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Data Modernization: The Foundation for Digital Transformation

How leading organizations transformed their digital core to operate with precision in a fast-moving world.

Digital transformation is essential for business survival in a post-COVID world

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Today's crisis has exposed the cracks in how nearly every company manages data. Organizations have realized the immediate and critical need for a modern data infrastructure — one that manages data to make it highly accessible, useful, compliant and valuable.

With a modern data backbone, organizations benefit from near-term cost savings and powerful analytics that extend personalization and optimize forecasting. As a result, business leaders have re-prioritized digital transformation from optional to vital.

At Cognizant, we're delivering on data's promise by helping our clients to first build a modern digital core — regardless of their starting point. Whether that be ideas and iteration, piloting, data migration, full implementation or expansion of existing systems, we help them achieve their business goals in typically 40% less time than doing it themselves.

The following case studies present a range of real-world examples with quantifiable results from clients that have made the leap to leveraging data as an asset. Through these transformations, they have been able to increase revenues, remove silos across the business, increase service levels and implement a system of governance while at the same time decreasing costs associated with storing, analyzing and disseminating data.

Cognizant's data modernization delivers the precision that drives competitiveness by leveraging our reference model, platforms, tools and methodology. The results? A convenience store chain piloted a self-service carry-out solution, a utility was able to use drone imagery to predict and service remote insulators and a financial institution was able to significantly reduce check fraud and save millions.

Let these case studies inspire you to transform your operations and customer experience by starting with a modern data core.

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Transforming Data Methods and Decision Making

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AI Solution Detects Check Fraud for a Leading Global Bank

The Challenge

A global financial services organization wanted to automate and streamline its fraud detection process. At many large banks, millions of checks are still hand-written each month. While part of this process is truly automatic, including scanning paper checks, large banks still employ hundreds of people to sit every day at computer screens trying to spot signs of fraud in those scans. This process is time-consuming and inaccurate, and banks lose millions annually to counterfeiters.

Our objective was twofold: to spot fraudulent checks in real time at the time of deposit, and to reduce the number of checks requiring manual review. Such a solution would stem the outflow of disbursements on counterfeits, reduce tedious work and lower processing costs.

We helped the financial services organization build a machine-learning solution that teaches itself to identify counterfeit checks, thus reducing fraud risk and lowering costs.

The Solution

We developed an artificial intelligence-driven machine-learning solution to flag potential fraud by analyzing scanned images of handwritten checks. The technology is designed to automatically compare a variety of factors on scans of deposited checks against a growing database of checks previously identified as

fraudulent, and then flag potential counterfeits in near real-time while deposit transactions are in process.

Our Approach

When we tested our model on a historical portfolio of past transactions, it demonstrated 50% savings on fraud losses. It processed up to 20 million checks per day, with end-to-end response times of less than 70 milliseconds and the ability to process up to 1,200 checks per second.

RESULTS

50% savings in check fraud losses was demonstrated.

70 millisecond real-time check confidence score generated.

A $20 million reduction in losses to fraud annually, based on current models is forecast.

Reduced manual effort while keeping initial and ongoing costs low.

▶ **Read the full case study here.**

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Tidying Up the "Digital Shelf" with Centralized Product Information and Images

The Challenge

A global consumer goods business wanted a way to syndicate accurate product information to its 500 e-commerce partners and distributors quickly — and confirm that existing listings were correct and up-to-date. However, product information was scattered across many systems. Attributes such as product titles, features, descriptions, dimensions and package counts were inconsistent across countries. Additionally, the systems could not store product images, documents and videos, which were spread across still more systems.

A lack of a single source of truth for product information was created cascading problems. New product listings had to wait until marketing and brand teams could hunt through multiple systems to find the right information and images. Different descriptions for the same product produced inaccurate sales reports and forecasts. The full auditing process on e-commerce sites for out-of-date information took six to eight months, exposing the company to legal and compliance risks. These challenges would multiply as the company introduced more products in more countries through more channels and in more languages.

The Solution

We built a digital shelf solution that serves as a single source of truth for tens of thousands of

products and hundreds of thousands of images for business segments operating in 40 countries. We worked in two-week sprints to roll it out across North America, Latin America, EMEA and Asia Pacific from 2015 to 2019.

Today, more than 3,500 employees and agencies use the digital shelf solution, which country teams can customize to accommodate their needs. The company now has an easier, more automated way to syndicate product data to retailers and other channels.

Our Approach

We designed and implemented a centralized product information management and digital asset management system that ensures the company's e-commerce sites and distributors are publishing the latest product information and images — increasing sales, strengthening the brand and avoiding fines.

RESULTS

$3 million annual savings in operational expenses.

60% improvement in time to market via digital channels.

68% time saved on creating product listings.

Six months of time saved on auditing images on partner websites.

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AI Speeds Repairs, Cuts Costs for Electric Utility

The Challenge

A U.S. utility needs to monitor the condition of thousands of different components across tens of thousands of square miles of service area, much of it in remote locations. Such monitoring is essential because in order to maintain service levels and prevent system outages, it's crucial to identify and fix failing or damaged components, such as the insulators that connect transmission wires to poles.

While the utility used images taken by drones to identify equipment that needed repair in its far-flung distribution network, it was time-consuming and inefficient to manually examine the photos and open a repair ticket, making it impossible to generate actionable real-time intelligence.

The Solution

The utility now has a fully managed data and analytic platform that enables data scientists to build, train and deploy AI models on-site or in the cloud, greatly reducing the cost and time required for image analysis and performing needed repairs.

To compensate for a lack of properly labeled images, we used image augmentation to create as many as 12 new labeled images from each original by changing lighting or angles or adding new objects to the images. This greatly increased the raw data on which the application could

learn, and thus its accuracy. We also automated critical activities such as data labeling, the building of AI models, training and deployment.

Our Approach

We used our AI Data Modernization Platform to create an AI-driven image analytics application that assesses drone-captured photos in real time to identify problems such as broken or chipped insulators. This self-service solution provides immediate insights to detect issues and an

alerting engine to notify the maintenance team about needed repairs.

The utility's deep-learning library is now hosted on a cluster of computing containers to reduce the cost and effort of implementation and management. An optimal cognitive computer vision model has been employed to provide the highest accuracy and ease of implementation to seamlessly scale and accommodate the alerting pipeline.

RESULTS

60% reduction in the effort required for image scanning.

Faster and less costly repairs through automated identification of problems and triggering of work orders.

Increased service levels, reduced outages and improved the customer experience.

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Data Modernization Cuts Costs, Speeds Data to Pharma Sales Reps

The Challenge

A specialty pharmaceuticals company faced rising costs and delays in gathering, analyzing and transmitting the information its sales representatives needed to plan their physician calls and meet their sales targets. Sales reps struggled with incomplete, conflicting and hard-to-use information, and the company lacked a single, integrated source of marketing and financial data to improve its decision making.

The Solution

Using our AI Data Modernization Platform, we helped the company reduce the time and cost of collecting and normalizing data from 20 internal and external systems. Now, sales reps receive customized advice on a daily basis on their laptop or mobile devices, based on their location and the current state of their accounts. This includes recommendations on which accounts are the most worthwhile to visit, which physicians and administrators to see at each account and which products or promotions they should spend the most time discussing.

These reports also warn of any danger signs, such as stagnating sales of a specific product at an otherwise well-performing customer. For the first time, the company now has a "single source of truth" for all its financial and marketing data, helping sales reps maximize revenue and profits.

Our Approach

In addition to reducing costs and speeding data access, the new platform also provides advanced analytics to each representative on a daily basis and a customized plan of accounts to target the optimal plan for meeting sales goals.

Pre-built analytics and our industry-aligned data model reduced the time required to deploy the platform by one-third, and our change management capabilities ensured rapid adoption, user satisfaction and timely retirement of older platforms.

RESULTS

$450,000 in annual savings for gathering and distributing account data to sales reps.

35% reduction in the time required to produce reports for the sales force.

30% reduction in implementation time through the use of our pre-built analytics and industry-aligned data model.

Maximized revenue and profits with improved, real-time data.

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Healthy Data? That Means Reliable, Defensible and Accessible

The Challenge

Over its 100 years, a global life sciences company has acquired multiple complementary businesses, including major pharmaceutical research companies. The company has accumulated a vast repository of global human health data that it uses to address questions and concerns, respond to legal inquiries and incorporate in ongoing research.

While the organization had critical information on its substantial range of drugs and compounds, the data wasn't readily accessible. Faced with an expensive, legacy mainframe environment that inhibited free and fast access to its own data, the company chose to migrate more than 150 terabytes of data to a new, globally accessible cloud platform, increasing information flexibility and lowering costs.

The Solution

Our AI Data Modernization Method has substantially improved the company's data access times and sharply lowered its costs — $10 million over three years. It has reduced the IT department's reliance on an internal team and an exhaustive process to design and deliver custom reports. It also preserves the company's existing data access and data security protocols, and it uses the same portal as the previously outsourced mainframe hosting provider.

Having ownership of its database allows the company to manage data across the business lifecycle, using a unified security model that ensures active data governance. The new platform helps ensure compliance with global regulations for storing and using health data under the industry-standard rubric of "good practice" quality guidelines and regulations (GxP).

Our Approach

We examined the current state of the company's IT architecture, developed use cases to support

the blueprint for its desired future state, and then designed and managed the successful migration of all its historical data. Our solution, based on Amazon Web Services (AWS), offered the company a global repository.

This cloud-enabled architecture is a modernized, highly responsive data ecosystem that helps the company source, transform and consume data through the cloud, leveraging artificial intelligence and advanced analytical techniques. The model provides the flexible data structure, tools and accelerators needed to generate maximum business value.

RESULTS

95% reduction in external mainframe data-hosting costs.

$3.6 million annual savings through cloud migration.

50% improvement in data access and retrieval speeds

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Retail Customer Data Accelerates Decision-Making

The Challenge

A leading global convenience store chain needed to create a new data architecture and management foundation — modernizing its technology platform to improve access to sales data, better manage its supply chain and implement robust analytics for predictive decision making. They were being prevented from doing so due to aging IT infrastructure and outdated database systems.

Our client sought a scalable, flexible solution that could meet the demands of its diverse, complex system of franchisees. They needed a way to quickly integrate new applications, perform audits, increase and improve ad-hoc reporting capability, apply similar business rules across the organization and reduce overhead. Critically, management wanted to be able to aggregate and analyze store data in near real time, to customize sales at various locations based on specific customer needs.

The Solution

Our team of retail digital experts migrated three years of historical data to a cloud-based infrastructure — moving more than 16 terabytes of data. We then implemented a cloud platform that improves data ingestion from the company's thousands of stores and allows for real-time availability of data, while lowering infrastructure costs and software licensing fees by 40% for on-premise applications.

Combining our newly streamlined AI-ready data model and cloud-based platform infrastructure together meant that the company could implement intelligent analytics to address prevailing business challenges and enable new initiatives.

Our Approach

The new, streamlined AI-based data model gives the company intelligent analytics to address prevailing challenges and support new initiatives, including a project to allow customer carry-out self-service. Their new cloud-based data ecosystem significantly improves query and reporting capability, delivering current and historical intelligence to the business more quickly, taking new KPIs into account. Tracked data includes active-store daily sales, gross profits, merchandise inventory counts, write-offs, invoicing and order data. The company benefits from a more transparent, easily documented audit trail, with streamlined and consistent business rules across the organization.

RESULTS

Zero downtime due to infrastructure upgrades, with no negative impact on the business.

Migrated 16TB to a hybrid cloud platform.

40% reduction in infrastructure and software licensing costs.

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A Modern Platform Unlocks Fast-Food Insights

The Challenge

One of the largest U.S.-based fast-food companies wanted to improve its decision-making, provide more self-service data analysis for franchisees and expand its loyalty offerings. To accomplish these goals, the company needed better insights into franchise performance and improved visibility into its inventory and staffing.

The company knew this meant migrating from its on-premises legacy data warehouse, which couldn't produce needed information in a timely fashion and was costly and burdensome to maintain.

The Solution

Our proposal featured our cloud-based AI-driven platform that enables faster reporting, better data accuracy and lower maintenance costs while increasing flexibility, scalability and customer engagement. It also includes an AI-driven personalized customer experience and marketing intelligence reports.

The restaurant chain now has 4,000 stores in North America that are uploading data to the warehouse in real time. Leveraging data on a cloud-based intelligent platform has enabled the business to gain insights, build customer relationships and improve operations, achieving its overall goals of increasing revenue and reducing costs.

Our Approach

We delivered insights that allow the business to find and resolve real-time operational challenges, track sales of specific menu items to drive insights into customer preferences and manage labor efficiency and inventory.

The solution also provides quick insights into sales, product mix and the performance of promotions and discounts, as well as a single view of data consolidated from multiple locations.

RESULTS

10% reduction in average order time for drive-through customers.

4,000 North American stores access the data warehouse, greatly improving data accuracy.

Significant cost reduction due to the near elimination of software licenses.

Up-to-the-minute sales, product and regional insights and performance metrics.

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LEARN MORE

For over 25 years, Cognizant has been a leader in providing complex IT services, data management, and digital transformation to the Fortune 1000 and many other companies around the world. Our expert associates can modernize your data faster and speed you on the path to realizing value.

To learn more, visit **www.cognizant.com/ai/data-modernization** or email us at **DataModernization@cognizant.com**

**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 Evo-lutionary 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
Digital Business**

Cognizant Digital Business helps our clients imagine and build the Digital Economy. We do this by bringing together human insight, digital strategy, industry knowledge, design, and new technologies to create new experiences and launch new business models. For more information, please visit www.cognizant.com/digital or join the conversation on LinkedIn.

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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