



CASE STUDY

MAY 2022

CCE: Delivering real-time financial inclusion to Peru



Foreword



In recent years, economies around the world have accelerated adoption of digital payments. In Peru, real-time payment transactions grew nearly 1000% year-on-year in 2021 as changing consumer and business behaviours fuelled demand for faster, safer and easier ways to pay.

Modernizing a country's payments infrastructure is a major undertaking. Recognizing the value of an experienced partner to guide them on the journey, Peru's operator Cámara de Compensación Electrónica (CCE) selected Mastercard and ACI Worldwide to modernize its digital payments infrastructure at speed. Mastercard has a long, global track record of successfully deploying real-time payment systems and we are excited to continue our work with CCE and ACI to develop a powerful and flexible real-time payment solution.

We're incredibly proud to have played a critical role in developing this technology for Peru, which will boost its economy and foster greater financial inclusion for its 23 million unbanked citizens. This infrastructure will provide a platform for innovation to support the country's economy, transforming the payments landscape for both financial institutions and their customers.

Peru is gearing up to be one of the most flexible systems in the region, if not the world, and is well prepared for the future. I am proud to present this case study to you, and hope it inspires innovation when modernizing real-time payments infrastructure, wherever that may be.

Carlos Pontes

Executive vice president, New Payment Platforms, Latin America and Caribbean at Mastercard

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“Financial institutions are dealing with changing consumer behaviors and a business demand for real-time payments. New volumes and customer types require modernized central infrastructures that make real-time payments universally accessible. To carry out this modernization, CCE selected ACI Worldwide and Mastercard to simplify and accelerate connectivity for participants and develop advanced data use cases for Peruvians.”

– Sam Jawad, financial services executive at ACI Worldwide

“The volume of immediate transfers that we process each month has more than quadrupled since the pandemic. In January 2021, we processed 2,876,000 million, increasing on a monthly basis. By January 2022, we processed 6,959,365 million. Thanks to the Mastercard and ACI Worldwide partnership, we can exceed this growth, as both consumer and business demand for real-time payments rapidly increases across the country.”

– Martín Santa María, CEO of Cámara de Compensación Electrónica (CCE)

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CCE: DELIVERING REAL-TIME FINANCIAL INCLUSION

WINNER OF CELENT MODEL BANK 2022 AWARD FOR PAYMENTS INFRASTRUCTURE

Gareth Lodge

March 16, 2022

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CASE STUDY AT A GLANCE

As part of our annual research agendas, Celent sets out some of the key technology themes shaping the industry. Despite having written extensively about real-time payments for many years, it remains a major theme, given the traction that it continues to gain. This initiative stood out for a number of reasons, not least the staggering growth experienced and the concurrent implementation of a new real-time infrastructure while replacing an existing infrastructure with a state-of-the-art platform in just a matter of months, and with minimal impact on current users.

FINANCIAL INSTITUTION	Cámara de Compensación Electrónica (CCE)
INITIATIVE	Delivering Real-Time Financial Inclusion
SYNOPSIS	The launch of a competitive service by some of its owners made CCE realize they needed to upgrade the current system, which was launched in 2016, as well as cope with significant growth. CCE chose a state-of-the-art solution while minimizing the impact on existing users.
TIMELINES	<ul style="list-style-type: none"> • March 2020: Launch of PLIN by Visa, as a direct competitor • December 2020: IIT moves to 24/7 operations • February 2021: CCE announces it plans to fully modernize IIT with Mastercard and ACI • June 2021: New service began industry testing • 4Q21: Onboarding of new participants begins
KEY BENEFITS	<ul style="list-style-type: none"> • 1271% volume growth in under two years. • Onboarding typically now takes just four months and can be either ISO 8583 or ISO 20022. • Focus on becoming the payment rail for fintechs will support the goal of greater financial inclusion.
KEY VENDORS	ACI Worldwide, Mastercard

CELENT PERSPECTIVE

Last year we noted that it was not often that Celent awards Model Bank recognition to a financial infrastructure. When so awarded, it is likely a result of a technology initiative within a bank, one which sets that bank apart from others. We also noted that the winning infrastructure was *leveling* the playing field in many ways for banks. Yet this year, Celent has chosen again to recognize a financial infrastructure, for a number of reasons.

- CCE are building a future-proof foundation for things to be built upon for everyone. By enhancing reach through explicit expansion of their ecosystem and utilizing simplicity to make sure the platform can evolve, CCE are ensuring they will become the payment rail that connects everyone, both banks and non-bank fintechs. By doing so, they will help greater financial inclusion across Peru's large unbanked population. While experiencing strong growth already, COVID accelerated the growth, underlining the need for greater inclusion.
- In building the platform, they have done something quite interesting. It would have been simpler to merely upgrade or patch the existing systems to cope with the growth and competitive step. Instead, they chose to build a state-of-the-art solution, putting their effort in the leading vanguard of infrastructures globally. Replacing a system is never easy; doing so during a pandemic and in such rapid speed makes this a remarkable story.
- Many things stand out about the story, but one is worth mentioning. By using a message converter, CCE made it both easy to join and insulated existing users from any major change. Yet the system allows for users to take greater advantage of the solution's features, such as data and ISO 20022. Rather than simply leveling the playing field, CCE are providing opportunities to *anyone*, while still providing a significantly improved service for *everyone*.

DETAILED DESCRIPTION

Introduction

Created by Peru’s banks, the Electronic Clearing House of Peru (CCE) is the central entity that provides clearing services in the Peruvian financial system, facilitating interbank payments and checks. Currently it offers two services: Deferred Transfers and Immediate Interbank Transfers (IIT, launched 2016). Transfers can be performed using internet or mobile banking and are processed in real time, with recipient banks required to credit amounts to their customers no more than 30 seconds after a payment is received. The system enables Person-to-Person (P2P) and Business-to-Business (B2B) payments directly between accounts and can also be used to pay credit card bills. A maximum of PEN30,000 (\$10,000) per transaction is allowed. Currently, 20 financial institutions offer the IIT service.

Table 1: Cámara de Compensación Electrónica (CCE) Snapshot

Cámara de Compensación Electrónica (CCE)	
YEAR FOUNDED	2000
GEOGRAPHICAL PRESENCE	Lima, Peru
EMPLOYEES	18
OTHER KEY METRICS	Owned by 15 banks
RELEVANT TECHNOLOGIES AND VENDORS	ACI Worldwide, Mastercard

Source: CCE PERU

CCE sits at the heart of the Peruvian payment system, connecting more than 30 financial institutions. Its real-payment product, IIT, was launched in 2016 and had seen strong growth. Then, two things happened in early 2020: Three of CCE’s owning banks launched PLIN—a free, mobile-based, real-time solution that also provided a much more user-friendly experience—and the global pandemic started. Overnight, volumes increased significantly.

CCE realized that they needed to improve their IIT offering while coping with significant increases in volume. Its strategy was simple in some ways—get the best,

most flexible real-time payment solution possible to respond to both the threats and opportunities, and to be better prepared for whatever came next. By doing this, they also realized their goal of greater financial inclusion across Peru. By being the rail that connects everyone, including non-bank fintechs, it further enhances the network effect of IIT.

Opportunity

When reviewing Model Bank entries every year, there are often very clear themes across all entries. This year, and specifically this entry, was no different. Many entries are driven by either a clear opportunity, a threat... or in this case, both. And unsurprisingly, COVID also featured in many entries as well, including this one.

CCE Peru is the central entity that provides clearing services in the Peruvian financial system, facilitating interbank payments and checks, and is owned by the major Peruvian banks. It offers two services: Deferred Transfers and Immediate Interbank Transfers (IIT). IIT was originally launched in 2016 and has been successful, with good growth in volumes, averaging 35%–40% growth most years, with Deferred Transfers growing by 20% per year. By January 2020, IIT processed an average of 580,000 transactions per month.

The first clear opportunity for CCE was helping drive greater financial inclusion. Peru has a population of 33 million, with more than 70% of the country unbanked. One of the goals and opportunities that CCE pursued then was facilitating greater financial inclusion by offering a better alternative to cash, in part by becoming the facilitator of absolute interoperability among all of Peru's payment systems and financial services. This resonates with the goals of many central payment infrastructures and dominant banks, including previous Model Bank winners PayNet Malaysia and Banco del Estado de Chile.

The first threat to CCE came from their own success. IIT volume growth was already accelerating, and anticipating growth from continued success, CCE were already considering the need to upgrade their systems to cope with the additional volumes. In addition, the existing IIT service operated for just 7 or 8 hours a day, and only on weekdays. If IIT were to expand its operating hours, the systems would need to be capable of handling 24/7 operation and the likely subsequent increase in volumes.

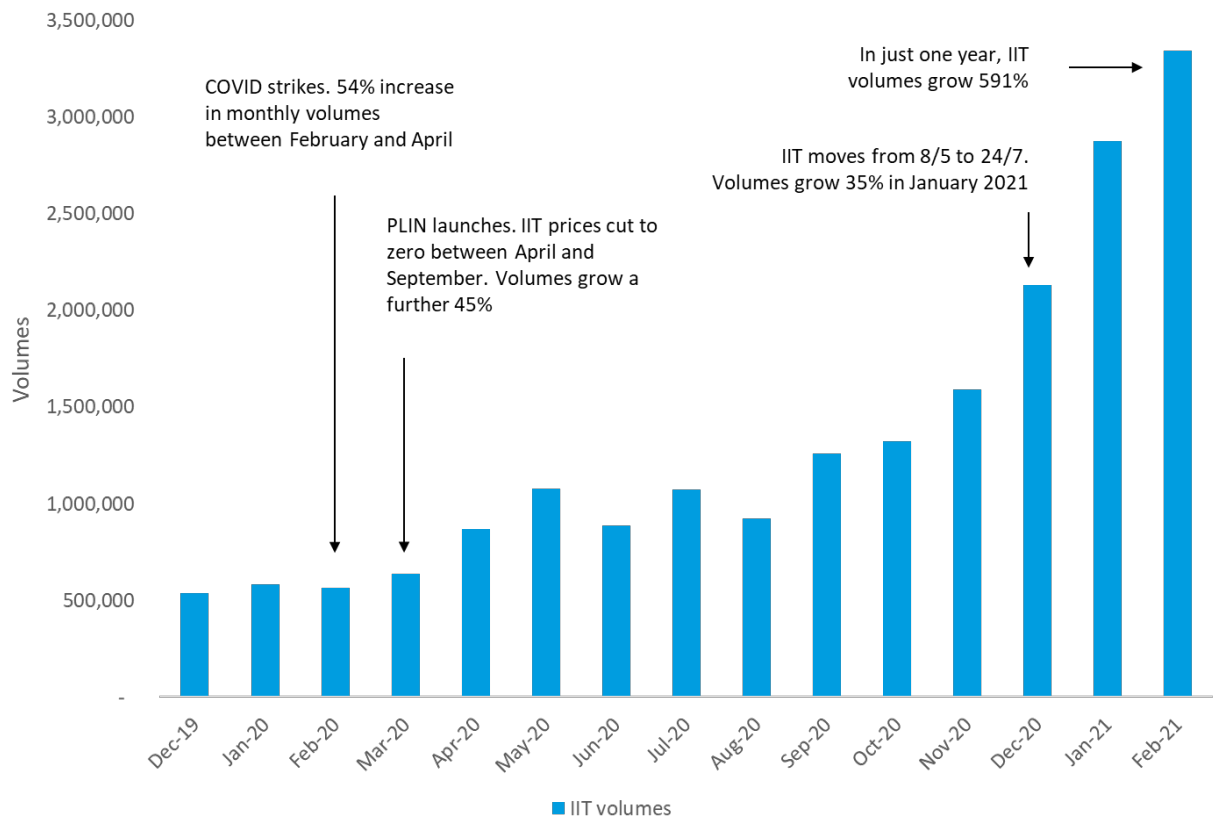
Then COVID struck. This strategy became even more critical against the backdrop of the global pandemic. COVID caused a big increase in demand for real-time payments to replace cash, and the government needed to distribute financial support. Volumes quite literally increased overnight, doubling in just three months. This explosive growth then also drove business demand for real-time payments as well. The combination of new volumes and new customer types reinforced the need for new, modern digital payments infrastructure.

The final piece of the puzzle fell into place in March 2020. Three of the country's five biggest banks (and who also own CCE) launched PLIN, a mobile P2P initiative powered by Visa Direct (via Visa's acquisition of YellowPepper). It offered free instant

transfers between accounts held at participating banks, with the service integrated in each bank’s respective mobile app. Being app driven, the process was fairly simple and intuitive. In contrast, at the time of launch, many banks charged for IIT that offered a complex user experience. For example, users needed to enter a 20-digit code just to identify the target account!

In light of this alternative service, CCE recognized that its banks needed richer services from IIT to meet their customers’ needs. It temporarily waived fees on Immediate Interbank Transfers between April and July 2020, while it accelerated its plans to enrich the IIT service.

Figure 1: 2020 Saw IIT See Explosive Growth, for Many Reasons



Source: CCE PERU

Solution

CCE recognized several reasons that the existing IIT system needed to be not just upgraded, but fundamentally rethought. First, the existing real-time payments system was not built with enough flexibility or extensibility to manage the speed of change in the market. In fairness, few could have anticipated the rapid growth, or the arrival of a pandemic that would accelerate that growth. Second, CCE recognized that real-time and digital payments demand would likely continue to outstrip forecasts as record numbers of citizens began to participate in the digital ecosystem. There is also very little historical data about the payment preferences of the users, so any solutions would need to be able to adapt to those customer needs as they became clear. Third, there needed to be a prioritization of easy onboarding for participants, including non-banks. New entrants were bringing new services to market specifically tailored to the needs of the previously unbanked. Simplifying system connectivity would be critical to meeting the ultimate goal of financial inclusion by becoming the payment rail that connected every type of participant. It was particularly important to reduce the impact on the existing banks' service to ensure it was a competitive proposition to PLIN.

Implementing a country's payments infrastructure is a major undertaking. Replacing an existing, growing system is arguably even more challenging and risky. CCE chose to work with Mastercard and ACI Worldwide, who had publicly announced a strategic partnership in September 2020. CCE, who became the partnership's first customer, selected the partnership solution for a few reasons. First, both ACI and Mastercard had extensive global experience in real-time payments, having been involved in the creation of 18 real-time schemes around the world. CCE wanted to tap into that technology and implementation expertise to ensure that the system would align with the best, globally. They believed they would get best-in-class solutions for every element of a central infrastructure, including software, scheme rules, digital overlay services, testing, participant connectivity, and onboarding. This end-to-end approach would ensure speed to market, as well as the agility to evolve over time.

There are two main components to the system.

1. The Mastercard **Instant Payment Service (IPS)** platform is delivered as a managed service and is ISO 20022 native. This solution evolved from Mastercard's acquisition of VocaLink, whose earlier IPS iterations power many systems around the world, including Faster Payments in the UK, FAST in Singapore, and TCH RTP in the US. The mix of a hybrid on-premises and cloud service for CCE means it can both easily scale and also operate 24/7/365.

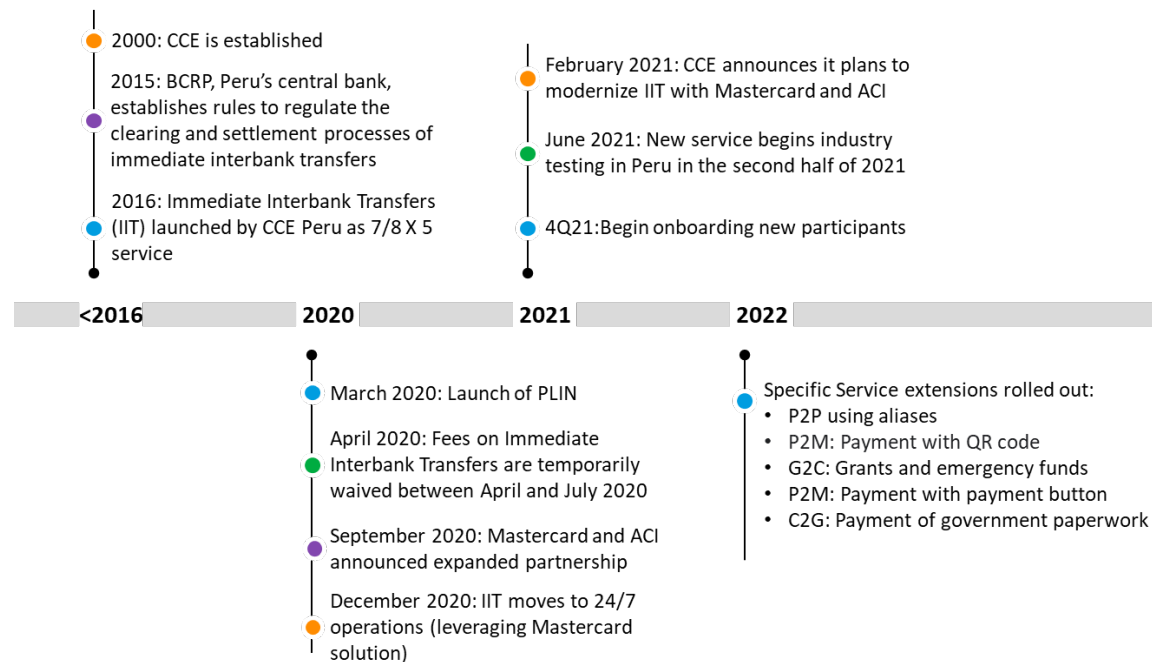
2. ACI's **Enterprise Payments Platform** operates alongside Mastercard's, simplifying and accelerating connectivity for participants. Financial institutions can use modern APIs to connect to the new scheme via the ACI integration solution. ACI's solution provides message transformation and data enrichment between CCE's API implementation of their current message specification used by its participants (ISO 8583) and Mastercard's new ISO 20022 IPS solution. This is an important step to note. There was no mandate for the banks to adopt the new service, and they also had an attractive alternative. This technology approach meant that financial institutions selecting ACI to connect to Mastercard's central infrastructures benefited from pre-integration for speed to market and economic and operational efficiencies.

ACI maintains this data transformation and integration, or adaptor layer, at the bank side to the latest standards and rulebook defined by CCE to provide continuous compliance for banks. This protects the banks' existing systems and technology investments, whether these are ISO 8583 or ISO 20022 currently, ensuring no loss or truncation of data in message transformation and protecting the core from major change until the bank is ready to modernize in line with its own strategic roadmap. The ACI gateway solution for banks can also support a real-time or shadow balance held outside the core banking solution, to protect it from the vast increase in transaction volumes while complying with 24/7/365 real-time balance requirements from the scheme. This includes stand-in authorization and queuing capabilities. Banks can thereby focus on their differentiated service offerings, rather than mandates and maintenance, even if their back-office systems are not yet ready to fully support real-time payments. Competition in the ecosystem ultimately drives better services and choice for the end users.

This was a key step in ensuring quick time to market today and a clear path forward over time. All institutions can participate as they did before they migrated, but those institutions who migrate to ISO 20022 internally can develop new rich-data use cases for IIT, as well as new services for business across CCE's traditional service set of transfers, direct debits, credit installments, checks, and bills of exchange with limited impact to their existing payment solutions. The ISO 20022—first approach of CCE's solution will also support potential cross-border interoperability with other real-time schemes emerging in Latin America. The benefit of this approach is also evidenced by the challenges and delays experienced by other mature markets attempting to migrate to ISO 20022.

Finally, one of the other goals of the project was to be able to compete not just on functionality and availability, but also usability. With this implementation, not only can users send and receive payments from their mobile phones using just a phone number, they can also use the recipient's phone number to identify their bank details and no longer have to supply a 20-digit code. This will significantly contribute to the reduction of the country's reliance on cash and drive a more digital economy.

The project timeline is illustrated in Figure 2 on the next page.

Figure 2: Timeline of IIT 2016-2022

Source: CCE PERU

Results, Lessons Learned, and Future Plans

To date, 20 financial institutions are leveraging the new services, and three more are engaged in discussions with CCE about connecting to the new system, exceeding CCE's projections for onboarding customers.

On average, it will only take participating banks four months to onboard to the new modernization scheme via the ACI integration service. This represents significant value for banks who had already invested in connectivity to the original IIT system. It allows them to accelerate their own roadmap to developing value-added services that drive new revenues for their business from the newly banked population, who represent a significant whitespace of currently untapped potential customers.

The time to value for participating financial institutions is rapid thanks to the simple connectivity and onboarding process. This helps create a more level playing field within Peru's financial ecosystem and deliver on CCE's desire for bank-fintech interoperability.

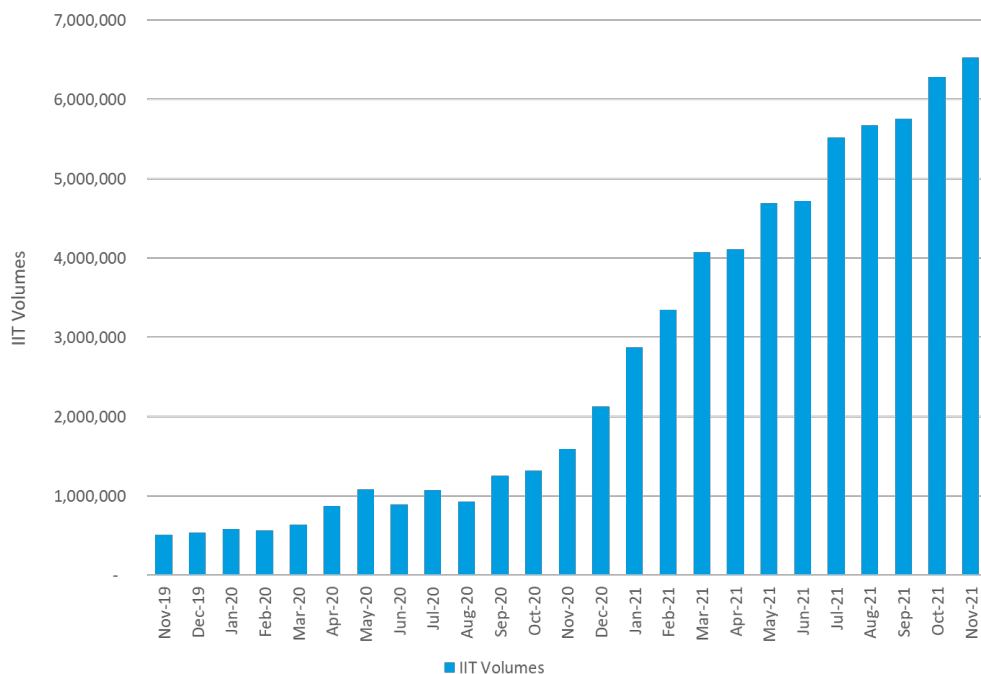
Peru has seen rapid growth of mobile wallet adoption in the market, but not all wallets are interoperable. CCE looks to develop interoperability between mobile wallets within the ecosystem, including between the international processors whose rails underpin some of these wallets. The centralized alias directory, as part of CCE's

plans, will be crucial to this interoperability, allowing multi-rail/multi-wallet transactions to be conducted in real time.

The modernization of CCE’s infrastructure has helped spark huge growth in Peru’s fintech sector, alongside the Peruvian Superintendency of Banking, Insurance, and Private Pension Fund Administrators (SBS) beginning pilot tests ahead of “open banking”-type frameworks coming into effect in February 2022. Peru is home to an estimated 120 fintech startups actively tackling the issues of financial inclusion and better servicing the region’s small and medium-sized businesses, all of whom stand to benefit from CCE’s modern, robust, and accessible infrastructure.

With the new modernized infrastructure CCE has significantly increased the number of daily transactions it can process, as well as enabling several use cases across P2P, B2C, and G2C services. It now has a competitive offering against the PLIN service to retain and grow market share. As a result, CCE is now processing in excess of eight million transactions per month, with continued organic growth projections throughout 2022 (Figure 3).

Figure 3: IIT Volumes Continue to Grow, Achieving 1271% Growth in Just Two Years



Source: CCE PERU

Launching a new nationwide payment system is no simple task. Replacing one that is already growing rapidly, while simultaneously insulating banks from major changes and providing leading edge possibilities—*during a pandemic*—is a remarkable achievement. Peru now finds itself with one of the most flexible systems in the region, if not the world, and well prepared for the future.

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