Cognizant®

Case Study: Transportation & Logistics

Elizabeth River Crossings sets benchmark in tolling

An end-to-end digital transformation for Elizabeth River Crossings introduced a new generation, cloud-native Digital Tolling Solution that delivers business modernization, resilience and cost savings.

Elizabeth River Crossings (ERC) finances, operates and maintains the Elizabeth River tunnels, along with 51 lane miles of roadway in the Hampton Roads region of Virginia in the US. Each day, 105,000 motorists use ERC's tunnels, travelling between Norfolk and Portsmouth, Virginia. Driving through at highway speeds, each vehicle is tracked using state of the art electronic tolling technology.

The challenge

As tolling operators transitioned customers to all-electronic tolling, ERC's legacy on-premises technology could not keep pace. The operator needed greater flexibility and agility to capture insights, identify process inefficiencies and bottlenecks, and uncover revenue fluctuations. These limitations affected customer satisfaction, revenue recognition and the ability to roll out new offerings.

At a glance

ERC partnered with Cognizant to create a new generation, cloud-native, serverless, end-to-end Digital Tolling Solution that improves the operation in a number of ways, including:

▌ Reduced operational costs by 40%

▌ 360-degree view of any toll transaction with comprehensive, real-time information

▌ Auto-scaling capabilities based on traffic volumes

▌ Lower cost and time requirements for review of images and manual errors using new OCR license plate review engine

▌ New insights now accessible that help avoid transaction losses

erc elizabeth river crossings

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Long-term service contracts for back-office and data center operations were also an issue because they did not include new offerings or improved customer experiences during the term. This meant ERC's technology was locked in, preventing system or process changes needed to meet new industry demands.

The fixed cost contracts also created a barrier to improving operational performance metrics. For example, ERC could not flex services based on traffic levels, so the company paid the highest peak service rate even during lower usage times.

ERC wanted to address toll transaction losses and the redundancy of operating two data centers within the same region, both of which were located within 100-year flood plains. There were also opportunities to improve license plate recognition, ensure capture of all toll transactions, maximize revenues and deliver customer friendly, accurate invoicing.

Additional challenges brought on by the legacy system included:

■ Inaccuracies in billing transactions and customer data

■ Difficulties integrating back-office systems with external systems

■ Issues maintaining Payment Card Industry (PCI) compliance on payments, particularly during the pandemic with remote work practices

■ Spending extra time and resources on manual business processes and technology workarounds

■ The need to gain clearer views into the full toll transaction flow

The approach

ERC engaged Cognizant for an end-to-end digital transformation to migrate and modernize its data center and back-office operations. A proprietary cloud migration framework and toolset enabled ERC to migrate the existing data center quickly, seamlessly and in the least disruptive manner. The new cloud-native, serverless solution enables ERC to automatically scale, allowing the operator to cut operational costs by 40%.

"Modernizing our legacy systems has been essential, particularly this year," says David C. Sullivan, Chief Executive Officer, ERC. "Moving to a cloud-based solution enabled us to continue operations without interruption through the pandemic and ensured that we can serve our customers much more efficiently now and in the future. We look forward to our continued work with Cognizant and AWS."

The Cognizant Digital Tolling Solution delivers end-to-end real-time visibility that empowers toll operators to eliminate inefficiencies and redundancies and identify what actions should be taken and when. The system uses advanced artificial intelligence (AI), self-service and cognitive capabilities to deliver omnichannel customer service built on a modern, secure microservices architecture.

Business outcomes

The Cognizant solution brings a range of business benefits, including 100% application and infrastructure availability, and cost benefits resulting from the digital transformation:

■ 90% of infrastructure refresh cost and process eliminated

■ 80% reduction in data center leasing and maintenance costs

■ 50% savings on annual software license cost

■ CSC utilization of over 98% in Q1-2020 and 90-95% in Q2 & Q3 despite COVID-19 situation

The new solution also enables ERC to handle accounting matters, such as closing the quarterly books, on time and with accuracy.

Summarizing the implementation, Saurabh Mehta, Business Unit Head of Manufacturing, Logistics, Energy and Utilities at Cognizant says, "The benefits of consolidating disparate systems and providing a single solution via the cloud cannot be understated. Beyond streamlining processes and services, Cognizant's Digital Tolling Solution enables our clients to innovate and improve operational agility, ultimately providing better quality service to their customers."

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– **David C. Sullivan, Chief Executive Officer, ERC**

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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