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INGENICO SIGNALS

What forces are shaping the future of commerce?

[TECHNOLOGY]

Ingenico Signals 2025

The payments industry is on the brink of an extraordinary transformation, and understanding what lies ahead requires more than just observing trends or making general predictions. At Ingenico, our global payments specialists go beyond the surface to uncover specific, actionable insights grounded in years of expertise. Our goal is to empower businesses to navigate the complexities of 2025 with clarity and confidence, ensuring they stay competitive in an ever-evolving landscape.

Ingenico Signals is designed to illuminate the forces shaping the future of commerce. Combining insights from Ingenico's regional experts, each edition provides a comprehensive view of the opportunities and challenges ahead in Retail, Payments, and Technology.

Payments **Technology** is no longer a differentiator—it's a necessity. In 2025, the rapid adoption of AI-driven payments and account-to-account (A2A) transactions will redefine the payments landscape, separating those who lead from those who lag in a world where seamless, security, and precision are paramount. Businesses that hesitate risk not only losing relevance but also eroding trust in an unforgiving digital economy.

This paper explores the critical innovations reshaping payments technology. Merchants are at the forefront, driving the demand for smarter, faster, and safer solutions. Biometric authentication is becoming a cornerstone of trust, while artificial intelligence powers hyper-personalized and efficient payment experiences. Progressive web apps (PWAs) are unlocking new pathways for commerce, and fintech continues to challenge and innovate, ensuring no segment of the market is left untouched.

Across the globe, Asia-Pacific leads with super apps that redefine financial access, demonstrating how technology can transform everyday interactions into seamless, integrated ecosystems. The urgency is clear—staying ahead requires embracing these trends now.

The views and analysis presented in this paper reflect Ingenico's perspective and understanding as of the publication date. While we aim to provide helpful information, this content is shared for general informational purposes only and should not be considered as professional advice. Although we've taken care in preparing this content, we cannot guarantee its absolute completeness or accuracy.

| Summary

SIGNAL 1

The Rise of Progressive Web Apps Will Reshape Retail Engagement and Loyalty

SIGNAL 2

Biometrics to Write a New Chapter in Payment Authentication

SIGNAL 3

Merchants Are Driving the Demand for Payment Technology Innovation

SIGNAL 4

ClimateTech Emerges as a New Focus in The Payments Ecosystems

SIGNAL 5

Latin America's Rise as a Global Fintech Powerhouse and Strategic Partner

SIGNAL 6

AI Will Redefine Physical Payment Experiences Across Latin America

SIGNAL 7

How North America Will Lead the Way for Responsible Generative AI in Payments

SIGNAL 8

Biometric Authentication Will Redefine Trust in Asia's Financial Systems

SIGNAL 9

AI Will Enable Seamless Payment Device Operations Across APAC's Diverse Markets





#Progressive Web Apps

- **Enhanced Retail Engagement:** PWAs offer fast load times, offline capabilities, and seamless user experiences, enhancing customer interactions and driving conversions.
- **Cost-Effective Innovation:** PWAs eliminate the need for downloading apps, enabling a personalized, immersive experience with greater efficiency.
- **Retail Strategy Shift:** As adoption grows, PWAs will become a key part of modern retail strategies, offering agility and cost-effectiveness compared to traditional app development.

Arnaud Dubreuil
Director of Innovation



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The Rise of Progressive Web Apps Will Reshape Retail Engagement and Loyalty

Progressive Web Apps (PWAs)* are set to redefine the retail experience, bridging the gap between mobile web convenience and the rich functionality of native apps. By combining lightning-fast load times, offline capabilities, and seamless user experiences, PWAs empower retailers to engage customers more effectively and drive conversions. As highlighted in [a blog by Adobe](#), examples such as Starbucks' PWA, which allows rapid reordering even in low-connectivity environments, demonstrate how PWAs can revolutionize customer interactions.

"In a world where speed and ease define the customer journey and where end users no longer like to download and keep useless apps in their smartphones, PWAs are the key to delivering exceptional experiences on the fly with easy access," emphasizes Arnaud Dubreuil, Ingenico's Director of Innovation. For retailers, PWAs offer more than just efficiency—they are a way to create personalized, immersive shopping journeys that meet consumers where they are. As adoption grows, PWAs will become a cornerstone of modern retail strategies, delivering unmatched agility and cost-effectiveness compared with traditional app development.

* A Progressive Web App (PWA) is a website that looks and behaves as if it is a mobile app. PWAs are built to take advantage of native mobile device features, without requiring the end user to visit an app store, make a purchase and download software locally. Instead, a PWA can be located with a search engine query and accessed immediately through a browser ([TechTarget](#)).

#Biometrics



- **Revolutionizing Payment Security:** Biometric authentication is set to enhance payment security, with over 1.5 billion mobile devices expected to use the technology by 2025.
- **Seamless Experiences:** As consumer demand for faster and more secure transactions grows, biometrics will enable smooth checkouts both online and in-store.
- **Convenience Meets Security:** With growing adoption, biometrics will redefine payment authentication by offering a powerful combination of enhanced security and seamless customer experiences.

Romain Colnet
Head of New Gen Offerings



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SIGNAL 2

Biometrics to Write a New Chapter in Payment Authentication

Biometric authentication is set to become a cornerstone of payment innovation in 2025, revolutionizing security and convenience across digital and in-store channels. With over 1.5 billion mobile devices expected to use biometric identification for payments, the technology is already making significant strides in eCommerce. According to a [2023 PYMNTS Intelligence study](#), 51% of U.S. consumers who completed an online purchase in the past month used biometric authentication.

As Romain Colnet, Head of New Gen Offerings at Ingenico, explains: "**Biometrics represent the next frontier in payment authentication, blending enhanced security with seamless customer experiences. While biometrics adoption are just starting, the growing demand for faster, more secure checkout solutions is setting the stage for a breakthrough.**" He adds: "**From express in-store checkouts to online transactions, biometrics offer a powerful tool to meet consumers' increasing expectations for speed, security and convenience.**"

- **Merchants Leading Innovation:** Merchants are shaping payment solutions, using devices for services like reporting and inventory management.
- **Regional Trends:** Preferences for services vary, with QR codes favored in Mexico, Click and Collect in France, and reporting in the U.S.
- **Shift to Mobile Solutions:** Merchants are favoring mobile SoftPOS, pushing providers to adapt to evolving needs.

#Demand



Jean-Michel Devoulon
Head of Terminal
Product Management



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Merchants Are Driving the Demand for Payment Technology Innovation

The relationship between payment providers and merchants is evolving, with merchants now actively seeking advanced payment technology to meet their unique needs. An Ingenico survey of SMB merchants revealed that 60-75% already use their payment devices for additional services like sales reporting, invoicing, and inventory management. Regional preferences also stand out: QR code payments in Mexico, Click and Collect in France, and reporting on web portals in the U.S. As Jean-Michel Devoulon, Head of Terminal Product Management at Ingenico, notes: **"Merchants are no longer waiting for technology to be pushed onto them—they're actively shaping the solutions they need to thrive."**

The rising consideration of smartphone-based SoftPOS solutions, favored by up to 80% of traditional device users, underscores this shift. Jean-Michel adds: **"This is a pivotal moment where merchants are driving innovation by demanding tools that make their businesses more agile, efficient, and customer-focused."** With technology expectations transforming, payment providers must adapt to empower merchants and foster deeper partnerships.



#Climate
Tech

- **Rise of Climate Tech:** Climate Tech is one of Europe's fastest-growing investment areas, driving innovations like carbon offsetting and eco-friendly loyalty programs.
- **Real-World Applications:** At the Singapore Fintech Festival, Ingenico observed real pilots of climate-focused payment solutions in action.
- **Greentech Opportunity:** Payments and greentech are intersecting, with startups focusing on sustainability to create solutions that benefit both consumers and the environment.

Angelo Panarella
Business Leader for Italy,
SEE and Middle East



Lisa Pourcher
Head of Market
Intelligence



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SIGNAL 4

Climate Tech Emerges as a New Focus in The Payments Ecosystem

The future of payments innovation in Europe has a green tinge. According to [Sifted's Fuse report](#), Climate Tech is one of the fastest-growing investment areas, with startups tackling environmental challenges and attracting significant funding. This momentum is reshaping the payments ecosystem, driving innovations like carbon offsetting, eco-friendly loyalty programs, and platforms for conscious consumerism.

Lisa Pourcher, Head of Market Intelligence at Ingenico, observed the tangible progress during her recent attendance at the Singapore Fintech Festival (SFF): **"For the first time, I saw real pilots of climate-focused payment solutions in action. It's not just talk anymore—companies are taking significant steps toward integrating Climate Tech into payments innovation"**.

As Angelo Panarella, Business Leader for Italy, SEE & Middle East, explains: **"The intersection of payments and greentech represents a powerful opportunity to address environmental challenges while delivering innovative value to consumers and businesses."** He adds: **"Europe's emphasis on sustainability is shaping the priorities of payments startups, driving a new wave of solutions that not only facilitate transactions but also contribute to a greener future."**



#Fintech

- **Fintech Growth:** Latin America is emerging as a global fintech leader, driven by innovations like Brazil's PIX, setting new global standards in payments.
- **Local–Global Partnerships:** Regional innovators and global firms are collaborating to address Latin America's unique needs and enable cross-border growth.
- **Technological Integration:** Technologies like Android-based systems and instant payments are driving seamless integration between global standards and local demands.

Marin Mignot
Head of LAR region



Jose Barletta
LAR Solution Director



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SIGNAL 5

Latin America's Rise as a Global Fintech Powerhouse and Strategic Partner

Latin America is rapidly emerging as a global fintech powerhouse, fueled by innovation, digital adoption, and landmark systems like Brazil's PIX. This instant payment system has revolutionized transactions with unmatched speed, security, and accessibility, setting a new global standard. According to [PaymentsCMI](#), the region's fintech ecosystem is no longer catching up but leading, with Brazil spearheading financial inclusion and transformative solutions. **"PIX is a shining example of the ingenuity coming out of Brazil,"** says Marin Mignot, Head of LAR Region at Ingenico. **"The broader fintech ecosystem in Latin America is showcasing its ability to deliver global impact."**

This leadership is reinforced by thriving partnerships between regional innovators and global firms. Payment processors like EBANX, dLocal, and PagSeguro are leveraging localized expertise to meet the region's unique needs while enabling cross-border growth. Mignot highlights the importance of collaboration: **"Global players recognize that partnerships are key to navigating Latin America's complexity and tapping its immense potential."** Jose Barletta, Ingenico's LAR Solution Director, adds: **"Technologies like Android-based systems and instant payments bridge global standards with local demands, driving seamless integration and efficiency."** As Latin America cements its position on the global stage, 2025 promises to be a pivotal year for the region's fintech and cross-border ecosystem.

- **AI Integration in Payments:** AI is transforming physical payments in Latin America, enhancing personalization, security, and operational efficiency.
- **Smarter Merchants:** AI in Android-based payment terminals helps merchants predict consumer needs, detect fraud, and improve customer interactions.
- **Regional Opportunity:** Latin America is positioned to lead AI-driven payment innovations, fostering trust and boosting operational efficiency.

#Artificial Intelligence



Jose Barletta
LAR Solution Director



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AI Will Redefine Physical Payment Experiences Across Latin America

Artificial intelligence is set to redefine physical payment transactions in Latin America, driving personalization, security, and operational efficiency at scale. Payment terminals, especially Android-based devices, are becoming innovation hubs where AI enables merchants to deliver smarter, safer, and more tailored consumer experiences.

Jose Barletta, LAR Solution Director at Ingenico, explains: **“The integration of AI into physical payment environments is no longer just about processing transactions. It’s about creating an intelligent interface that empowers merchants to anticipate consumer needs, detect fraud in real time, and enhance interactions at every touchpoint.”**

AI is powering advances in fraud prevention, biometric authentication, predictive maintenance, and personalized customer engagement, all of which resonate strongly in a region like Latin America, where economic diversity and dynamic consumer behavior demand innovation.

Barletta adds: **“Latin America has a unique opportunity to lead in AI-driven payment technologies. With solutions that adapt to regional complexities, businesses can foster trust, boost operational efficiency, and ultimately transform the consumer experience.”**



#GenAI

- **GenAI in Payments:** North America is leading the way in applying GenAI to payments, driving operational efficiencies and personalized customer experiences.
- **Canada as a Model:** Canada's regulatory frameworks and focus on ethical practices make it a hub for responsible GenAI experimentation in the payments industry.
- **Responsible Innovation:** North America combines bold technological advancements with a strong commitment to data privacy, security, and transparency in AI adoption.

Kevin Teelucksingh
Head of Sales Canada



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 SIGNAL 7

North America Will Lead the Way for Responsible Generative AI in Payments

North America is emerging as a leader in generative AI (GenAI) innovation, particularly within the payments industry, where businesses are actively exploring its transformative potential. Across the region, organizations are leveraging GenAI to streamline operations, deliver personalized customer experiences, and achieve unprecedented efficiencies. This momentum is driven by a unique blend of technological advancement and a deep commitment to ethical practices. [Recent industry reports](#) highlight GenAI's ability to revolutionize workflows, enable faster decision-making, and meet the evolving demands of consumers through tailored services and smarter processes.

Among the countries driving this innovation, Canada stands out as a model for responsible experimentation. Known for its strong regulatory frameworks and a culture of collaboration, Canada has established itself as a hub for piloting GenAI in payments. Canadian businesses are adopting a balanced approach, combining bold innovation with careful attention to critical concerns such as data privacy, security, and the socio-technical challenges of integrating AI-driven systems. This measured strategy positions Canada as a valuable participant in refining GenAI applications, contributing to a broader adoption driven by global and U.S. advancements.

As Kevin Teelucksingh, Head of Sales Canada at Ingenico, explains: **"Canada exemplifies the ideal environment for generative AI experimentation in payments. Its unique combination of innovation and prudence allows businesses to explore AI's potential while maintaining a strong focus on responsibility and security. This balanced approach reflects North America's broader strategy of coupling bold technological advancements with an unwavering commitment to trust and transparency."**



#Biometrics

- **Biometric Authentication:** In 2025, biometric solutions like palm vein recognition will enhance payment security and user trust across Asia.
- **Innovative Solutions:** Ingenico's collaboration with Fujitsu Frontech introduces secure, touchless authentication, setting new security standards.
- **Security and Compliance:** Widespread biometric adoption will need a balance of innovation with strong security and privacy protections.

Alexandre Tougard
APAC Head of R&D



Dinesh Perera
APAC Head of Security,
Compliance & Risk



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SIGNAL 8

Biometric Authentication Will Redefine Trust in Asia's Financial Systems

In 2025, biometric authentication will transform payment security and financial access across Asia, driven by mobile-first consumers, government-backed identity frameworks, and the pursuit of seamless experiences. Initiatives like [Tencent and Visa's palm recognition technology](#) in Singapore exemplify the region's ability to innovate at scale, enabling users to authenticate transactions effortlessly with a wave of their hand.

[Ingenico's Palm Vein solution](#), developed in collaboration with Fujitsu Frontech North America, builds on this momentum by using unique vein patterns to deliver touchless, highly secure payment authentication. These advancements are bridging the gap between convenience and security, setting new standards for trust in digital transactions.

Alexandre Tougard, APAC Head of R&D at Ingenico, reflects: **"Biometric authentication signals a profound shift in how we define trust and security in the digital age. It transcends mere convenience, creating new pathways for financial inclusion while fortifying payment systems against emerging threats."** Adding to this perspective, Dinesh Perera, APAC Head of Security, Compliance & Risk, highlights: **"The adoption of biometrics is as much about safeguarding the integrity of financial ecosystems as it is about enhancing user experience. As we integrate these technologies, prioritizing robust security architectures and nuanced compliance frameworks will ensure that innovation serves without compromise."**

As Asia embraces these transformative technologies, the challenge will lie in navigating the intricate landscape of cultural expectations and regulatory complexities, ensuring that progress harmonizes with privacy and equity.

- **AI-driven Device Management:** AI will revolutionize payment device management in APAC by improving resilience, security, and scalability.
- **Predictive Capabilities:** AI will predict device malfunctions, reduce downtime, and optimize terminal deployment in underserved areas, enhancing financial inclusion.
- **Operational Efficiency:** AI-powered insights will drive fraud detection, energy efficiency, and cost reduction, offering a competitive edge for early adopters.



#Artificial Intelligence

Anushka Weeratunga
APAC Regional Head



Marc Fischer
APAC Chief Operations Officer



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AI Will Enable Seamless Payment Device Operations Across APAC's Diverse Markets

The Asia-Pacific region, a crucible of digital payment innovation, is set to redefine how payment estate devices are managed through the transformative power of Artificial Intelligence (AI). AI will move beyond being a mere efficiency tool to become a central force shaping operational resilience, security, and scalability in payment infrastructure. Across this diverse region—where cutting-edge markets like Japan and nascent digital economies in Southeast Asia coexist—the integration of AI will bridge critical gaps, offering tailored solutions to meet varied operational demands.

AI's predictive capabilities will anticipate device malfunctions before they occur, dramatically reducing downtime and ensuring consistent user experiences. In addition, AI will enable businesses to optimize the deployment of payment terminals in underserved areas, advancing financial inclusion while minimizing costs. With the rise of data-driven algorithms, estate managers will gain real-time insights into terminal performance, fraud detection, and energy efficiency, creating a sustainable framework for device operations.

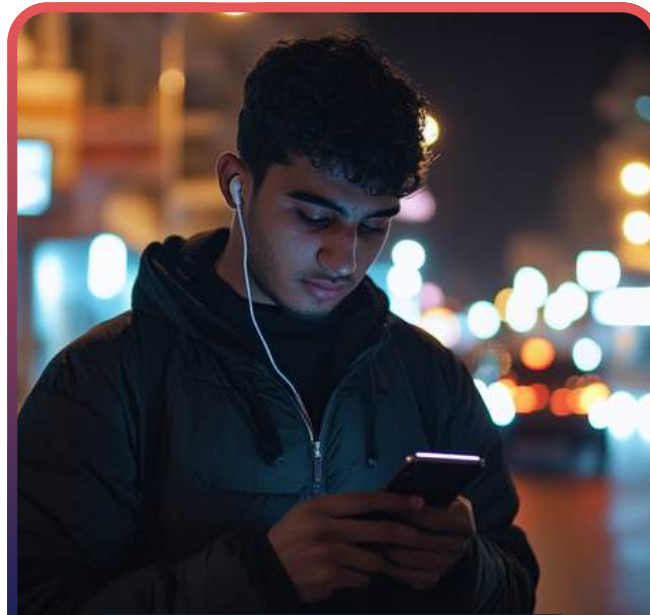
As Anushka Weeratunga, Ingenico APAC Regional Head, notes: **"AI represents a paradigm shift, transforming the intricate management of payment devices into a seamless, intelligent system attuned to the demands of APAC's dynamic markets."** Marc Fischer, APAC Chief Operations Officer, adds: **"There is scope for employing machine learning techniques in device management in areas such as predictive maintenance and fraud control. By driving down costs and improving merchant satisfaction in the short term this could lead to early adopters earning a competitive advantage, though in time their use is likely to be standard."**

Conclusion



Artificial Intelligence

Breakthroughs in biometrics and generative AI are setting new standards for trust, security, and efficiency in payments.



Merchant driven

Progressive Web Apps and merchant-driven innovation are redefining consumer experiences and business strategies in retail.



Regional changes

Regional innovations, including APAC's AI-powered operations and Latin America's fintech leadership, are transforming the global payment landscape.



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Discover how Ingenico can empower your payment technology strategy.

Moving Commerce Forward

Ingenico is the global leader in payment acceptance and services. We support our customers, and their customers to do more with payments. Active in 37 countries, with over 3,500 employees we have been at the forefront of the commerce landscape for over four decades.

With more than 40 million payment devices deployed worldwide, powered by over 2,500 apps, the company is servicing the needs of millions of consumers every day. Through our advanced integrated solutions and network of partnerships, we simplify the world of payments and bring value added services to move commerce forward.



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