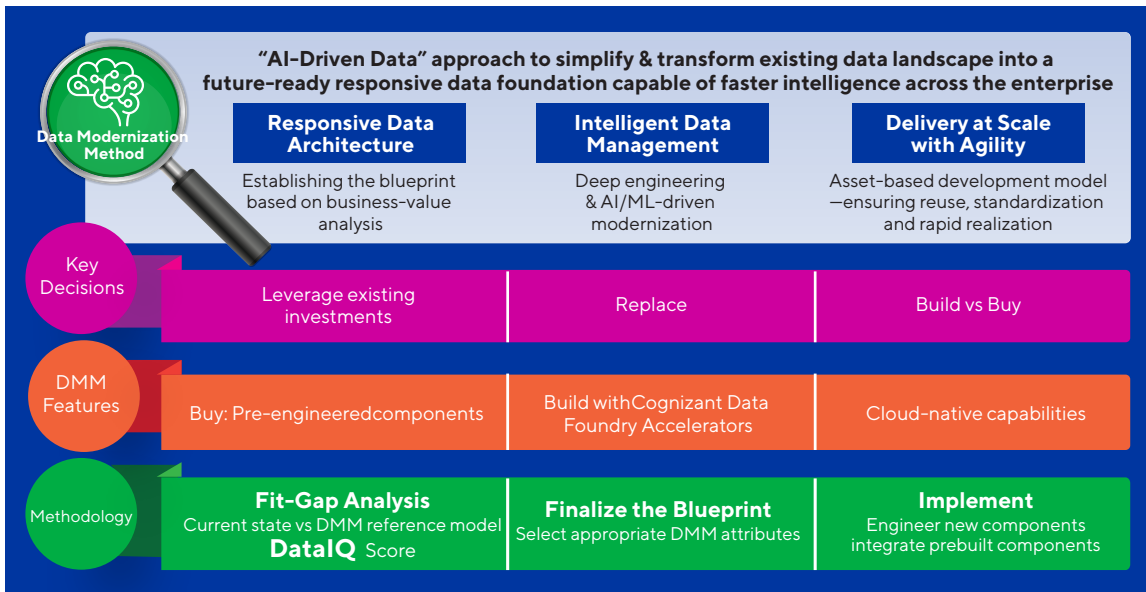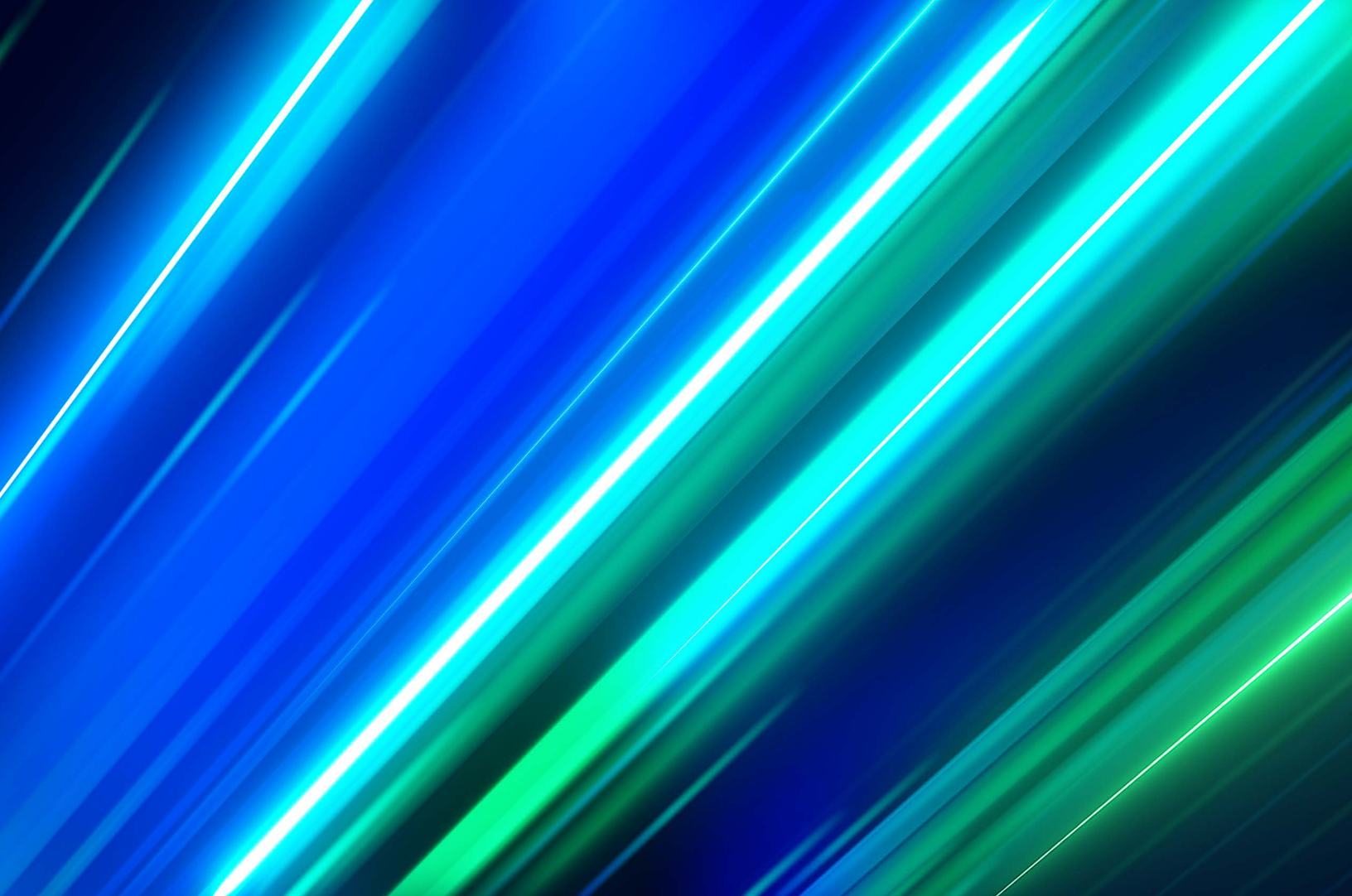

"AI-Driven Data" approach to simplify & transform existing data landscape into a future-ready responsive data foundation capable of faster intelligence across the enterprise

Data Modernization Method

Responsive Data Architecture	Intelligent Data Management	Delivery at Scale with Agility
Establishing the blueprint based on business-value analysis	Deep engineering & AI/ML-driven modernization	Asset-based development model —ensuring reuse, standardization and rapid realization

	Responsive Data Architecture	Intelligent Data Management	Delivery at Scale with Agility
Key Decisions	Leverage existing investments	Replace	Build vs Buy
DMM Features	Buy: Pre-engineeredcomponents	Build withCognizant Data Foundry Accelerators	Cloud-native capabilities
Methodology	**Fit-Gap Analysis** Current state vs DMM reference model **DataIQ** Score	**Finalize the Blueprint** Select appropriate DMM attributes	**Implement** Engineer new components integrate prebuilt components

Figure 4. Cognizant AI Data Modernization —Execution Methodology

The Cognizant advantage

We bring extensive data-management-specific automation, AI and machine learning expertise to our clients. Cognizant also has deep data management expertise, evident in our portfolio of in-house developed tools and solutions, and strong partnerships with industry-leading data-management cloud providers as well as data integration, advanced analytics and business intelligence solution providers.

Our AI Data Modernization Method has been ratified, endorsed and embedded by our strategic partners, including AWS, Azure, GCP, Informatica and Talend. These comprehensive skills and resources enable us to architect a feature-rich data ecosystem that aligns with your specific business objectives.

Get full value from your organization's data by driving insights and transformation. To learn more, visit us at cognizant.com/ai/data-modernization.

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 business-es. Headquartered in the U.S., Cognizant is ranked 193 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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