



Cloud Innovation is Transforming Transit Payments

DIGITAL REPORT 2024



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CLOUD INNOVATION IS TRANSFORMING TRANSIT PAYMENTS



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Metrolinx is pioneering convenient and seamless transit payments, transforming the commuting experience for more than five million Ontarians

The need for robust and efficient public transportation has never been greater. Reliable transit systems are crucial for reducing greenhouse gas emissions, easing traffic on roads and providing accessible mobility options. However, a key challenge facing transit agencies globally is ensuring a convenient and seamless experience for users, from trip planning to fare payments.

An agency of the Government of Ontario under the Metrolinx Act, 2006, Metrolinx was created to improve this experience: coordinating and integrating all modes of transportation in the Greater Toronto and Hamilton Area.

Metrolinx's mission is to champion, develop and implement an integrated transportation system that enhances prosperity, sustainability and quality of life. It owns and operates GO Transit, UP Express and PRESTO – an integrated transit network that simplifies travel within Ontario.

Steve Brar, Executive Vice President and Chief Technology and Information Officer of Payments at Metrolinx, leads the team spearheading a transformation in how commuters pay for transit, driven by a vision to make public transportation the preferred choice for millions of Ontarians.







STEVE BRAR



TITLE: EXECUTIVE VP AND CTIO

LOCATION: CANADA

Steve Brar is the Executive Vice President and Chief Technology and Information Officer of Payments at Metrolinx, a pivotal role in which he directs the technology strategy and spearheads the development for PRESTO, the transit payments business unit. With over two decades of experience in leading global engineering teams and information technology, Steve has a deep commitment to innovating payment platforms that serve millions of commuters across 11 transit agencies.

His career is distinguished by a passion for evolving payment methods, with a focus on technology strategy, platform engineering, cloud, and advanced analytics. At Metrolinx, Steve is responsible for driving innovative payment solutions using public cloud, leading technology platforms, tools, and practices.

Prior to joining Metrolinx, Steve held significant roles at major organisations. At TD Bank, he was Head of the Mobile First transformation across all business lines, a pivotal shift in how banking services are delivered digitally. His tenure at BlackBerry involved overseeing BlackBerry 10 features and services and the Blackberry app store. Additionally, at Oracle, he was responsible for Strategic Performance Scorecard and the development of an innovative machine learning platform.

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EXECUTIVE VP AND CTIO,
METROLINX

Joining Metrolinx when its Payments Division was beginning to transform PRESTO, its fare payments system, to one that offers more modern and convenient payment options to meet customers’ evolving needs.

“Metrolinx is building an affordable, integrated, and sustainable transit network that connects communities to the things that matter most to them,” he says. “A core part of that mission is fare and service integration – and a key part of that is facilitating a seamless payment experience for customers who travel through the multiple transit systems across the region we serve.”

By introducing innovative payment options and streamlining regional fare integration, Metrolinx aims to reduce friction points and provide

the quality experience that today’s transit users expect.

“It’s incredibly rewarding to enhance the commute of over five million people by delivering products and services that make it easier and more convenient for them to pay for transit,” he says. “Witnessing the positive reactions of commuters to our new services, specifically when it comes to credit and debit payments, is extremely satisfying. Our efforts to increase convenience and reduce friction not only improve the experience for daily commuters but also uphold the trust stakeholders and commuters have in the Metrolinx brand.”

Leading the payments transformation at Metrolinx

In his current role at Metrolinx, Steve has championed a large-scale modernisation of the region’s transit payments infrastructure. Under his direction, PRESTO has undergone a comprehensive overhaul to enable open-loop payments via major credit cards, debit cards, mobile wallets like Apple Pay and Google Pay, and even virtual fare cards within mobile wallet apps.

“Established in 2006, the PRESTO system was designed to use smart card technology to replace tickets, tokens, passes or cash that customers traditionally used to pay for transit in the region,” he says.



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Paying for a ride should be simple for every passenger.

As a global leader in fare collection solutions, we partner with transit operators worldwide to make public transportation more accessible and efficient. Our ecosystem of ticket vending machines, fare gates, validators, and advanced software solutions caters to all needs—whether passengers pay with cash, mobile wallets, or benefit from automatic best fare calculations post-journey.

We harness cutting-edge technologies such as account-based ticketing and data analytics to give our clients a competitive edge. Our solutions and services help streamline operations, boost revenue, and enhance the overall passenger experience. Discover why leading transit operators trust Scheidt & Bachmann to transform public transit for everyone.

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SCHEIDT & BACHMANN: LEADING MOBILITY WITHIN TRANSPORTATION



Leah Beleck,
Regional Vice President
for the Canadian Market
SCHEIDT&BACHMANN 

Scheidt & Bachmann (S&B) is a leading provider of innovative system solutions for modern mobility and transportation.

Based in Germany, its unique portfolio supports a wide range of transport and parking systems, keeping millions of people and goods on the move worldwide. Collaborating with mobility suppliers to provide smart solutions worldwide, S&B is committed to making mobility as convenient and sustainable as possible.

A trusted transportation partner

The company's key locations across North America enable it to effectively manage operations, provide localised support and ensure clients receive the highest standard of service.

Leah Beleck, Regional Vice President for the Canadian Market at S&B, plays a pivotal role in shaping this organisational growth.

"Our presence in major cities enables us to offer tailored solutions that meet the specific demands of diverse transit systems," Leah explains. "Our FareGo system uses intelligent data analytics and a comprehensive service portfolio to empower

transit agencies to optimise operations and deliver superior passenger experiences."

As Leah notes, its products also leverage technology to deliver improved passenger experiences.

"S&B fosters a culture of continuous improvement, where emerging technologies are currently being explored – including biometric authentication, AI-driven analytics and mobile wallet integrations," she says.

Making payment experiences simple

The company's transformation is evident through its partnership with Provincial Agency Metrolinx, providing the organisation with devices and systems.

"This long-standing relationship has fostered a deep understanding of Metrolinx's unique needs and challenges," Leah explains. "We've worked together to address challenges to ensure both parties can navigate complexities effectively, leading to more resilient and adaptable solutions."

Over the years, the company has been able to tailor its services to meet the changing needs of Metrolinx.

"This includes the implementation and integration to Metrolinx's Open Payments solution as well as virtualising the PRESTO card in Apple and Android wallets, for the benefit of TTC's riders," Leah says. "This approach has allowed S&B to remain at the forefront of fare collection technology, while offering state of the art solutions to Metrolinx's customers."

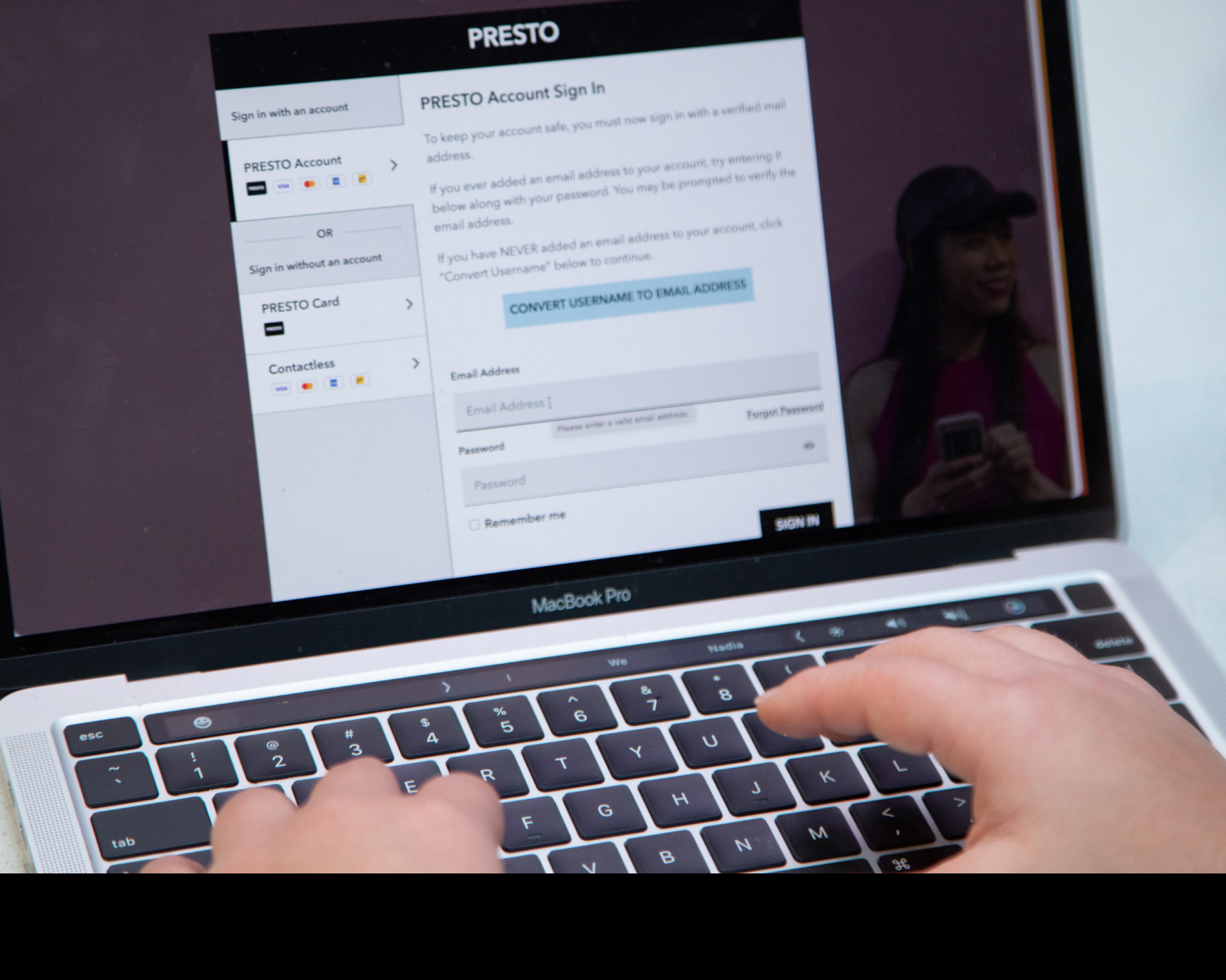


“Technology and customer expectations have evolved significantly since PRESTO’s inception. We embarked on a transformation journey a few years ago to ensure that Metrolinx continues to meet the evolving needs of our customers and transit agency partners, to make it easier to choose transit first.”

Today, Metrolinx’s innovative new payment products have revolutionised how customers pay transit fares. Through Ontario’s One Fare Program, transit riders using PRESTO only pay once when transferring between local transit agencies and the regional GO Transit system, making travel more accessible and affordable for millions.

Achieving this milestone required extensive technological innovation and collaboration. Amid global chip shortages and manufacturing challenges, Brar’s team arranged the design, manufacturing and deployment of 16,000 advanced on-vehicle payment devices alongside overhauling backend fare management systems. PRESTO’s services were also migrated to Azure cloud, adopting DevOps practices and prioritising security through DevSecOps.

“In recent years, our division has matured its culture so that it is engaged, high-performing and data-driven,” Steve says. “The latter aspect has enhanced our business intelligence system and enabled



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us to analyse the outcomes of our products and services.”

PRESTO’s contactless payment transformation has exceeded expectations, accelerating Metrolinx’s embrace of cutting-edge technologies like machine learning and generative AI (Gen AI).

“PRESTO contactless and PRESTO in Google Wallet usage exceeded PRESTO’s expectations and continues to grow months after their rollouts. As well, customers have reported great satisfaction with both products, and we’ve received recognition from global counterparts for our innovative work in the payments industry.



We've also just launched the PRESTO card in Apple Wallet, marking the first time in Canada that a transit card is available in Apple Wallet.

“The technology transformation has given us the ability to scale with demand and handle spikes efficiently. We feel confident in our security posture by applying Zero Trust and leveraging Azure Sentinel for security information and event management.

“Our data lake is on Azure, and we are standardised on Power BI for all our business intelligence and provide data as a service to our transit agencies. It's accelerated our advanced analytics by utilising Azure Machine Learning and we've built our first on-cloud machine learning model plus are investing in Gen AI with Azure Open AI.”

Cloud enables Metrolinx's transformation

A key enabler of Metrolinx's rollout of innovative new payment solutions like open-loop credit/debit payments and the PRESTO virtual card in Google and Apple Wallet has been the transit agency's adoption of cloud computing. PRESTO's account-based payment platform is cloud-native in Azure, along with the data analytics platform and tooling that powers it.

Embracing the public cloud has allowed Metrolinx to rapidly deploy these new products and services without the need to build out extensive custom on-premises infrastructure.

METROLINX

This cloud focus provides scalability to handle increasing demand, multi-region resiliency and backup capabilities, robust cybersecurity measures and enhanced business intelligence.

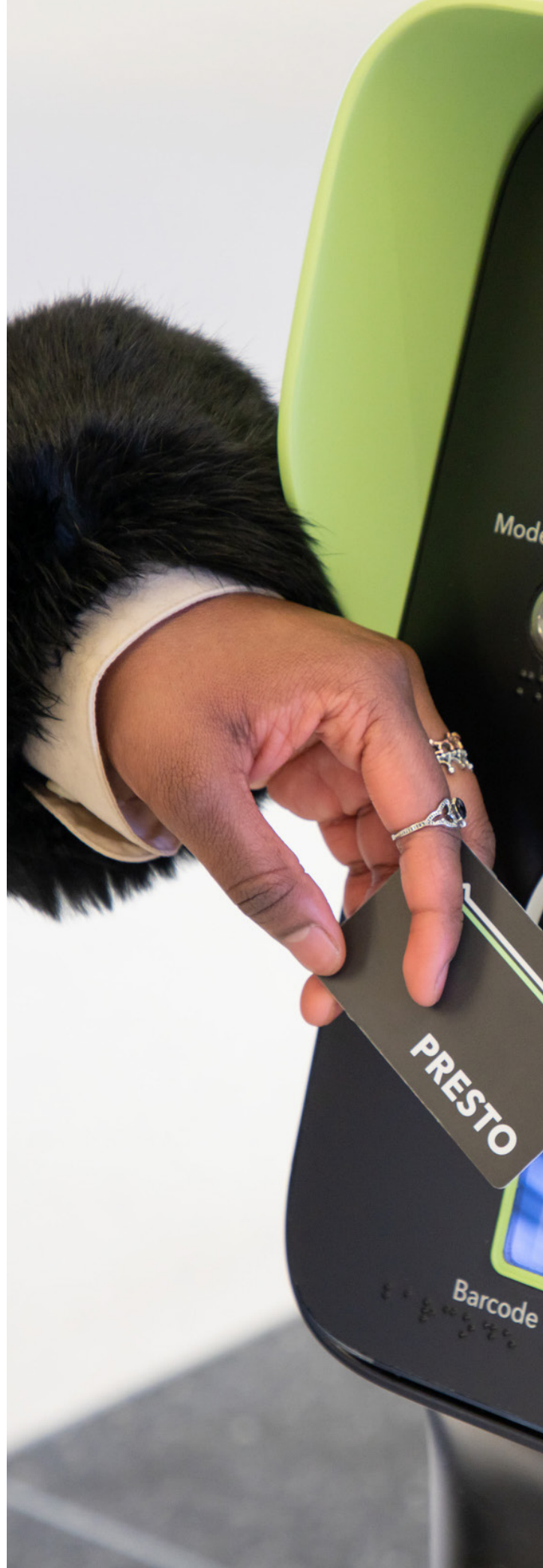
“PRESTO’s open-loop payments credit, debit and virtual card in Google and Apple Wallet work on an account-based platform that is Azure cloud native. Our data and analytics platform and tooling are all based on the Azure platform and tooling.”

The power and flexibility of the cloud has been instrumental in driving Metrolinx’s payments transformation. “The adoption of public cloud has enabled us to deploy our new set of products and services rapidly, focus on creating new customer experiences and develop new platform-level capabilities,” Steve says. “Instead of a custom on-prem infrastructure build-out, the public cloud provides scale-out to meet increasing demand, multi-region resiliency, back-up and storage, advanced cybersecurity and enhanced business intelligence.

“It further enables PRESTO to move at a faster speed and greater agility by leveraging the continuously evolving capabilities and maturing of the underlying cloud platform and the new tools becoming available on Azure.”

Partners powering payments innovation

Metrolinx has cultivated a robust partner ecosystem critical to developing and delivering innovative transit payment solutions. Key relationships span 11 transit agency partners like TTC and





Hamilton Street Railway, major retailers like Shoppers Drug Mart's 426 locations, payment networks such as Interac, Visa and Mastercard, along with technology leaders like Accenture, Scheidt & Bachmann and Microsoft.

"Our partners play an essential role in meeting the high expectations of our clients and transit riders, who demand a seamless, frictionless, and high-quality experience," Steve explains. "Close collaboration, transparency and trust are key in fostering innovation and bringing new experiences to the market at pace. Our partners' commitment is clear, and they go the extra mile to ensure that our services are robust and cutting-edge."

Metrolinx's partnership with Scheidt & Bachmann exemplifies its commitment to innovation. Based on principles like operating as 'one team' with open communication, executive engagement, transparency and a unified vision



transcending individual agendas, Scheidt & Bachmann has been pivotal in rapidly designing, manufacturing and deploying cutting-edge fare gate readers and payment processing technology, all while facing tight timelines.

“As the CTO and CIO of a leading transit payment company, our collaboration with Scheidt & Bachmann represents our commitment to innovation and partnership excellence,” Steve explains. “Our partnerships are very important. We lean heavily on our technology and service providers such as Scheidt &

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Bachmann, Accenture and Microsoft. These relationships enable us to develop and rapidly introduce market-leading transit payment experiences and technology. Our partners play an essential role in ensuring we provide a seamless payments experience.”

Outlook for the future Innovation and transformation

As Metrolinx looks to the next 12-18 months, the transit agency remains laser-focused on driving innovation and transformation in how it delivers

services and products to meet the evolving needs of customers and stakeholders.

“PRESTO’s innovation and transformation journey continues, and the next 12-18 months will be critical as we continue to enact change on how we deliver services and products while ensuring that we meet the needs of our customers and stakeholders,” Steve says.

Upcoming key initiatives will include enhancing customer experiences and ensuring equality and equity, completing Metrolinx’s delivery of additional payment options, transitioning to a fully account-

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TRANSIT PASSES

based transit payment platform, elevating its digital offerings and modernising its back-end system/ services and investigating how AI can help Metrolinx and its partners improve their business needs.

To enable these initiatives, close collaboration with transit agency partners will be crucial. “Together, we will drive innovation at a pace that aligns with the expectations of our stakeholders and today’s transit commuters, ensuring that our solutions support access and equity for all users.”

Metrolinx recognises that emerging technologies like machine learning, generative AI, and computer vision have immense potential to transform the transit payment experience. As such, the agency is proactively establishing the foundational capabilities to effectively test, integrate and scale these innovations.

“The integration of various technologies such as machine learning, generative and vision AI, biometrics for payments, cybersecurity and the proliferation of diverse transit mobility devices will have a significant impact on transit payment systems by driving efficiency and shaping the future of urban mobility,” Steve concludes.

“We will test, adopt and prudently integrate new technology, ensuring our customers’ security and privacy are intact. Understanding the needs of our customers will be important as we adopt new technological innovations.” ◉





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