



Colombia's Online E-Payments Platform:

Private Sector Innovation

Inspired by Government Vision

ABOUT BTCA

The Better Than Cash Alliance (BTCA) is an alliance of governments and private sector and development organizations committed to replacing the use of cash payments with electronic payments, where appropriate, and to promoting a “cash-lite” economy.

Shifting payment of salaries, social welfare and relief payments, payments to suppliers, and remittances from cash to electronic has the potential to improve the lives of low-income people, particularly women, while giving governments, the private sector, and the development community a more transparent, time- and cost-efficient, and often safer means of making and receiving payments.

The Better Than Cash Alliance:

1. Advocates for the use of all forms of electronic payments where they provide a preferable payment option to cash;
2. Collaborates with program partners to mobilize available technical expertise and resources to identify and implement the most effective approach to make the transition from cash to electronic payments; and
3. Conducts research, documents good practices, and produces knowledge products to address the barriers to adoption and to drive the effective shift from cash to electronic payments globally.

BTCA’s Development Results Focused Research Programme (DRFRP) accelerates the generation and dissemination of knowledge and tools for stakeholders transitioning part of their payments from cash to electronic. The DRFRP has three components: 1) Readiness diagnostics, which compile existing data on the volumes, values, and payment means for each kind of payment made by governments, the private sector, and development community partners, and assess a country’s readiness to replace cash payments with electronic payments; 2) Case studies of on-going shifts; and 3) Toolkits to provide practical steps for BTCA stakeholders to plan, measure, and implement shifts.

The DRFRP is managed, on behalf of BTCA, by a consortium led by Bankable Frontier Associates, a Boston-based consulting firm, with advice from experts from the World Bank Payments Group and the CGAP Technology Team, as well as local research staff.



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By Bankable Frontier Associates (BFA) under the supervision of Beatriz Marulanda

BTCA CASE STUDY SERIES

The BTCA case study series seeks to highlight specific examples of shifts to electronic payments by government agencies, businesses, or development partners. Each case study documents the extent of the shift and the factors that have helped or hindered it, to provide insights that are relevant to a wide readership interested in how to shift from cash to electronic payments.

AUTHORS

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Note: Content and data in this document are based on information gathered during the fourth quarter of 2013, and therefore represent data prior to this date.



1 Introduction

Over the past 10 years in Colombia, the banking sector and a private clearing house, ACH Colombia, have developed and expanded an online payment instrument, embedded in government and business websites, that allows businesses and consumers to authorize electronic payments directly from their bank accounts to government agencies and to other businesses. In the past five years to 2013, the number of payments made this way had increased by more than tenfold to almost a million a month. By March 2014, it had already reached 2 million transactions. This is significant growth for a new payment instrument in a country where the total number of electronic payments per month was estimated at only 80 million in 2013.¹

For online purchases, this new electronic payment platform gives consumers another option in addition to their existing credit and debit cards, and its fast-growing usage for this purpose indicates that it has become a viable alternative. For utility and bill payments, this instrument is replacing other older

payment approaches, notably cash, check, and bank drafts, which take longer and are more expensive.²

Securing the adoption and usage of any new electronic payment instrument on a large scale is never assured. The story of how Colombia came to set up this instrument, and then to build up its usage to a critical mass, provides useful insights for countries that are ready for what the BTCA White Paper³ described as the “second shift,” where large numbers of bill payers start to switch their payment behavior to electronic instruments.

The instrument is called *Pagos Seguros en Línea* (Secure Online Payments, or PSE for its acronym in Spanish). Although PSE is a private sector innovation, owned and operated by the country’s main private clearing house, the Colombian government played an essential role at every step of PSE’s development. The central bank encouraged banks to form ACH Colombia in the first place, and it created its own clearing house when the banks hesitated.

Next, the office of the President began requiring government agencies to accept online payments. This spurred the banks to create a new service so as not to be preempted by a third-party service. Finally, the government required that payments to social security operators (for health insurance and pensions, among other contributions or payments) be made through a centralized electronic platform. PSE became the central payment platform for this purpose; as **these payments⁴ became less complex and faster** for employers, they provided scale and helped build users' trust in the system and in electronic payments generally.

Catalyzed by government action, Colombian banks, with a wide range of profiles and interests, had to define commercial agreements that would support PSE without damaging their existing business. The eventual charging arrangements embodied in the current PSE fees may not be optimal (the fee structure disincentivizes low-value bill payments, for example), but it is also likely not final. ACH Colombia recognizes these challenges and is working on improving the fee structure and the acquiring model.

The compromise that resulted in PSE still represents a marked **success of public-private collaboration resulting from a process of work on all sides that ended up sharing**

a goal to promote electronic payments. Using PSE, businesses and consumers can today make online payments for purchases and bills, from any bank to any bank in Colombia. And the private sector has quickly become a key user of PSE. Merchants, schools, utilities, and other billers now routinely accept transfers initiated through PSE. This electronic payments success is all the more **remarkable in a context with low card usage.**

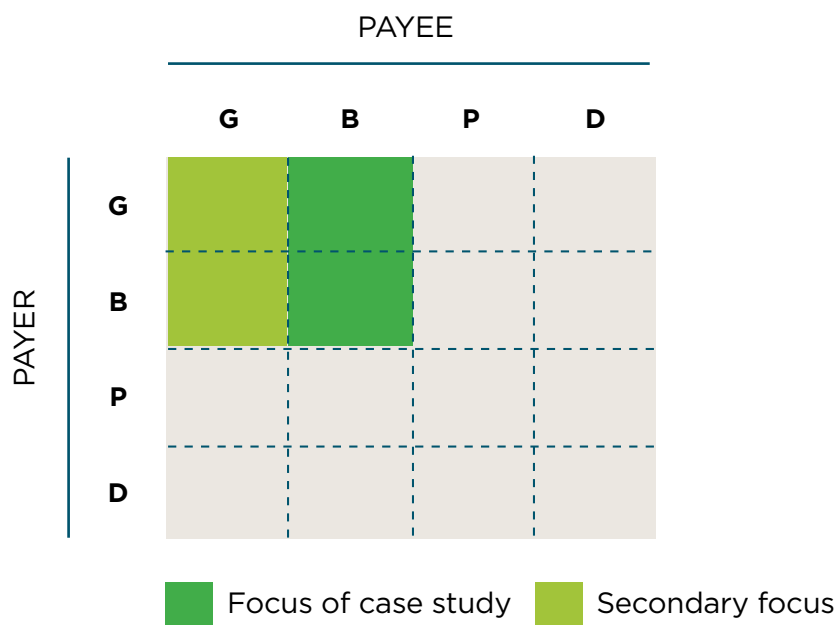
This case study draws on interviews with ACH Colombia's management as well as representatives of PSE's stakeholders and users. The focus of this case is on businesses and individuals as the payers, which complements other BTCA case studies that focused on business and individuals as the recipients of payments.⁵ In fact, private social security operators and private businesses have been the main recipients of payments over PSE, although several government agencies have received payments this way, as well.

Section 2 explains the main attributes of PSE, which can be difficult to understand at first. Section 3 traces the creation of PSE, from the catalytic government policy to the financial sector initiative. Section 4 presents the data on PSE usage and emerging trends. Section 5 highlights some challenges faced by PSE's

implementers and stakeholders that would be relevant to similar efforts in other countries. Section 6 concludes with lessons for governments,

providers, and businesses in other contexts seeking to expand electronic payments where card usage has yet to take hold.

FIGURE 1 Payment grid and focus of case study⁶



G = Government; B = Business; P = Individuals; D = Development partners



2 PSE defined

PSE is a payment platform that enables consumers to pay bills and make purchases online by taking them from the merchant or biller's website to the bank's website, so that they can debit their own bank accounts and credit the seller or biller's bank account at the same moment. PSE is owned and operated by ACH Colombia, the electronic payments clearing house owned by Colombian

banks, and to which almost all banks are connected.

As Figure 2 below shows, when a user visits the website of a government agency or a merchant or biller⁷ (Steps 1 and 2), PSE routes her (Step 3) to her bank's website (not necessarily the merchant's bank) using encrypted channels and digital certificates, where she logs

FIGURE 2 PSE e-payment system



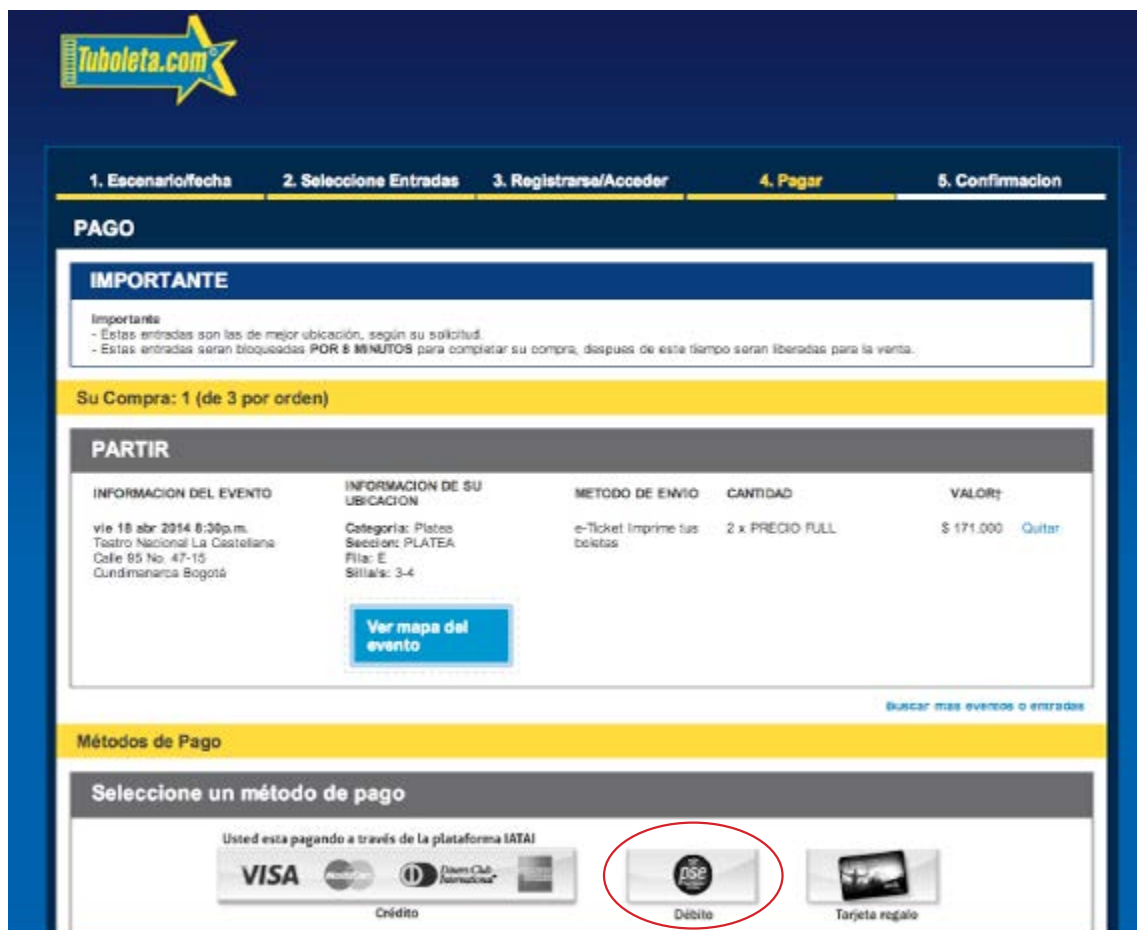
Source: ACH Colombia

in and authorizes a payment of the amount already defined (Step 4). Her bank uses its specific security arrangements to authenticate her as a client and verifies that the funds are available in her account (Step 5). The user is returned to the merchant's website (Step 6) to finalize the purchase (Step 7); and the funds are routed from the user's bank, via ACH transfer, to the merchant's bank (Step

8), which deposits the funds in the merchant's account (Step 9).⁸

PSE payments are so-called "push" transactions, meaning the user initiates and authorizes the instruction directly. This is different from "pull" transactions, such as a payment card or direct debit, where the merchant uses the buyer's card payment details to complete the payment or the user

FIGURE 3 Example of PSE payment options



pre-authorizes a biller to debit her bank account each month (as is now common in the United States).

Though PSE operates on the electronic “rails” provided by ACH Colombia, transactions through PSE differ from other common payment types made through the switch in three related ways:

- The basic difference between ACH transfers and PSE transactions is that the latter start on the vendor’s website for the exact price of the goods or services. From there, the vendor’s website connects to the PSE platform using secured channels that in turn direct the customer to a special secure session in his bank website, where availability of funds is confirmed online and withdrawn to pay the vendor. As soon as this happens, the bank’s special Web session returns the customer to the seller, thus confirming the transaction. This allows the merchant to explicitly identify the transaction, so reconciliation effectively occurs online in real time. This kind of advantage is part of the value proposition of PSE.
- With a typical ACH electronic credit, the payment transaction starts on the client’s website at a different moment from the actual purchase. This means there is no upfront confirmation that the amount transferred matches what is expected or agreed to, since the sender enters the amount. In a credit transfer used for purchases, for example, the merchant would have to make the effort to reconcile and carry the risk (and expense) of frequent over or underpayments.
- A typical ACH transfer would not send a real-time purchase confirmation to both the merchant and consumer. PSE does send this confirmation,⁹ as ACH Colombia clears the payments in real-time; however, the payments are settled in batches (as are typical ACH payments).
- A typical ACH transfer allows the payer to send a small amount of identifying information with the transfer. The amount of information is usually just enough for a customer account number, so this method can be used by utilities to issue bills for services already rendered.¹⁰ In the case of purchases, this may not be enough information to properly identify the consumer and match her with her invoice or bill. So when ACH payments are used, they entail the additional time and risk for the recipient of matching and verifying payments.



3 Creation of PSE

The service described in the previous section was developed by ACH Colombia, the bank-owned private clearing house, in response to government initiatives. Indeed, government policy was instrumental in driving usage in PSE's early years, though more recently the platform has seen increased usage by the business sector.

3.1 Government's policy push

The government of Colombia has been instrumental in promoting and encouraging electronic payments through several initiatives focused on improving public budget control and efficiency, dating back to the mid-1990s. Three government policies, in particular, were key to the development of PSE.

Promoting interoperability

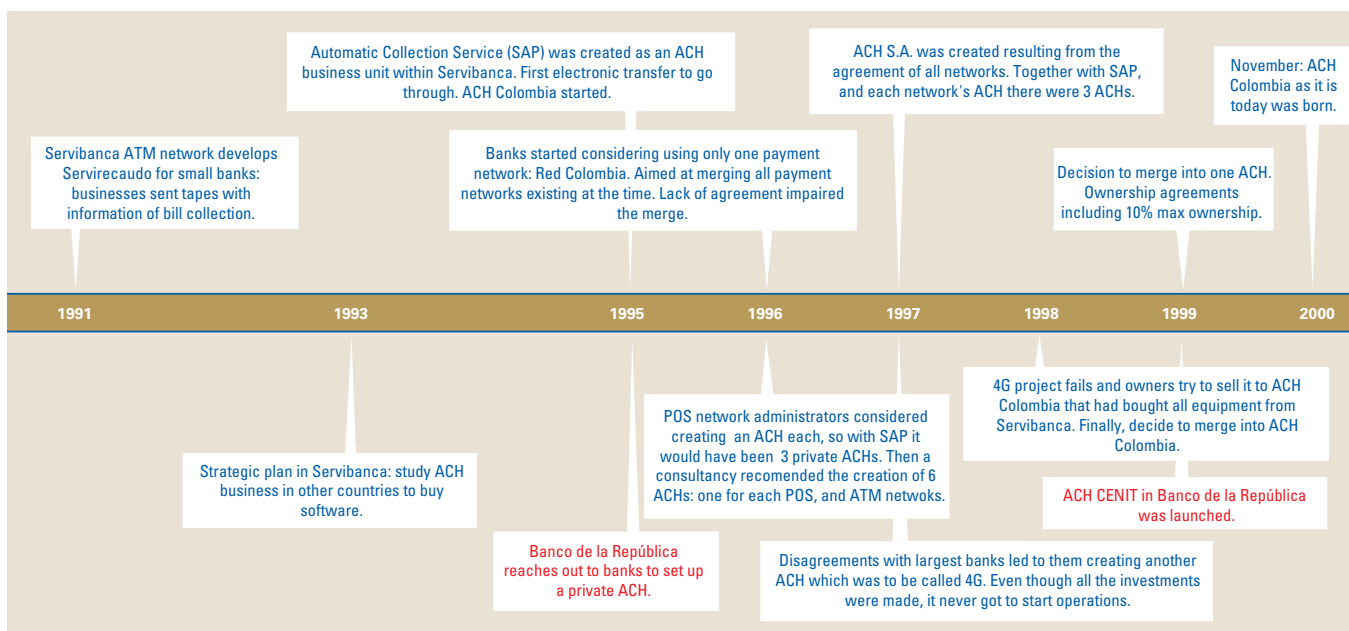
In 1995, the central bank, Banco de la República, spurred by the Treasury and Ministry of Finance's goal of shifting to electronic payments, asked banks to set up an ACH to enable those transactions.

Due to the initial lack of response from the private sector, the central

bank decided to establish its own clearing house.¹¹ Launched in 1999 and called ACH CENIT, it connects the central bank to all private commercial banks, the state-owned Banco Agrario, and other financial institutions such as cooperatives and trust fund companies. Even though CENIT accounts for only 8% of total ACH transactions, both the Treasury and central bank consider it to be important in promoting competition.¹²

Banks initially had difficulties reconciling their divergent interests. On one hand, they were trying to consolidate their card infrastructure to cut costs and increase scale. On the other hand, big banks, which had spent heavily on branches, saw more to lose than did medium- and small-sized banks from establishing an electronic transfer platform. Initially, two private ACHs were created, one by the big banks and the other by the small and medium ones. In 2000, they eventually merged, to form ACH Colombia.¹³

Figure 4 below shows the events leading to ACH Colombia's formation.

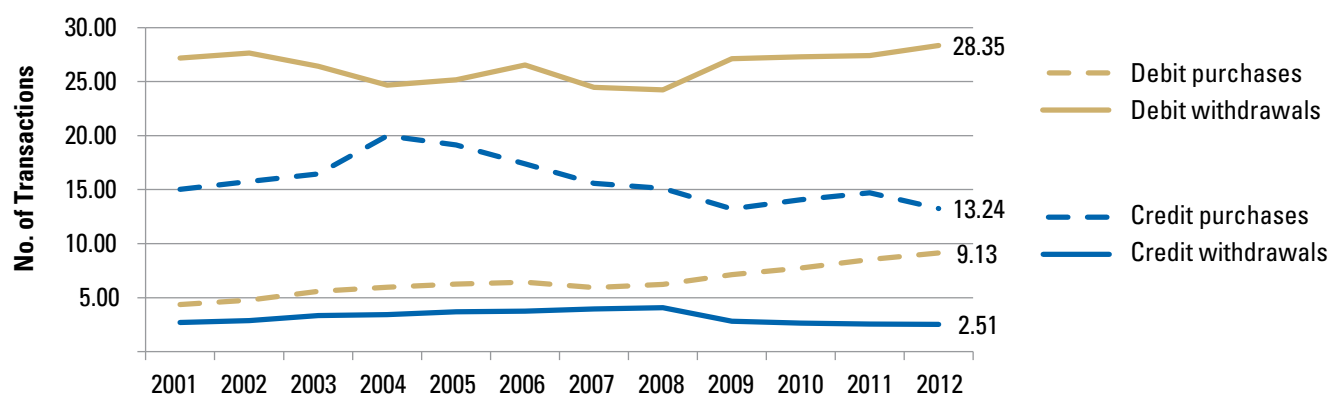
FIGURE 4 Timeline of ACH Colombia milestones

Mandating electronic procurement payments by government

The creation of the public clearing house and then the private clearing house followed the adoption of an integrated financial management information system in the Ministry of Finance (called Sistema Integrado de Información Financiera, or SIIF¹⁴), created by law in 1996.¹⁵ The existence of SIIF enabled the Treasury to order that all payments to government vendors be made directly into their bank accounts — and when CENIT came online, these payments were executed through that switch.¹⁶ This shift to electronic payments provided a model for the use of ACH Colombia by businesses.

Mandating acceptance of online electronic payments by government

In February 2000, the government launched an ambitious public policy initiative to promote the use of information technology to improve government operations, facilitate interaction with citizens, and promote transparency. The “connectivity agenda”¹⁷ mandated the creation of a website¹⁸ “Gobierno en Línea” (or government online) by October 2000. The policy further stipulated that all public entities should launch their own websites by December of 2000, and that by December of the following year, they should provide services through their websites and accept online payments using electronic means.

FIGURE 5 Purchases and withdrawals per card (2011-2012)

Source: Banco de la República, Reporte Sistema de Pagos 2012.
 Excepted from BTCA's Colombia Diagnostic

At the time, each public entity at the federal level used different banks, so any solution to the *Gobierno en Línea* mandate would rely on the interoperability long promoted by the government, in the face of strong market concentration (four banks controlled 57% of deposits in 2000) that would otherwise encourage closed-loop intra-bank systems. Some banks had already developed Web-based payment solutions, which were not interoperable, to facilitate online payments at merchants that were corporate account holders. Lack of interoperability made these closed-loop systems very difficult to sell to businesses since customers had to be clients of the same bank. Still, the predominantly large banks behind these systems would see any new interoperable approach as

competition. Ultimately these banks decided that achieving scale required interoperability, and they accepted and supported the PSE initiative.

Low Internet penetration has been a barrier, too, but penetration more than doubled from 21.8% in 2007 to 48.9% in 2012.¹⁹

3.2 Limits of card payment usage

Whereas in other contexts, debit and credit cards have played a substantial role in fulfilling mandates like *Gobierno en Línea*, in Colombia card usage has been rather modest, although it is increasing. As Figure 5 shows, the main use of debit cards in Colombia has been for cash withdrawals, not purchases, in common with most emerging

markets. Credit cards are used for purchases only slightly more than are debit cards.

This relatively low usage for purchases is despite the fact that debit cards per capita in Colombia increased 2.4 times between 2001 and 2012 (from 0.44 to 0.91), and credit cards per capita increased 5 times in the same time period, from 0.05 to 0.27, ending 2012 with 28.6 million total active cards in the market.²⁰ An important factor limiting credit and debit card usage for Internet purchases has been the unwillingness of individuals to enter their card's information on a merchant's website for security reasons.²¹ Being directed to a bank's website, as PSE does, is perceived as more secure. For businesses, card usage is hindered by the low penetration of corporate credit and debit cards.

A still greater barrier to card usage — and indeed to usage of all electronic payment methods in Colombia — is the low level of financial inclusion. Colombia has made impressive improvements: The number of people with an account at a formal financial institution increased from 15.7 million in 2009 to 21.1 million in 2013 (over half the adult population); but only 42% of adults have active savings accounts.²²

3.3 Financial sector initiative

In this context, the banks, through ACH Colombia, sought to create a new electronic platform. The banking sector

saw a clear business opportunity to build on ACH Colombia's existing infrastructure and develop an online e-payment system that would meet the government's needs without having to pay card franchises' fees. The banks were also afraid the government would look elsewhere for a solution — like it had done by developing CENIT while the banks stalled on ACH Colombia — and this approach was indeed contemplated at the government level, according to interviews.

Solving the challenges posed by the requirements of the new model took nearly three years (2001-2003) of discussions within the banking sector. These negotiations were helped by the sector's experience with the merger that led to ACH Colombia and the 1990s negotiations on interoperability between the two low-value payment operators (originally owned by different banks), one exclusively working for Visa, Credibanco, and the other one operating for MasterCard, Redeban.

To get ideas for PSE's design, ACH Colombia staff looked at similar initiatives in Brazil and travelled there to meet with a software company that had helped a local bank design a service for online purchases. Based on the basic concept of a Web service provider, beginning in 2004 ACH Colombia worked with its own technology provider to design a custom

product. PSE had to adapt an online payment platform designed mainly for government bill and fees payments, which evolved to allow purchases online.

Once PSE was designed, the next technological challenge was developing secure interfaces with banks', government, and businesses' websites. This challenge explains the time that elapsed between PSE's original launch (2005) and the time that all banks were connected and using PSE (2009-2010). By 2013 only state-owned Banco Agrario had not implemented PSE, since it was not a member of ACH Colombia (it uses only CENIT). The attraction of being able to receive deposits as guarantees in legal proceedings ("judicial deposits"²³) using PSE finally encouraged Banco Agrario to join ACH Colombia effective 2014.²⁴ The technical challenges faced by Banco Agrario in using PSE have slowed down its ability to start using the service, to the point that ACH Colombia is supporting the bank in designing and developing the necessary adjustments to its platform.

In the first years of ACH Colombia's operations, transaction volumes were low, and member banks were concerned that switching fees alone would not make ACH Colombia sustainable. In response, the banks

decided to impose a fixed monthly fee, regardless of actual usage, in a tiered structure based on each bank's transactional volume. The resources this monthly fee provided gave ACH Colombia the financial independence to invest in the development of PSE — and the investment requirements were not an issue, as the members of the Board at the time recalled.²⁵ PSE's start-up and operating costs were funded out of ACH Colombia's revenues and did not require additional contributions from ACH Colombia's member banks.

The main negotiations were not about technology. Finding the correct incentives for all participants was not easy, and negotiations over the acquiring model to be used — in other words, who would be responsible for signing up merchants to use PSE — generated tensions. On the one hand, banks that had a large share of deposits and were large issuers of debit cards to their accountholders worried that PSE would bring competition (cutting into the interchange fees the banks received from acquiring banks). On the other hand, banks that had many merchant clients and profitable acquiring businesses worried that their clients would increasingly migrate toward online debit payments using PSE and away from accepting card payments online; merchant discount fees were misaligned.

After long discussions, the banks decided to simply replicate the card industry business model: an acquiring bank (the payee's bank), an issuing bank (the payer's bank), and the requisite infrastructure for switching, clearing, and settlement (managed by ACH Colombia).

The final fee structure for PSE is somewhat more complicated, but in terms of rates, it was designed explicitly to mirror the costs of cards for purchases — so as not to favor PSE over cards or vice versa — and to mirror the costs of other payment mechanisms (like cash and checks) for bill payments. Regardless of the type of transaction involved, banks would pay a fixed fee of around US\$0.42 per PSE transaction, which includes PSE fees and interbank fees.

For purchases, just like when paying with cards, the acquiring bank would pay a fee to the issuing bank to encourage banks with large deposit bases to promote usage of the service. Merchant discount rates were set equivalent to those of other available payment mechanisms, such as debit cards, which range between 1% and 5% of the value of each transaction.

In the case of bill and fees collection, since banks use different fee arrangements, alternative mechanisms are used: In some cases they would charge a fixed fee per transaction (the levels mentioned

in the interviews ranged around US\$0.50) and in others would agree to leave a certain balance derived from payments as float for a certain number of days. Some banks also set minimum and maximum fees, ranging from US\$0.40 to US\$8.40. These fees are proportionally higher for low-value bill payments, thus discouraging those kinds of transactions through PSE. (The banks are currently discussing this issue.)

After some early hesitancy, especially on behalf of the big banks, by the time of the launch, the banking sector had come to terms with the scale and network benefits of interoperability — and had largely balanced the business case incentives for PSE against the other payment mechanisms on offer.

3.4 The government again steps in to push

Unfortunately, just as ACH Colombia and its member banks were addressing the technical and financial barriers to implementing PSE, the government's "Connectivity Agenda" ground to a halt when a new government took office in 2002. By then, most of the changes were in place, but public entities did not prioritize receiving payments electronically through their websites.

ACH Colombia needed to find alternatives to promote the usage of PSE. Even though ACH Colombia had already begun to encourage

Box A The complex social security system

In the social security system in Colombia, private and public providers coexist under government regulations.

The pension system was reformed in the mid-1990s. Today, a private savings model (based on individual savings accounts and managed by five funds) coexists with a public solidarity fund, and workers are allowed to choose between them. Health social security was reformed in 2002 and allows private and public providers, called *Empresas Promotoras de Salud* (EPS), to operate as insurers; workers can choose between 24 of these providers. In addition, employers have to contribute to professional risk insurance (they can choose between 10 insurance companies).

Until 2006, employers had to fill out one form per provider and pay each one independently, which could mean processing 10-15 forms and payments each month for all types of social security contributions. Payments had to be made through institutions (mainly banks) approved to collect social security contributions, as well as the low-value payment systems.

By mid-2008, once the PILA unified format was implemented, 390,000 social security contributions were processed in electronic form; by 2012 that had increased to 2.2 million unified formats (called *planillas*) every month, which represent the contributions of 9.2 million workers.

e-commerce, it was a government initiative that gave PSE a significant push forward.

Social security contributions

The push came in the form of social security contributions, which businesses must pay on behalf of their employees, as must the self-employed. This push is cited by many as a turning point for electronic payments generally, not only for PSE, in Colombia.

Again, the timing was fortuitous. At the end of 2004, the Ministry of Social Protection issued a decree²⁶ aimed at creating a unified electronic platform that would calculate social

security contributions and facilitate the electronic payment of those contributions. The platform, Planilla Integrada de Liquidación de Aportes (PILA), would interface with the various operators for health and pension payments (see Box A).

The initial goal was to roll out PILA, which would accept payments through PSE, by February 2005. However, the system's technical complexity forced delays, and the deadline was extended to June of that year, largely due to the difficulties of creating the information systems that calculated and processed the social security

FIGURE 6 PILA and PSE connection



Source: ACH Colombia

contributions and then assigned them to each of the participating institutions.²⁷

ACH Colombia needed to build another platform alongside PSE to manage this task. The platform it developed, called SOI,²⁸ offered PSE as a payment mechanism for all operators of social security contributions.²⁹

For PSE, PILA plays the role of one “merchant,” receiving one payment from each employer; that payment is then divided and disbursed into each social security provider using ACH transfers.

By integrating PSE and SOI, banks offered a comprehensive solution, allowing individuals (P2B) and businesses on behalf of their employees (B2B) to make all social contribution e-payments gathered into a single PSE payment. On the back-end, ACH Colombia transfers allocate the contributions corresponding to each person (individuals and employees) into the social security companies’ bank accounts.

As of 2012, an average PILA e-payment contribution to the social security system using PSE generated 5.21 ACH transfers to the accounts of each social security operator. This

means that by the end of 2012, the 6.4 million annual PSE transactions made by SOI and other social security information operators translated into 33.3 million ACH transfers — a big increase in the volume of electronic payments. According to BTCA's country diagnostic of Colombia, an estimated 80% of all social security contributions on behalf of employees (calculated over the number of workers that contribute on average) were paid electronically by September 2013.³⁰

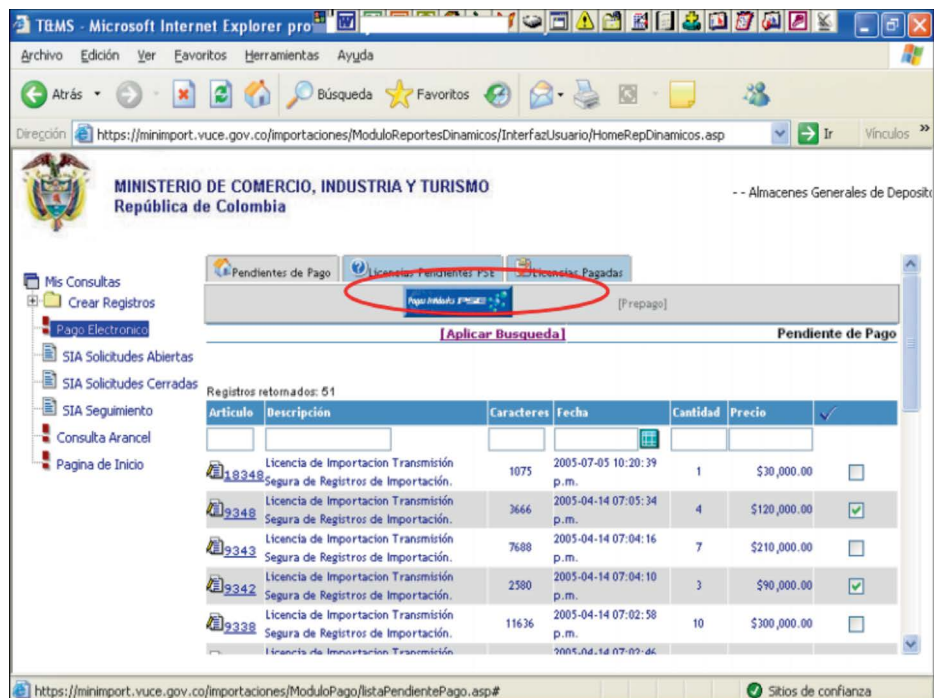
Not only did the development of PILA allow PSE to reach large scale, because businesses were forced to use PILA, but also employers and employees learned the PSE system and developed trust in electronic payment mechanisms.

Foreign trade fees

Following soon after PILA's rollout, another government entity adopted PSE to receive payments. The *Ventanilla Unica de Comercio Exterior* (Single Window for Foreign Trade, or VUCE for its acronym in Spanish) is a Web-based platform that allows electronic processing of the permits and authorizations required to carry out foreign trade operations in Colombia.³¹

VUCE, launched by the Ministry of Commerce, Industry and Tourism in 2002, was one of the few government initiatives to gain momentum before the change of government; it went into effect in 2005. VUCE connects 21 public agencies related to foreign trade and three private companies that process e-signature certificates, as well as information on registered traders. An average of approximately 9,480



FIGURE 7 PSE option on the VUCE website

Source: ACH Colombia

monthly VUCE transactions are now made through PSE. As of 2014, 99% of all VUCE transactions were electronic using PSE.

Though payments to government agencies (person- or business-to-government, P2G or B2G) other than PILA were the impetus for the creation of PSE, these services were hampered by a lack of consistency and persistence from the government.

3.5 Merchants and billers emerge as major PSE users

As the public sector's interest in promoting online electronic

payments waned (aside from the partnership of PILA and PSE), banks and ACH Colombia identified the potential for using PSE in e-commerce transactions.³²

Hosting service providers³³ and e-payment gateways, called *pasarelas*,³⁴ played an important role in accelerating merchants' adoption of PSE. Web-hosting companies helped businesses with a diversity of e-commerce services, from hosting an information-only website, to more complex services, such as billing administration and database management, and

FIGURE 8 Web hosting and e-payment gateways

Source: ACH Colombia

connecting businesses individually to PSE. E-payment gateways, on the other hand, provided an aggregation service, whereby several businesses would be connected to PSE under a single connection. Gateways typically give customers the choice of several payment methods, among them PSE.

These technology companies played an important role in linking businesses to PSE and making them aware of the system's benefits.³⁵ These companies were very successful in sourcing new businesses as merchants in unusual places: Even before large companies like telcos, airlines, or public utility

companies, the first businesses interested in using PSE were private schools, which may not have sought out a payment provider on their own.

Both types of service provider not only reduce the initial investment merchants must make,³⁶ they also facilitate the management, maintenance, and administration of payments. In the case of pasarelas, since they act as aggregators, they may also offer lower merchant discounts, since they negotiate in volume with the acquiring banks to reduce these rates, part of which is the margin in their operation.



4 Usage of PSE and emerging trends

The majority of the payments made in Colombia are still made in cash: The BTCA diagnostic estimated that 828 million payments are made every month (by government, businesses, and individuals), and of those only 9.7% are made through electronic means.

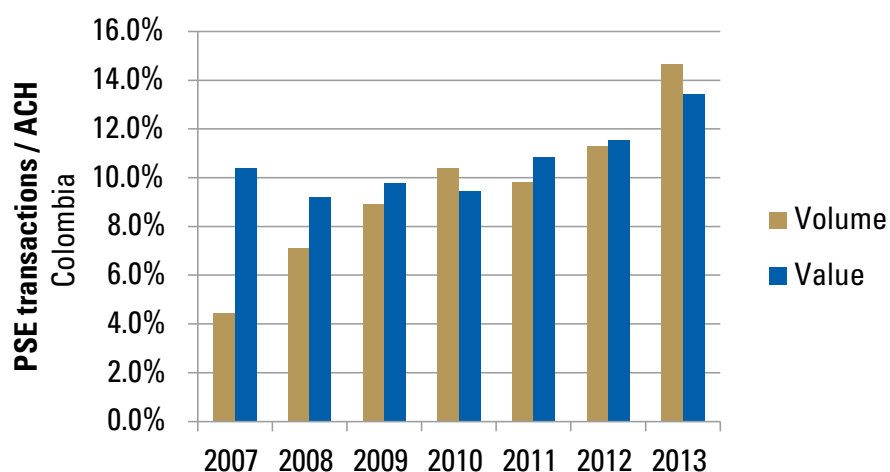
Electronic transactions have increased as a share of total transactions: Those involving electronic payments (including Internet, ACH, IVR, and POS) increased from 28% to 34% between 2009 and 2012. The increased share of Web-based

transactions (Internet and ACH) is partly attributable to PSE.

Total ACH transactions increased almost six-fold from 20.3 million per year in 2005 to 116 million by 2012, and by value almost five-fold from US\$54 billion to US\$246 billion – annual growth rates of 67% and 65%.³⁷

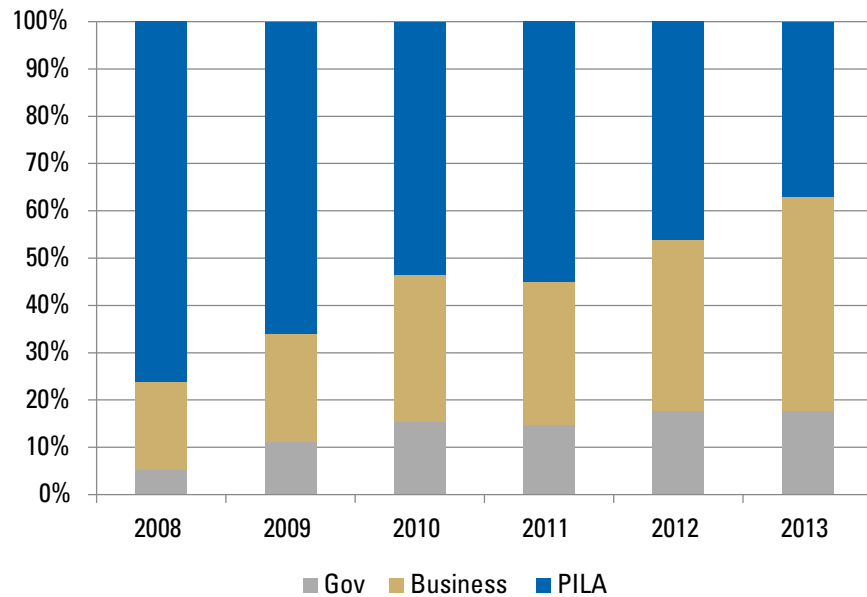
Even with that growth, the percentage of ACH transactions initiated through PSE has increased nearly every year: from 4% of ACH Colombia transaction volume in 2007 to 14.5% in 2013.

FIGURE 9 Transactions using PSE as a percentage of total ACH Colombia transactions



Source: ACH Colombia

FIGURE 10 PSE’s annual transactions by volume



Source: ACH Colombia

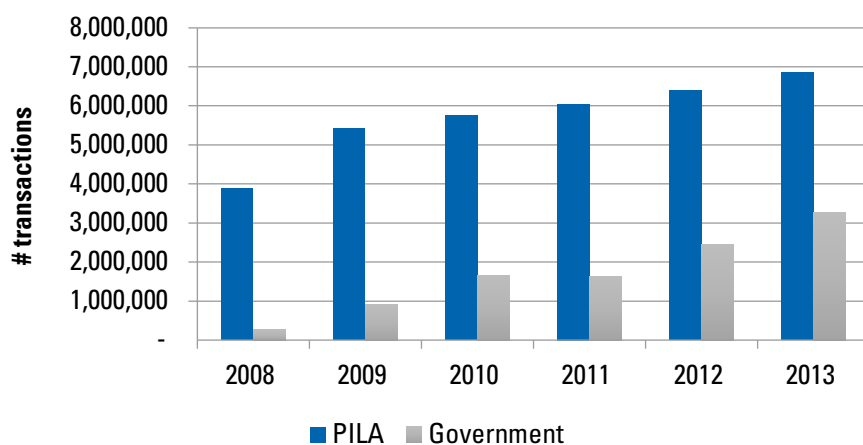
4.1 Payments to merchants are increasing more quickly than payments to government

In PSE’s early days, social security contributions were the predominant payment type over the system. Though those payments, and payments to government agencies, continue to grow in volume, payments to private businesses make up an increasing share of PSE’s transactions. By the end of 2012, business transactions nearly equaled social security contributions by volume, and

in 2013 for the first time there were more payments to businesses.

By value, though, social security contributions still make up the biggest share. PSE transactions totaled US\$35.4 billion as of 2013, of which PILA represents about 70%, down from 95% in 2008.

Part of the slowing growth in payments to government using PSE can be explained by the level of complexity. For example, the Federal Tax Administration

FIGURE 11 Volume of payments to government over PSE

Source: ACH Colombia

(*Dirección de Impuestos y Aduanas Nacionales*, or DIAN) has developed an online tax assessment and payment platform. But it has strict requirements: The citizen needs to be pre-registered and to have previously registered an electronic signature. So ACH Colombia had to develop another special module to facilitate interaction with DIAN's systems. Further complicating matters, although PSE allows interoperability among banks and other financial institutions, the bill collection agreements that each public entity reaches with some banks can be obstacles. For example, DIAN has collection agreements with only certain banks; therefore citizens' ability to pay taxes online is constrained to an

even smaller sample than the banked population. The BTCA diagnostic estimated that only 30% of individual taxes and 40% of business taxes by volume were paid electronically in 2012.

Challenges defining an adequate tariff structure also may have slowed government usage of PSE. For example, the most important local government using PSE, the Secretary of Finance of the city of Bogotá (Secretaría de Hacienda de Bogotá, or SHD), developed a platform in-house to link to PSE in 2007 because it was convinced of the benefits of reducing cash. But as of 2013 only 50% of transactions

were made electronically, in part because some banks have resisted being compensated through float commitments rather than per-transaction fees, and have not allowed their account holders to pay them through PSE. The city treasury also faces technical challenges accommodating the flood of transactions its system must handle as the tax deadline approaches. This has overloaded the SHD website and caused it to lock out some users.

Still, some public entities seem to be pressing for more electronic payments. For example, the entity in charge of property registries and other types of small certification procedures (*Superintendencia de Notariado y Registro*, or Superintendency of Notaries and Registration) offers a 6% discount for payments made online instead of in person.

4.2 Businesses payments over PSE are now high by volume, but not yet by value

In 2013, private businesses — 3,996 are now using PSE — accounted for almost half (45%) of PSE transactions by volume although only an eighth (12%) by value. This means these business transactions tend to have lower values (US\$500 on average, which is consistent with individual purchases and bill collection) than PILA or government payments. Private

and government entities received 975,227 monthly payments in 2013, an impressive increase since 2008's monthly average of 78,000.

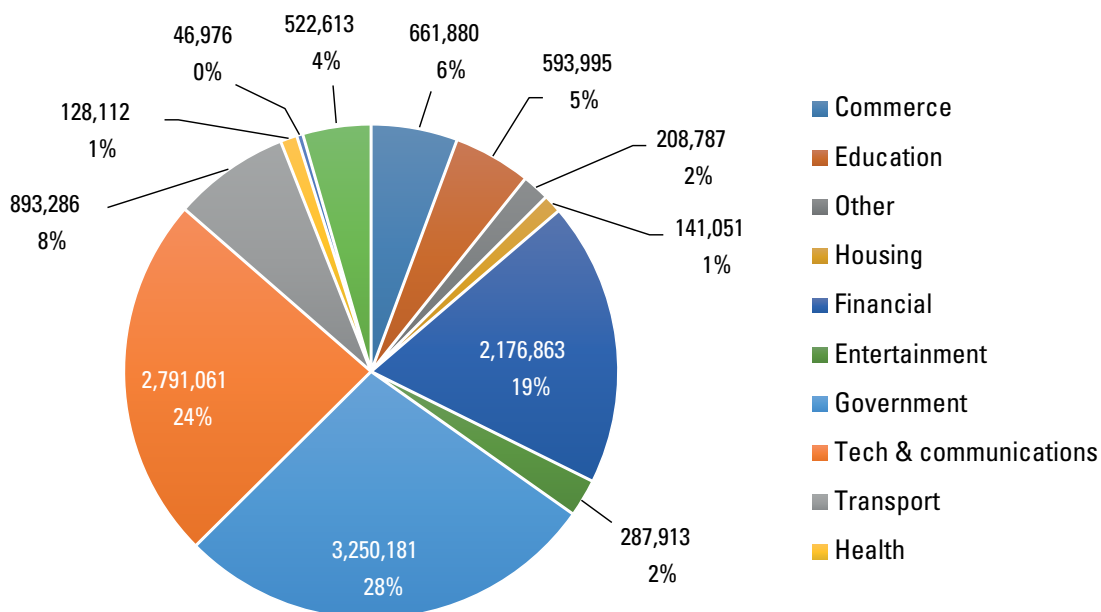
Total PSE transactions made to private businesses in 2013 reached US\$4.2 billion — by volume, 73% came from bill collection and 23% from purchases. However, the potential for further growth in purchases is promising; it is estimated that there are between 3 and 4 million online buyers in Colombia³⁸ with purchases already worth US\$3 billion.

Though they were not the first to take advantage of PSE, telcos and communications companies now make up the largest sector of PSE users.

For large companies like Telefónica, PSE has reduced costs for bill collection, compared to other channels including in-person payments at company outlets. Telefónica first accepted bill payments through PSE directly, but the need to offer new services to its customers, without diverting resources from its core business, led the company to switch to an e-payments gateway. This switch gives Telefónica more flexibility in accepting payment for mobile devices and phone lines.

A business's decision to accept payment over PSE takes many factors into account. According to an e-payment gateway that services

FIGURE 12 Number of PSE transactions by sector (2013)



Source: ACH Colombia

theatre ticket-sellers, its clients like PSE because it ensures that the purchaser’s funds are available at the time of purchase — unlike with credit cards. (From the payer’s point of view, PSE and debit cards are more comparable to cash payments, according to interviews with PSE merchants.)

Furthermore, businesses that issue bills do not have to have an account

at all of their customers’ banks to receive payments; through PSE they can accept payments from any bank. PSE also gives businesses control over the amount paid, since the transaction originates on their website, reducing mistakes and the need to confirm the funds match an actual sale or invoice. And, once funds are confirmed, the PSE transaction cannot be charged back, thus strengthening businesses’ trust in the system.

4.3 Banks offering e-payment services to save costs

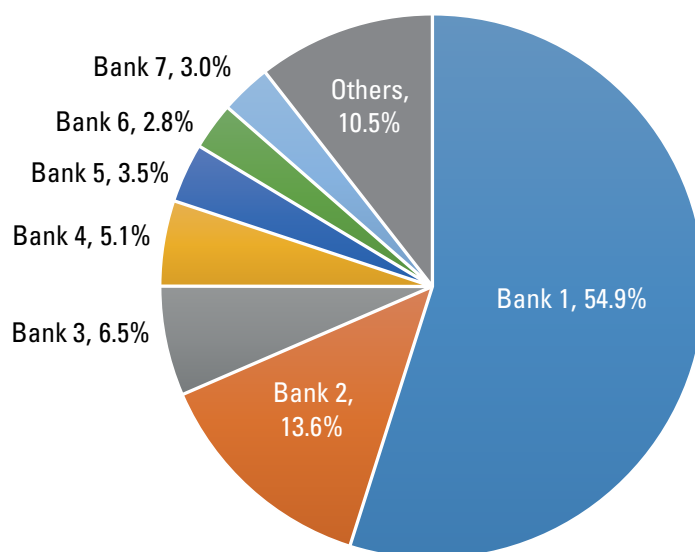
To make a profit from their PSE services and to increase usage of PSE by their corporate clients, many banks have developed special products, including:

- **Web-hosting services:** ACH Colombia manages websites offered by some banks, linking the bank's website to the business's website. According to those interviewed, this kind of service may cost US\$94 a month plus US\$0.52 to US\$0.63 per transaction.³⁹
- **E-payment gateways (*pasarelas*):** Some banks offer websites to allow different businesses to sell their goods and services or even collect bills, using PSE. For example, Banco de Occidente, BBVA, and Colpatría offer websites that allow their clients to receive payments using PSE from any bank, without the need to even have individual websites.⁴⁰
- **Including PSE's link on businesses' websites:** For this service, businesses pay a fixed fee per transaction to the bank, most often in the case of bill collection, though sometimes the agreement includes leaving funds in the bank for a certain period of time (called *reciprocidad* in Spanish).

Not all banks have developed their own platforms to deliver these services; some use hosting companies, as they have faced difficulties of their own in interfacing with PSE.

According to banks interviewed for this case, in comparison to other bill collection mechanisms available in the financial system, PSE has the lowest cost from the bank's point of view: When a bank's corporate client accepts a bill payment in cash through the bank's branch network, each transaction may cost the bank US\$1.30, whereas the cost to the bank of a client using PSE ranges from US\$0.30 to US\$0.40. For banks, PSE reduces the use of branches. Some banks are beginning to use PSE themselves, in their role as billers for loan repayments from their debtors.⁴¹

Not surprisingly, PSE transactions are concentrated in a few big banks. Bank 1 (individual bank names have been withheld at the request of ACH Colombia) is clearly the dominant player. The top two banks accounted for almost 68% of total transactions as of 2013, which corresponds to their dominance of the market for bank deposits: Combined, these two also had 66% of the total deposits (savings accounts and checking accounts).

FIGURE 13 Banks' shares of total PSE transactions by volume (2013)

Source: ACH Colombia

4.4 Hosting services and e-payment gateways are also playing a greater role

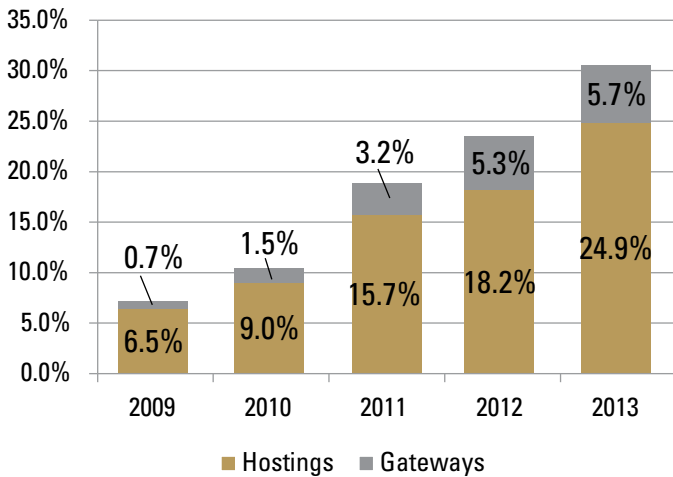
PSE transactions through Web-hosting service providers and e-payment gateways have been increasing in importance: By the end of 2013, 24.9% of PSE transactions were initiated using Web-hosting companies while e-payment gateways, provided mainly by five banks and companies,⁴² accounted for almost 6% of PSE transactions.

As discussed above, Web-hosting services have greatly helped increase the number of companies

using PSE both for sales and bill collection. Since 2009, the number of businesses using Web-hosting services to make PSE transactions has increased almost five times: As of 2013, 39% of businesses (private and public) using PSE relied on hosting and other e-payment service providers.

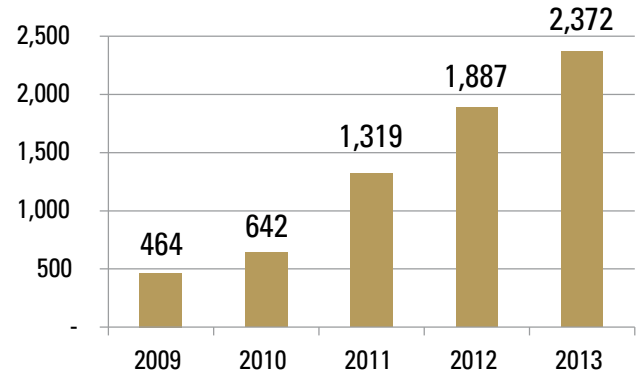
Web-hosting and e-payment gateways charge businesses a fixed value plus fees per transaction that may decrease as value per transaction increases. Fixed fees charged by one of the pasarelas interviewed for this case are

FIGURE 14 Transactions originated by hosting companies or payment gateways, as a share of total PSE transactions



Source: ACH Colombia

FIGURE 15 Number of businesses using Web-hosting services



Source: ACH Colombia

approximately US\$0.50, plus per-transaction fees ranging from 3.5% of value for transactions over US\$52,241 to 4.5% for transactions below US\$2,612. The lowest total charges are estimated to be 5.2% of the transaction value. But if transactions have very low values, the rates are higher; for transactions less than US\$15.67, fees are US\$0.26, plus 8%.

Just as banks have entered the marketplace for hosting, ACH Colombia launched its own hosting

service in 2010, called PSE Hosting. This allowed ACH Colombia to compete with these third parties and drive down prices for hosting, helping lower the costs of using PSE for businesses. This in turn has encouraged hosting companies to offer even more services to clients. And because of the importance of PSE to these companies' business, ACH Colombia has sought to have them pay for some of PSE's costs (like ACH Colombia's member banks do).

5 Challenges relevant to other contexts

The above sections have described the outcomes particular to the Colombian context. Policymakers and providers in other countries, however, are likely to face challenges in planning and implementation similar to those faced by ACH Colombia's PSE project.

One of these challenges is certain to be the technical complexity in connecting a wide variety of bank payment platforms to one central system. These challenges also apply to merchants (especially smaller ones), for whom managing and upgrading technology can be difficult and expensive, often requiring an outside hosting service.

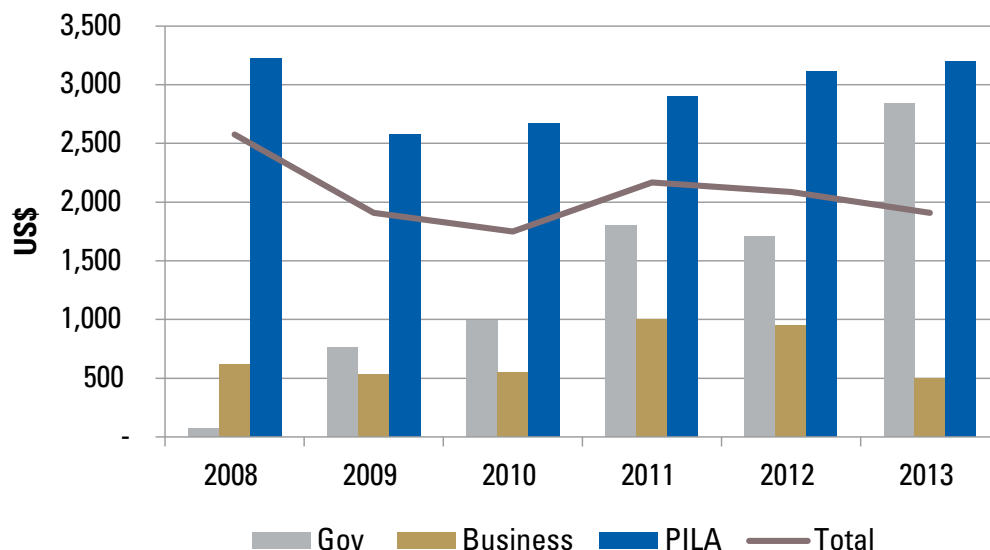
Even though fees were set on par with those for cards and other

methods for bill collection, it is not clear that PSE's fee structure is properly incentivizing merchants and bill collectors to accept payments with PSE, which could slow its growth rate in the future. (Recall the discussion of PSE's fixed per-transaction rate for bill collection, particularly affecting low-value bills, where a US\$5.20 bill could carry a fee of US\$0.50.)

This may explain why overall average transaction size using PSE has remained around US\$1,908 — well above the values that would displace the most common cash transaction.⁴³ And PSE may not compete with cards in all cases, either; checks are the most likely alternative for utility bills and tax payments.



FIGURE 16 Annual average transaction value per user over PSE



Source: ACH Colombia

One option being explored to make acquiring more attractive is to charge part of the cost to the payer, as well as to the payee (merchant), differentiating clearly the cost of collecting payments in cash vis-a-vis electronically. In Colombia though, this is not allowed in the case of utility payments, since public service providers argue that they are forbidden by regulation from increasing the cost to clients.

Like people in other countries with a large informal sector, Colombians exhibit a high preference for cash in most day-to-day transactions,

in part because of the anonymity cash provides. Large companies interviewed that receive low-value payments still do so in cash in their offices or even in bank branches. In Colombia, this challenge is compounded by a tax on withdrawals from the formal financial system, an issue explored in detail in the BTCA Colombia diagnostic.

Another challenge PSE has faced is that, while businesses make 2.4 million monthly utility payments (valued at US\$ 308 million) electronically, through the PSE system or directly through banks' websites, individuals make only

an estimated 2% of the 34 million utility payments (9.7% of the US\$501 million in value) by electronic means. This is likely to change due to shifting demographics; 47% of Internet users already buy online.⁴⁴ Estimates by the E-Commerce Chamber of Colombia indicate that by 2012, purchases online tripled over the level in 2010, and for 2013, growth reached 40%.

Lastly, in common with all electronic payment instruments, PSE has encountered some instances of fraud. According to ACH Colombia, as of 2013, fraud claims were highly concentrated in social security contributions and taxes, neither

of which can be easily reversed, a burden for billers.

Though all stakeholders are concerned about this issue, not all are willing to take responsibility. Utilities and businesses think the banks should be held responsible because the fraud is initiated on their websites as it occurs due to identity and bank password theft, while banks say businesses should be more careful in verifying the identity of the payer. In any system like this, charge-back rules need to be harmonized so that fraudulent behavior does not have negative consequences, and systems for handling disputes need to provide a fair allocation of responsibilities and costs.



6 Lessons learned

Drawing on these challenges, governments, providers, and businesses in other contexts should follow the lessons below to maximize the chances of success for an online credit transfer platform.

6.1 For government

1 A long-term policy commitment can spur financial service providers to develop effective, efficient payment products.

The Colombian government was a constant presence in the development of ACH Colombia in general and PSE specifically. When the push toward e-government flagged on the policy side, it was taken up by the payment regulators. The creation of PSE was driven in part by banks' fear of losing out in the market for electronic payments, although the central bank was itself a direct advocate and supporter of clearing houses as a bank-driven solution.

A consistent policy from the government is key in sending the private sector (merchants and banks) a clear message that it will maintain the conditions necessary to justify long-term investments in new e-payment instruments and systems. The Colombian case also shows the need to involve all levels of the public sector, especially local governments, to promote the scale necessary for long-term sustainability of electronic payments.

This consistency broke down in Colombia. The government did not fully enforce its rule ordering all public institutions to use electronic payment systems to collect taxes, so public sector agencies were left at liberty to make different kinds of arrangements and negotiate individually with each bank, disrupting the main concept of a successful e-payment system, multi-bank, multi-client.

2 Government mandates can be effective in driving usage of electronic payments.

Requiring the public sector to accept only electronic payments also serves the purpose of forcing the general public to adopt e-payments. Because at the outset, all social security payments were to be made electronically, the PILA policy forced people and businesses to start making e-payments and was vital in spreading awareness of PSE. However, not all people had bank accounts or Internet access, and not all of those who did knew how to use online payments systems. Though the Ministry of Health had to pull back from the electronic mandate and create another option within the electronic PILA that allowed people to make payments in cash, the majority of payments had to be electronic.⁴⁵

Many of the providers and users interviewed for this case said that, despite the relatively modest values involved, linking PILA to PSE was an important factor in promoting electronic payments because it built consumer trust in the system and instilled payment habits that could be applied to new services offered through PSE. Customer confidence, combined with the addition of new services, has enabled PSE to increase not only in absolute terms but also to represent a higher proportion of total transactions made by ACH Colombia: Starting from 4% in 2007, by 2012 it represented 12% of total transactions cleared through the switch.

Building confidence has been one of the key factors in the government's push to use PSE and other e-payment mechanisms. In addition, all the technological mechanisms that had been developed over the years to avoid mistakes and address discrepancies have had a positive demonstration effect on day-to-day e-payment users.

3 This kind of platform can be leveraged to promote electronic payments, once a financial inclusion strategy is in place.

PSE usage is limited to those with bank accounts. To further expand usage, and deepen the system's benefits, the government must have an active financial inclusion strategy that helps overcome limits on access to, and usage of, financial products. The financial inclusion strategy needs to address and tackle the reasons why usage of financial products remains low, deterring or preventing people from using e-payments. This issue is now identified as part of the Colombian financial inclusion strategy.⁴⁶

PSE's ultimate barrier is reaching customers without bank accounts. Some banks and businesses are trying to overcome this by issuing electronic invoices that can be paid later in a branch. Obviously this is a half-measure and eventually involves cash, but at least it can serve as a vehicle to inform people about electronic

payment mechanisms. Even people with accounts are not all willing to use electronic mechanisms. Introducing PSE to customers not using PILA (employees whose contributions to social security system are made by their employers) has been quite difficult.

6.2 For providers and businesses

1 The interface between PSE and its merchant users is not easy for banks to develop and offer alone.

Hosting-service providers linking businesses to PSE were vital to the development and consolidation of the system by helping banks overcome the technical problem of connecting to PSE. Government, businesses, and even banks found this kind of service very useful to avoid using their own scarce internal resources and manpower to develop and update something they don't see as a core business. As those interviewed mentioned, in the absence of these providers, it would have been much more difficult for PSE to gain traction with businesses.

2 The business model needs to incentivize usage by merchants for both high- and low-value payments.

PSE was designed to facilitate payments of both purchases and bills — payment streams that entail different payment behaviors, average values, and processes. The fee structure has to allow for both types of transactions.

It is not clear how the business case for users of PSE will evolve and how they will perceive and stimulate the usage of PSE compared with card payments in card-not-present transactions. The initial decision by the members of ACH Colombia to recreate the card sector's business model may need to change. With PSE, after all, the banks do not have to pay franchise fees to the card networks, so the end-user cost could be lower.

Transaction fees would need to decline to make lower-value transactions attractive. To do this, all the factors affecting price structure must be addressed, including lowering operational costs, strengthening information, and developing value-added services.

3 Potentially opposing interests have to be reconciled.

Finally, the case of PSE shows that the success of an interoperable e-payment system depends on a deep understanding of all the interests and market positions of providers and users alike. This is needed to reach agreements that allow for the alignment of often conflicting interests around the general benefit of having an e-payment system that reduces costs and increases efficiency for the market and consumers.

ANNEX A: LIST OF ACRONYMS

ACH	Automated Clearing house
ACH CENIT	Banco de las República's ACH
ATM	Automated Teller Machine
BR	Banco de la República
DIAN	Dirección de Impuestos y Aduanas Nacionales
EPS	Empresas Promotoras de Salud
IVR	Interactive Voice Response
OBPeP	Online Bill Presentment and Electronic Payment
PILA	Planilla Integrada de Liquidación de Aportes
POS	Point of Sale
PSE	Pagos Seguros en Línea
SIIF	Sistema Integrado de Información Financiera
SOI	ACH Colombia social security information operator
VUCE	Ventanilla Unica de Comercio Exterior

ANNEX B: INTERVIEWEES

Name	Title	Organization
Gustavo Vega	President	ACH Colombia
Rodolfo Serna	Former Board Member	ACH Colombia
Augusto Restrepo	Former Board Member	ACH Colombia
Carolina Merlano	Director Payment Systems	Banco de la República
Juan Carlos Andrade	Transactional Services Colombia - Executive Director	BBVA
Carlos Adolfo Valencia	Electronic Channels Manager	Banco de Occidente
Sandra Flórez	E-Service Online Channel	Movistar/Telefónica
Erika Maldonado	E-Service Online Channel Manager	Movistar/Telefónica
Nicolás Revollo	Technology Director	TuBoleta
Edilson garzón	System Administrator	TuBoleta
Ruffo Pinilla	General Director	Avisor Technologies
Nasly Jennifer Ruiz	District Treasurer	Secretaría de Hacienda de Bogotá
Jackeline Angel	Electronic Operations Manager e-Business	Avianca
Carlos Andrés Rodríguez	Cash Management	Bancolombia

End Notes

- 1 BTCA country diagnostic of Colombia, 2013.
- 2 In Colombia there is no explicit legal framework for payments, but since 2005 all “low payment systems” (defined as payment platforms which interconnect more than 3 financial institutions and undertake transactions of less than a daily average of US\$ 1,800 million) are regulated by the Ministry of Finance and supervised by the Financial Superintendence (Decree 1400 de 2005). Specific regulations on operational risk and AML are applicable for this type of institution.
- 3 Better Than Cash Alliance (2012), *The Journey Toward ‘Cash Lite’*, available at <http://betterthancash.org/wp-content/uploads/2012/09/BetterThanCashAlliance-JourneyTowardCashLite.pdf>.
- 4 As the case study explains, these payments are mostly business-to-business: employers making government-mandated social security contributions on behalf of their employees to private social security operators.
- 5 See <http://betterthancash.org/resources/publications/#BTCA>.
- 6 G: Government. B: Business (non-financial private sector). P: Person (individuals). D: Development community partner. For further explanation of the payment grid, see *The Journey Toward ‘Cash Lite’*.
- 7 Unless otherwise noted, “merchant” will also refer to government entities accepting payment over PSE. The technical underpinnings of the transaction are no different.
- 8 All ACH Colombia transactions are based on ISO 270001, 2005 standards.
- 9 Credit and debit card purchases, when used online, would also generate a confirmation message. Cash and checks, when presented in person, would, too; because merchants and consumers value this notification, electronic payment instruments need to provide it to compete with cash and checks. It is especially valuable for high-value purchases like airline tickets.
- 10 ACH transfers can also be used in utility bill payments, but these bill payments are conducted after a service has been rendered, and the provider has issued a bill (or invoice), normally on a big scale, requesting payment by a due date. The banks have received beforehand the number of the invoice and the amount to be paid. The payer just needs to order the payment from the bank’s online service, for the amount set in the original invoice. These payments are already related to a specific account number identifying the service being paid and the amount, so that possible mistakes are greatly reduced.
- 11 During the 1990s the Central Bank of Colombia undertook various infrastructure investments which enable it today to have the CUD, a RTGS which supports CEDEC, an electronic clearing system for high-value checks; DCV a Central Securities Depository which administers de-materialised securities; SEN, the Electronic Trading System in which securities are traded between financial institutions; and CENIT, the ACH which today could support up to 300,000 transactions per cycle. Apart from these, the Central Bank also administers the Central Counterpart Clearing house and the Foreign Exchange Clearinghouse, of which its monetary operations are settled through the CUD. Source, Banco de la República, “Reporte De Sistemas De Pagos”, Subgerencia de Operación Bancaria, Junio de 2010.
- 12 The Ministry of Finance continues to use CENIT in part because it gets a preferential rate for transactions (US\$ 0.08), lower than would have been possible if it depended only on the private ACH.
- 13 Founded as an independent private company in November 2000 as a result of the merging of 2 former private small ACHs. Today it has 17 shareholders and 19 users including banks, some cooperatives, and trust fund companies. The 6 largest banks own 60% of shares and 40% is distributed among the other shareholders.
- 14 The SIIF process involves different stages: All the federal institutions have to upload their detailed budget and each time they have to pay, they need to validate the expenditure and ask for the funds indicating the account of the recipient (they have 500,000 registered accounts). When authorized, payments are ordered by the Treasury and are processed through the accounts at the Central Bank through CENIT-ACH to the accounts of providers or beneficiaries at the banking institutions. SIIF has databases needed to identify the bank account for each intended individual payee. <http://www.minhacienda.gov.co/HomeMinhacienda/siif>.
- 15 Law 298, 1996. http://www.suin-juriscol.gov.co/contenidos/dli?f=templates&fn=default.htm&form_busqueda=leyes#LPHit1.
- 16 Included all 170 institutions at the Federal level. Decree 2806, 2000. http://www.suin-juriscol.gov.co/contenidos/dli?f=templates&fn=default.htm&form_busqueda=decretos.
- 17 Conpes Document 3072, February 2000. <https://www.dnp.gov.co/>.
- 18 <https://www.gobiernoenlinea.gov.co/>.
- 19 World Telecommunication/ICT Indicators Database, available at <http://www.itu.int/en/ITU/Statistics/Pages/publications/wtid.aspx>.
- 20 Credit cards doubled in number in the past four years due to an active expansion scheme of big retailers such as Exito, the biggest supermarket in Colombia, with its Tuya card in an alliance with Bancolombia (approx 1.5 million) Codensa, an electricity utility which sold its portfolio to Banco Colpatria 2 years ago, (0.75 million cards); and Falabella, a bank that belongs to a department store (0.9 million). All of these, except 40% of Falabella, are all of them with non-franchise cards. Debit cards have been expanding also very rapidly due to the efforts.
- 21 According to interviews with banks and other stakeholders interviewed for this case study.
- 22 See <http://www.asobancaria.com/>.
- 23 Banco Agrario, as a public bank, is the only one allowed to receive and keep this kind of deposit.
- 24 This required coming to an agreement on a fee structure that considered the bank’s geographical outreach as the largest in Colombian financial system. Banco Agrario has 1044 branches in 717 municipalities, in another 200 municipalities it operates with agents, and in 94 very distant and small municipalities it is the only bank available. The fee structure agreed upon includes the recognition of a special price for ACH transfers into accounts in those municipalities where Banco Agrario is the sole financial presence.
- 25 Up until 2008, ownership was a prerequisite to use ACH transfers. By 2010, this requirement was eliminated allowing financial institutions to use ACH transfers without becoming owners, and to have the guarantee of service in the same conditions as the shareholders. Nowadays, 17 banks own ACH Colombia.
- 26 Decree 3667, 2004. http://www.suin-juriscol.gov.co/contenidos/dli?f=templates&fn=default.htm&form_busqueda=decretos.

- 27 For example, one challenge was to decide who would administer and save, in a centralized form, the information of all the contributions and payments. It was decided that the Central Bank would use its ACH platform, CENIT, to process and store the information.
- 28 <https://www.nuevosoi.com.co/inicio>. Other social security information operators designed similar electronic platforms. To date, there are eight electronic platforms that end up in PSE payments and ACH transfers.
- 29 There are six social security subsystems whose contributions have to be made using PILA: health, pension funds, severance funds, insurance, family compensation funds, being the most important.
- 30 Though the PILA system was meant to be totally electronic, the government had to design a mechanism (PILA asistida) for people without accounts in the banking sector, allowing them to use the electronic PILA to calculate the contribution, but ending up paying in cash in a branch.
- 31 <http://www.vuce.gov.co/>. The Doing Business Report for 2014 recognizes Colombia's VUCE as an example of a Trade Single Windows with Singapore, and Azerbaijan. (p. 62 and 63).
- 32 The regulatory environment by this time was clear. In 1999 Law 527 regulated access and the use of data messages, e-commerce, and electronic signatures, defining the entities allowed to certify their validity. The regulation's main objective was to set an adequate legal framework allowing e-commerce development within a safe environment. This kind of framework was key to the development of e-commerce schemes.
- 33 Hosting services help businesses connect their webpage to PSE, can host the webpage, or can merely provide service to link them. In any case, transactions occur between each business and PSE directly, and the resources of each payment are credited to the businesses' banks immediately.
- 34 *Pasarelas* or e-payment gateways, are aggregators that interconnect onto its own platform many businesses and from there link to PSE. Transactions are undertaken on behalf of each *pasarela*, which negotiates merchant discounts taking advantage of volume offered to its acquiring bank. Funds are transferred to each establishment several days after the purchase is confirmed, depending on the negotiation.
- 35 In all cases, the business wanting to use PSE has to be "acquired", by a bank as well, to be able to receive payments.
- 36 Interviews with companies suggest that developing a platform in-house may cost US\$3,000- US\$5,000 up front, and would require constant upgrading.
- 37 The annual inflation rate was 4.3% during the same period.
- 38 Interview with the president of the Colombian E-commerce Chamber, El Universal, December 24 2013.
- 39 This is the case for example, of a hosting service that specializes in schools.
- 40 <http://portal.psepagos.com.co/web/banco-de-occidente/busador>
http://www.zonapagos.com/t_portalbbva/default.asp
<https://www.banco.colpatria.com.co/PagosElectronicos/AgreementCategory.aspx>.
- 41 For example, Colpatría is already using PSE to collect all loan payments, including credit cards. <https://www.colpatria.com/>.
- 42 Red Multibanca Colpatría, Pagosonline, Portal Zona Pagos Bbva, Banco Comercial Av Villas, and Mercadolibre Colombia S.A.
- 43 According to a Com Score survey, 35% of Colombian online shoppers spent between US\$500 and US\$1,000 online while 34% exceeded these amounts. <http://www.iabcolombia.com/lo-ultimo/e-commerce-incremente-sus-ventas-gracias-a-internet/>.
- 44 <http://www.slideshare.net/JosLuisValdivielso/internet-and-e-commerce-report-for-latinamerica-2012>.
- 45 All businesses with more than 30 employees are required to pay electronically. Smaller businesses and independent workers are exempt.
- 46 Colombia's new financial inclusion strategy has emphasized electronic payments and transfers as a focus for the next four years. See <http://www.minhacienda.gov.co/portal/page/portal/HomeMinhacienda/saladeprensa/MinHacienda-lanza-Estrategia-Nacional-de-Inclusion-Financiera>.

About the Better Than Cash Alliance

The Better Than Cash Alliance is an alliance of governments, private sector, and development organizations committed to accelerating the shift from cash to electronic payments. The Better Than Cash Alliance is funded by the Bill & Melinda Gates Foundation, Citi, Ford Foundation, MasterCard, Omidyar Network, USAID, and Visa Inc. The UN Capital Development Fund serves as the secretariat.



To learn more, visit www.betterthancash.org and follow @BetterThan_Cash.